Technical Assistance Consultant's Report

Project Number: 46047-001
October 2013

People's Republic of China: Guangxi Nanning Vocational Education Development Project
(Financed by the Technical Assistance Special Fund)

Volume 2b (continuation)

Prepared by the consultants of TA 8158-PRC: Guangxi Nanning Vocational Education Development Project in the People's Republic of China

For the Nanning TVET Project Office, Nanning Health School, and Nanning No. 4 Vocational & Technique School

ANNEX

Annex 1. Contents of the Elderly Nursing Course

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7 Drug safety care of the elderly
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8 Common health problems and the nursing of the elderly including:
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d. Common health problems and the nursing of the elderly
Common senile disease nursing

Annex 2. Nanning Health School Program Outlines

南宁市卫生学校2012级护理专业教学计划NN Health School 2012 Grade Nursing Major Teaching Plan

课程分类Classify	顺序	课程名称Course Name	考试Exam	考查	学时数Class hr			学时分配Class hour distribution						
					总计total	理论theory	实践practice	第一学年1st Y			第二学年2nd Y			第三学年3rd Y
								1学期 1st term		2学期 2nd term	3学期 3rd term	4学期 4		5、6学期 5 and 6
								1	17	17	17	4	1	48
文化课模块Culture basis module	1	职业生涯规划Occupation career planning		1	34	28	6	职业认知教育Occupation Education	2				实习前强化训练Intensive training before	Graduation Practic
	2	职业道德与法律Occupation morals and law		2	34	28	6			2				
	3	心理健康mental health		1	34	28	6		2					
	4	政治经济与社会Political, economic and social		3	17	11	6				1			
	5	哲学与人生Philosophy and life		4	12	10	2					3		
	6	体育与健康Sports and health		1234	110	8	102		2	2	2	2		
	7	语文应用基础（含护理应用文写作、普通话）Chinese lesson		13	68	48	20		2		2			
	8	英语English		3	34	24	10				2			

	9	医用化学基础Basic medical chemistry		3	34	18	16	t i o n			2			
	10	数学应用基础Mathematics Based		3	17	14	3				1			
	11	计算机应用基础Computer application foundation		12	68	22	46		2	2				
	12	安全教育safety education		1	8.5	6.5	2		0.5					
	小合计total				471	246	225							
专业基础课模块 Basic Nursing professional module	13	解剖学基础The anatomic basis	1		102	78	24		6					
	14	生理学基础Physiological basis		1	51	33	18		3					
	15	病理学基础The basis of Pathology		2	51	45	6			3				
	16	病原生物学与免疫学基础Pathogenic biology and Immunology		2	51	41	10			3				
	17	药物应用护理Application of nursing medication	2		51	33	18			3				
	小合计				306	230	76							
专业课模块 Nursing professional module	18	职业认知教育Occupation education		1	40	0	40							
	19	护理学基础Basic nursing	1234		216	71	145		5	3	4	3		
	20	护理礼仪Nursing etiquette		1	34	16	18		2					
	21	内科护理（含健康评估、传染病）medical(internal medicine) nursing	1234		275	195	80		5	5	5	5		
	22	外科护理Surgical nursing	1234		216	156	60		4	5	3	3		
	23	妇产科护理Gynaecology and obstetrics nursing	1234		105.5	60.5	45		0.5	3	2	3		

	24	儿科护理pediatric nursing	1234		97	65	32			3	2	3		
	25	心理与精神护理Psychological and mental care		2	51	37	14			3				
	26	护理专业技术实训Nursing technical training	3.4		63	0	63				3	3		
	27	急救护理技术Emergency nursing		4	24	8	16					6		
	28	社区护理Community Nursing		3	17	11	6				1			
	小合计				1139	619.5	519							
限选课 limited optional courses	29	老年护理Elderly care		3	25.5	17.5	8				1.5			
	30	中医学基础Basic Traditional Chinese Medicine		3	17	11	6				1			
					43	29	14							
任选课 Optional course	31	人际沟通 Interpersonal Communication		3	34	18	16				2			
	32	护理伦理学 Nursing Ethics		4	20	14	6					5		
	小合计				54	32	22							
实习前强化训练Intensive training before Graduation practice				4	40	0	40							
毕业实习Graduation practice					1440	0	1440							
合计Total					3492	1155.5	2336	40	36	37	34.5	36	40	
毕业考试课程 The graduation examination course	1、护理学基础Basic nursing 2、内科护理medical(internal medicine) nursing 3、外科护理 surgical nursing													

附：新生入学教育1周、军训1周 1 week of entrance education and 1 week Military training for Freshmen

Annex 3. Sample Module

MODULE ONE

Title: Introductory Module
Concepts, Practice and Theory
Duration: 2 weeks – 60 hours
ECTS Credit points: 3

Module Content Summary

This module introduces the student to the key concepts which have shaped the gerontological nursing curriculum. The approach will encourage the student to build upon, integrate and expand their existing knowledge, skills and experience using the new knowledge and experiences which will be gained as a result of studying the curriculum. The close relationship between the practice of nursing and the theoretical and research knowledge related to nursing will be explored using examples from gerontological nursing. The teaching and learning strategies will encourage the nurse to get to know her fellow students and to share professional knowledge and experiences. The value of debate about the relevance of the theoretical content to gerontological nursing practice will be explored.
This module will take place in the university or equivalent institute setting.

Syllabus

The Gerontological Nurse
Typical clinic and care scenarios
The competency-based and research-based curriculum
Concept of competence
Androgogy – appropriate teaching and learning strategies for students and for elderly patients
Facilitation of learning
Problem-solving
Teamwork
Debating as a form of constructive challenge
Analytical and critical thinking and its relationship to the practice of gerontological nursing
Continuing professional development/lifelong learning

Competencies or Learning Outcomes

On completion of this module, the student will be able to demonstrate:

- understanding of how previous learning and experience can inform and enrich the new knowledge and skills necessary for the practice of gerontological nursing;
- knowledge of a variety of teaching and learning strategies which may be appropriate to the education of nurses and of patients and their carers;
- an understanding of competence and its relevance in nursing practice and in the team
- approach to care;
- an analytic and critical approach to discussion and constructive debate about nursing issues;
- a commitment to lifelong learning and continuing professional development.

Reading List

WHO publications
National and international literature covering the syllabus
Where accessible – on-line and distance learning materials

Teaching/learning Strategies

Lecture (key concepts) Case studies
Reflective exercises Seminars
Group work Debate and discussion

Assessment Methods

Dates on which assignments are due: ……

Format of assignment:

Examination – multiple choice and short answer questions – 50% of whole
Short essay – approximately 600 words – 50% of whole
The student will choose a concept from those listed in the syllabus and discuss the relevance of the chosen concept to her personal understanding, at this early stage of the course, of what will be expected of her as a qualified Gerontological Nurse.

Examination: Mark awarded ……..%
Essay: Mark awarded ……..%
Aggregate mark for module (out of 100%) ……..%

Reference

Source:

WHO European Strategy for Continuing Education for Nurses and Midwives, *Gerontological Nursing Curriculum,* 2003
Link:http://www.euro.who.int/__data/assets/pdf_file/0018/102267/e81554.pdf

Annex 4: Development Time and Cost Estimates

Curriculum development and specifically, learning resource development time estimates varies greatly from person to person and organization to organization. Some of the primary reasons for the variance are:

- degree of experience of the developer;
- complexity of the material;
- extent to which multimedia is utilized; and
- experience with the development tools.

The need to be able to estimate development cost in education has led to the very useful concept of 'development time' per 'hour of instruction'. A review of time estimates for various instructional techniques yielded the ratios listed in Table 9Table 9 where the skill level of the developer was considered to be average.

Table 9

Learning Resource Development Time Estimates

Technique	Dev Time Hrs / Hr of ins
Seminar, Group, Debate and Discussion	1
Develop a Classroom Instruction/tutorial	4
Develop a very detailed course blueprint with learning modules- objectives - detailed activities – assessments	40
Develop a detailed case study	60
Develop a Distance course	200
Standard e-learning, including presentation, audio, some video, test questions, and 20% interactivity	220
3rd party courseware	345
New simulations from scratch.	750

Table 7. Learning Resource Development Time Estimates

Title	Hours	Teaching Technique	%	Dev Time	Total
Module Two	240	Course Outline		40	40
GERONTOLOGICAL NURSING I		Classroom Instructions	50	4	480
Psychological and Social		eLearning	10	200	4800
Aspects		Seminars	10	1	24
		Group work	10	1	24
		Debate and discussion	10	1	24
		Tutorials	5	1	12
		Use of reflective diaries	5	1	12
					5416
Module Three	240	Course Outline		40	40
GERONTOLOGICAL NURSING II		Supervised practice with mentor	60	4	576
Practice module		Tutorials in practice setting	10	4	96
Psychological and Social		Case study analysis and discussion	5	60	720
–Aspects		Seminars	10	1	24
		Critical incident analysis	10	2	48
		Use of reflective diaries	5	1	12
					1516
Module Seven	240	Course Outline		40	40
GERONTOLOGICAL		Classroom Instructions	20	4	192
NURSING III		Peer group discussions	20	1	48
		Multidisciplinary seminars	20	1	48
		Group work	10	1	48
		Debate and discussion	10	1	24
		Tutorials	5	1	24
		Use of reflective diaries	5	1	12
					436
Module Eight	240	Course Outline		40	40
GERONTOLOGICAL NURSING IV		Supervised practice with mentor	70	4	672
Practice module – Physical		Tutorials in practice setting	10	1	24
and Spiritual Aspects		Case study analysis and discussion	5	60	720
		Critical incident analysis	10	2	48
		Mentoring and supervision of junior colleagues	5	4	48
					1552

Table 8 Breakdown of Development Activity

Module by Activity	Percentage of Time	Module Hrs.
GERONTOLOGICAL NURSING I		**5416**
Needs Assessment	3%	162
Prepare Project Plan	2%	108
Conduct Course Content/Learning Analysis	5%	271
Develop Instructional Media Design Package	10%	542
Develop Prototype Lesson	5%	271
Develop Flowcharts	3%	162
Develop Script/Storyboards	19%	1029
Produce/Acquire Media (Photos, audio, video)	13%	704
Author Course	30%	1625
Evaluate the Course (In-Process Reviews)	10%	542
	100%	
GERONTOLOGICAL NURSING II		**1516**
Needs Assessment	3%	45
Prepare Project Plan	2%	30
Conduct Course Content/Learning Analysis	5%	76
Develop Instructional Media Design Package	10%	152
Develop Prototype Lesson	5%	76
Develop Flowcharts	3%	45
Develop Script/Storyboards	19%	288
Produce/Acquire Media (Photos, audio, video)	13%	197
Author Course	30%	455
Evaluate the Course (In-Process Reviews)	10%	152
	100%	
GERONTOLOGICAL NURSING III		**436**
Needs Assessment	3%	13
Prepare Project Plan	2%	9
Conduct Course Content/Learning Analysis	5%	22
Develop Instructional Media Design Package	10%	44
Develop Prototype Lesson	5%	22
Develop Flowcharts	3%	13
Develop Script/Storyboards	19%	83
Produce/Acquire Media (Photos, audio, video)	13%	57
Author Course	30%	131
Evaluate the Course (In-Process Reviews)	10%	44
	100%	

GERONTOLOGICAL NURSING IV		**1552**
Needs Assessment	3%	47
Prepare Project Plan	2%	31
Conduct Course Content/Learning Analysis	5%	78
Develop Instructional Media Design Package	10%	155
Develop Prototype Lesson	5%	78

Module by Activity	Percentage of Time	Module Hrs.
Develop Flowcharts	3%	47
Develop Script/Storyboards	19%	295
Produce/Acquire Media (Photos, audio, video)	13%	202
Author Course	30%	466
Evaluate the Course (In-Process Reviews)	10%	155
	100%	

Table 9 Summary of Development Activities by Hours and Years

Development Activity	Summary hrs	Yrs	Cat.Summary
Needs Assessment	268	0.17	
Prepare Project Plan	178	0.11	
Conduct Course Content/Learning Analysis	446	0.28	0.56
Develop Instructional Media Design Package	892	0.56	
Develop Prototype Lesson	446	0.28	
Develop Flowcharts	268	0.17	
Develop Script/Storyboards	1695	1.06	2.62
Produce/Acquire Media (Photos, audio, video)	1160	0.72	
Author Course	2676	1.67	2.40
Evaluate the Course (In-Process Reviews)	892	0.56	
	8920	5.58	
DACUM Specialist	Content Specialist	Learning Resource Technologist	

Annex 5 Equipment

Nursing Equipment

Stethoscope
Thermometers
Medical Scissors
Calculators
Clothing
Surgical lights
Medical Stretchers
Pulse Oximeters
Surgical Tables
Exam Tables
Respiratory ventilator
EKG Monitors
Eternal Feeding Pumps
Infusion Pumps
Infant Care
Fetal Monitors
Anesthesia Equipment
Defibrillators
Multi-Parameter Monitors
Hospital Beds
Wheel Chairs
Automated External Defibrillator
Blanket Warmers
infusion therapy pumps
external feeding pumps
Accessory, work, instrument Tables
IV poles
Scrub sinks
Supply Cabinets

Disposable ICU equipmentClass/Lab Equipment Supply List

Antiembolitic hose (Ted hose)
Bath basins
Bed linens/pillows
Bedpans (fracture and regular with covers)
Bedside commode
Call lights and/or tap bells
Canes (single/quad/or tripod)

Catheter equipment with drainage bag
Colostomy bag (other equipment for changing bag)
Crutches/walker
Dentures and oral cleaning supplies
Disposable briefs
Emesis basins
Face masks
Gait/transfer belt (man's leather belt)
Geri-chair or wheelchair
Gloves
Graduated measuring containers
Handrolls (commercial or rolled washcloth)
Hand washing supplies (sink, paper towels, soap)
Heel/elbow protectors
Height/weight measuring equipment(includes standard scales)
Hospital gowns/isolation gowns
Hospital unit including bed with side rails, overbed table, and bedside table
Hot and cold compresses (commercial type)
Lap-n-lock and/or lap boards used with wheelchair/geri-chairs
Lift sheets (linen pads)
Manikins (full body for medical teaching)
Shaving supplies
Specimen containers (urine, stool, and sputum)
Sphygmomanometers(Pulse Oximeters)
Standard eating equipment (plate, cup, glass, fork, knife, spoon), non-disposable
Standard forms/flow sheets used for documentation by CNAs
Stethoscopes (regular and teaching)
Thermometers
Urinals

Elderly Care Aide Equipment

This equipment has been separated into a one time capital expense and a one year operating expense. Although there are many ways to group the equipment no particular scheme has been followed but heading have been provided in order to provide context.

Resident Room:

Capital Equipment
Adequate space, lighting and ventilation
A sink with hot and cold running water with hand faucets accessible in the room
Hospital bed with regular mattress (no air mattresses, etc.) (electric or manual)
Positioning rail
Over-bed table
Bedside table (night stand)
Call light (may be simulated)
Side chair or straight chair
Soiled linen hamper
Provisions for privacy: curtain or screen
Commode or toilet
Wheelchair with footrests and brakes
Geri-chair
Lamp
Wastebasket
Bedpan and cover (fracture pan and full bedpan)
Bathtub and shower (in clinical setting)
Basin
Soap dish
Bath thermometer
Shower chair
Bath mat
“Occupied” sign

Measuring and Recording Supplies:
Digital thermometers
Lubricant for rectal temperature
Scale (non-digital, stand-up scale)
Device for measuring height (measuring device that is attached to a stand-up scale)
Watch or clock with second hand for vital signs
Blood pressure cuff (sphygmomanometer) multiple sizes
Stethoscope (single and double earpiece)

Linens:
Sheets (flat and fitted)
Blanket or bed spread
Pillowcases
Gowns and bedclothes
Washcloths
Towels
Bath blankets
Under pads (disposable, reusable, or comparable substitute)
Covered pillows for positioning (minimum of 4)
Lift Pad

Nutrition Supplies:
Dishes
Dish covers
Food trays
Clothing protector
Spoon, knife and fork (including common assistive devices)
Napkins
Water pitcher

Ambulation/Transfer Supplies:
Cane
Transfer belt or gait belt
Crutches
Mechanical lift
Walker
Trapeze
ups
Standard measurements for fluid containers

Special Items:
Anti embolism stockings (TED)
Foot board
Foot stool or ottoman
Hand rolls
Heel and elbow protectors
Over-bed cradle (optional)
Positioning devices
Pressure relieving mattress
Stretcher (optional)
Synthetic lambs wool
Small calculator
Waist restraint, lap buddy, bed/chair alarms

Teaching Supplies:
Anatomical Chart
Charts forms (e.g. ADL flow sheets, food acceptance records, intake and output records, graph and flow sheets

for vital signs, blood pressure and weights)
Medical dictionary
Weights and measures equivalence chart
Incident/accident forms
Turning schedule

Miscellaneous:
Tape measure
"No Smoking" signs
Mannequin (jointed and anatomically correct)

Disposable Equipment

General
Sample menu's
Straws
Diet card
Cereal and milk, jell-o or pudding
Facial tissues
Pencil and paper for candidate's recording
Paper towels and dispenser
Disinfectant for cleaning supplies

Toileting Supplies:
Toilet tissue
Catheter
Incontinence briefs
Urinary drainage bag (drainage spout must be type that inserts into a pouch)
Alcohol Swabs
Leg band to secure catheter or tape
Graduated container (preferably clear plastic)
Yellow food coloring or a substitute to color the water
Funnel or irrigation syringe to fill the urinary drainage bag
Urinal
Air freshener
Cotton balls
Urine collection device

Clothing: (Normal and adaptive)
Undershirt
Pants (sweat suit or elastic waist pants)
Button front shirt
Socks
Non-skid foot wear
Slip or half slip
Underpants
Bra or camisole

Mouth Care Supplies:
Emesis basin for spitting
Toothbrush
Toothpaste
Denture container
Denture cleaner or toothpaste
Full set of real dentures
Mouthwash and swabs for oral care
Drinking cups
Water pitcher
Dental floss
Lubricant (lip balm)
Flashlight
Tongue blade

Bath Supplies:
Robe
Soap, regular and/or rinse-less type
Deodorant
Q-tips

Grooming Supplies:
Combs
Brushes
Curlers
Skin care supplies (lotion, oil, etc.)
Nail clippers
Nail file or emery boards
Orangewood sticks
Razors
Shaving cream/soap
Shampoo
Blow dryer
Pail
Water proof sheets or Rinsette
Large pitcher
Safety pins
Mirror
Hair accessories
Aftershave
Styptic pencil
Electric shaver

Infection Control:

Disposable gloves (assorted sizes)
Disinfectant for cleaning supplies
Plastic bags
Isolation gowns and masks
Plastic isolation bags
Isolation tags
Plastic apron
Goggles
Gauze

Training Aids

Blood Pressure Arm
Breast Care Flip Chart
Breast Model with Interchangeable Nodules
Breast Self Examination Trainer
EVA Gynecologic Manikin
Forceps/ Vacuum Delivery OB Manikin
Geriatric IV Arm
Male & Female Catheterization Trainers
Obstetrical Manikin
Patient Care Manikin
Pelvic Bone with Fetal Heads on Stand
Swine Flu Prevention Kit
NG Tube Insertion Trainer
Overview of Male Circumcision Model
Inflatable Lungs Comparison Kit
Body Muscle & Fat Replicas
Cath-Ed Simulators
Male Catheterization Simulator
Enhanced Muscle Replicas
Female Catheterization Simulator
Female Catheter Model
Auscultation Manikin
The Complete Nursing Skills Manikin
Intramuscular Injection Simulator
Ostomy Care Simulator
Stump Bandaging Simulators
Skeletons for Teaching and Demonstration
Testicular Exam Simulator
NG Tube & Trach Skills Simulator
Advanced Childbirth Simulator
Arterial/Venous Training Arm
Baby Care Kit
Baby Simulators
Breast Health Education Kit
Breast Vest
Buttock Mate
Chester Chest™
Fibrocystic Breast Model
Functional Heart and Circulatory System Model
Injection Teaching Model
Maternal and Neonatal Birthing Simulator
Infant Venous Access Simulator
Stan Stage IV Pressure Ulcer Model
Newborn Advanced Care Simulator

Complete Geri Manikin with Heart and Lung Sounds
Product No: AB-2405
Same great features as the Complete Geri, plus these great heart and lung sounds. Heart sounds include normal, holosystolic, systolic click, aortic regurgitation, mid systolic, atrial septic defect, mitral stenosis, S3 gallup, PDA, pulmonary stenosis, S4 gallup, and VSD.

Lung sounds include normal, rhonchi crackle, bronchial, egophony, wheeze, stridor, pulmonary edema, mono wheeze, coarse crackle, friction rub, fine crackle, cavernous, and pectoriloquy.

Advanced Geri Geriatric Manikin
Product No: AB-2425
All the features of the complete Geri and Keri manikins, plus:

- Training Arm with replaceable skin, palpable veins, realistic flashback, and intramuscular injection capability.
- Blood Pressure Training Arm: reproduces Kortkoff sounds; variable systolic and diastolic levels, pulse rate, volume, and auscultatory gap.

Price: $2,725.00

Complete Geri Geriatric Manikin
Product No: AB-2400
Procedures include urinary catheterization, enema administration, douching, eye and ear irrigation, intramuscular injection, oral and nasal lavage, gavage, and suctioning.

Exams include prostate exam, pap smear, visual inspection of ulcers and moles, and dilated pupil comparison.

Care includes ostomy care, tracheostomy care, hair washing, patient transfer and positioning, denture removal, hearing aid removal and insertion, bed baths, and clothing changes.
Trunk, shoulders, elbows, wrists, fingers, neck, hip, knees, ankles, and toes all bend and flex realistically.

Annex 6 Physical Requirements for a Residential Care Laboratory

B.C. Reg. 96/2009
O.C. 225/2009
Deposited March 13, 2009 effective October 1, 2009

Division 1 — General Physical Requirements

Directional assistance

13 A licensee must provide directional signs and other directional information or assistance sufficient to meet the needs of each person in care.

Accessibility

14 (1) A licensee must ensure that a person in care who requires a mobility aid may access, in a manner appropriate to the needs of the person in care, all areas intended for use by persons in care.

(2) A licensee who provides a type of care described as Long Term Care must ensure that each hallway intended for use by persons in care is at least 1.83 m wide.

(3) A licensee must ensure that all controls for signalling devices, lights and elevators can be accessed and used without difficulty by all persons in care.

Windows

15 (1) A licensee must ensure that, if necessary for the health and safety of a person in care, windows are secured in a manner that prevents a person in care from falling from, or exiting through, the window.

(2) Subsection (1) does not apply to emergency exits that are window-accessed.

Temperature and lighting

16 (1) A licensee must ensure that the temperature in each bedroom, bathroom and common room is safe and comfortable for a person who is carrying out the types of activities that would be reasonably expected in the ordinary use of the room.

(2) A licensee must ensure that each bedroom, bathroom and common room is lit sufficiently to

(a) permit a person to carry out effectively the types of activities that would be reasonably expected in the ordinary use of the room, and

(b) protect the health and safety of a person using the room.

(3) A licensee must ensure that the lighting, both natural and artificial, and temperature of a room intended for the private use of a person in care meets the needs and preferences of that person.

Water temperature

17 A licensee must ensure that water accessible to a person in care, from any source, is not heated to more than 49° Celsius.

Telephones

18 A licensee must provide at least one conveniently located telephone, for use only by persons in care, that
(a) has a private line,
(b) has adaptations, as necessary, to meet the needs of persons in care, and
(c) is accessible to persons in care at all times.

Monitoring, signaling and communication

19 (1) If a person in care requires monitoring, or a signalling device, to ensure that person's health and safety, a licensee must provide a monitoring system or signalling device that
(a) is appropriate to the needs of the person in care,
(b) will identify to employees the location of the person in care, and
(c) will signal to employees that the person in care needs immediate assistance.
(2) A licensee must provide communication devices and other means of communication that
(a) are appropriate to the needs of the persons in care,
(b) enable persons in care to communicate their needs to employees, and
(c) enable employees to communicate with each other in respect of the needs of persons in care.
(3) If a licensee installs electronic devices for the purposes of transmitting or recording images of persons in care or members of the public, the licensee must display in a prominent place notice that electronic surveillance is being used.

Emergency equipment

20 A licensee must ensure that a community care facility having fewer than 7 persons in care has the following emergency equipment:
(a) interconnected smoke alarms, appropriate to the needs of persons in care and installed in each bedroom and in each hallway leading to a bedroom;
(b) sprinklers that conform to the British Columbia Building Code;
(c) emergency lighting that will automatically illuminate the hallways and stairs for at least 30 minutes in the event of a power failure.

Equipment and furnishings

21 A licensee must ensure that all furniture and equipment for use by persons in care
(a) meet the needs of the persons in care,
(b) are compatible with the health, safety and dignity of the persons in care,
(c) are maintained in a good state of repair, and
(d) are maintained in a safe and clean condition.

Maintenance

22 (1) A licensee must ensure that all rooms and common areas are
(a) well ventilated,
(b) maintained in a good state of repair, and
(c) maintained in a safe and clean condition.

(2) A licensee must ensure that emergency exits are not obstructed or secured in a manner that may hinder exit in an emergency.

(3) A licensee must ensure that all rooms and common areas, emergency exits, equipment, and monitoring and signalling devices are inspected and maintained on a regular basis.

Smoking

23 A licensee must ensure that

(a) no one other than a person in care smokes while on the premises of a community care facility,

(b) employees do not smoke while supervising persons in care, and

(c) if necessary for the safety of the person in care, a person in care who is smoking is supervised.

Weapons

24 A licensee must not permit on the premises of a community care facility weapons within the meaning of the Criminal Code (Canada).

Division 2 — Bedrooms

Bedroom occupancy

25 (1) A licensee must ensure that each person in care has a separate bedroom.

(2) Despite subsection (1), a licensee may accommodate 2 persons in care in a bedroom if

(a) fewer than 5% of the maximum number of persons in care that the community care facility is licensed to accommodate share a bedroom,

(b) the bedroom is screened in a manner that is sufficient to ensure the privacy and dignity of each occupant,

(c) measures are in place to protect the health, safety, personal comfort and dignity of each occupant, and

(d) a plan has been made for the transfer of one or both occupants, at the request of either of the occupants, to a separate bedroom.

(3) A licensee who provides a type of care described as Child and Youth Residential must ensure that no person in care who is over 6 years old is accommodated in a bedroom that is shared with a person of the opposite gender.

Physical requirements of bedrooms

26 (1) A licensee must ensure that each bedroom meets the needs and provides for the health, safety and dignity of the occupant.

(2) A licensee must ensure that each bedroom is directly accessible from a hallway without passing through any other room.

(3) If requested by a person in care, and unless it would be unsuitable given the health and safety needs of the person in care, a licensee must ensure that the entrance to the bedroom of the person in care can be locked from the inside.

(4) If a licensee provides a locked entrance in accordance with subsection (3), the licensee must ensure that, in an emergency, the bedroom entrance can be unlocked from the outside.

Bedroom floor space

27 (1) A licensee must ensure that each bedroom has at least the following amount of usable floor space:

(a) in the case of a bedroom occupied by one person in care who does not require a mobility aid, 8 m^2;

(b) in the case of a bedroom occupied by one person in care who requires a mobility aid, 11 m^2;

(c) in the case of a bedroom occupied by 2 persons in care, neither of whom requires a mobility aid, 14 m^2;

(d) in the case of a bedroom occupied by 2 persons in care, at least one of whom requires a mobility aid, 18 m^2.

(2) For the purposes of subsection (1), usable floor space does not include floor space occupied by the entrance and the swing of the entrance door, closets, wardrobe cabinets, fixed furniture or bathrooms.

Bedroom windows

28 (1) A licensee must ensure that each bedroom has a window that provides natural light to the bedroom, with coverings that block out light and protect the privacy of the occupant.

(2) A licensee must ensure that the window of each bedroom can be opened easily for ventilation, unless

(a) it would be unsuitable to the health, safety or dignity of the occupant, or

(b) the community care facility is equipped with an air conditioning system or mechanical ventilating system.

(3) If the occupant of a bedroom is non-ambulatory, the bedroom must have at least one window that provides visibility from a sitting position to the outside.

Bedroom furnishings

29 (1) A licensee must provide, at no cost to the person in care, each person in care with bedroom furnishings, including

(a) a safe, secure place in which the person in care may store valuable property, and

(b) a closet or wardrobe cabinet measuring at least 0.50 m^2.

(2) Except as necessary to maintain the health, safety and dignity of other persons in care, a licensee must permit each person in care to bring into the community care facility, and keep in the person in care's bedroom, furniture, ornaments or other personal possessions.

Division 3— Bathroom Facilities

Physical requirements of bathrooms

30 A licensee must ensure that all bathrooms have

(a) a door, equipped with a lock that can be opened from the outside in the case of an emergency,

(b) slip resistant material on the bottom of each bathtub and shower,

(c) conveniently located and securely attached grab bars beside each toilet, bathtub and shower, as required to meet the needs and preferences of the persons in care, and

(d) any other equipment that is necessary to protect the health, safety and dignity of the persons in care.

Bathrooms in facilities other than long term care facilities

31 A licensee, other than a licensee who provides a type of care described as Long Term Care, must provide

(a) one washbasin and one toilet for every 3 persons in care, and

(b) one bathtub or shower for every 4 persons in care.

Bathrooms in long term care facilities

32 A licensee who provides a type of care described as Long Term Care must provide

(a) for the number of persons in care on a floor and in the same wing indicated in column 1 of the following table, the number of bathing facilities indicated in column 2 opposite the number of persons in care:

Item	Column 1 persons in care on floor and in wing	Column 2 bathing facilities on floor and in wing
1	3-6	1
2	7-25	2
3	26-40	3
4	41-60	4
5	61-75	5

(b) washbasin and toilet facilities appropriate to the needs of the persons in care next to each dining, lounge and recreational area, and

(c) for each bedroom, a washbasin and toilet for the exclusive use of the occupants of the bedroom.

Division 4 — Common Areas and Work Areas

Dining areas

33 A licensee must provide dining areas with

(a) seating for each person in care,

(b) at least 2 m^2 of usable floor space for each person in care, and

(c) sufficient tables designed to accommodate persons in care in wheelchairs.

Lounges and recreation facilities

34 (1) A licensee, other than a licensee who provides a type of care described as Long Term Care, must provide comfortably furnished lounge facilities that have, in total, at least 2 m^2 of floor space for each person in care.

(2) A licensee who provides a type of care described as Long Term Care must provide

(a) comfortably furnished lounge facilities that have, in total, at least 1.5 m^2 of floor space for each person in care, and

(b) suitably equipped and comfortably furnished areas designated for recreational activities, that have, in total, at least 1 m^2 of floor space for each person in care.

(3) Except as necessary for cleaning and maintenance, a licensee must ensure that the rooms referred to in subsections (1) and (2) are accessible to persons in care at all times.

Designated work areas

35 (1) A licensee must provide the following appropriately furnished and equipped areas:
(a) work areas for administrative work and other staff use;
(b) safe and secure locations for medications and the records of persons in care;
(c) secure, safe and adequate storage areas for cleaning agents, chemical products and other hazardous materials;
(d) separate utility areas for clean and soiled clothes, bedding and other articles.
(2) A licensee must ensure that laundry facilities
(a) if used by persons in care, have a slip resistant floor surface, and
(b) if not used by persons in care, cannot be accessed by persons in care.

Outside activity areas

36 (1) A licensee must provide outside activity areas that have
(a) in total, at least 1.5 m2 of space for each person in care,
(b) a surfaced patio area, and
(c) comfortable seating including a reasonable amount of shelter from sun and inclement weather.
(2) If necessary to protect the health or safety of persons in care, a licensee must ensure that the outside activity area is secured by a fence or other means.

Annex 7. Simulation Laboratory Specifications[132]

Equipment

Specific Practice Areas

All specific practice areas in the Simulation Laboratory include:

- High-tech mannequins that simulate symptoms, diseases, and conditions that nurses are likely to see in a real care setting (including psychiatric scenarios)
- Cameras, which can send data from the lab rooms to any of the classrooms in the simulation lab or from the classrooms to any of the lab rooms
- Control rooms attached to them, where the mannequin (including verbal communication) can be controlled by instructors
- Laptops at every bedside. Students use the same software used by the Medical Centers in order to prepare them for their future clinical experience in documentation
- The same equipment that is used in facilities where Nursing students receive their on-site clinical experience
- Head wall units to simulate oxygen administration and suctioning when necessary.
- Medication carts
- Crash carts
- EKG machines
- Ventilators
- Defibrillators
- TV screen
- fully AVDV (audio, video, data, voice) equipped

Control Center

- approximate size is 160 square feet in a long narrow configuration such as 20 by 8
- located in the middle of the simulation rooms
- site of all of the AVDV controls
- equipped with double sided glass to directly view simulation rooms

Critical care area

- 8 task trainers (mannequins)
- includes 5 simulation rooms for activities such as;:
  - Human patient simulator
  - Operating Room
  - Intensive Care Unit

  each room at least 400-500 square ft
- simulator, which simulates cardiopulmonary care needs, can accurately portray the sound, chest movements, and pulsations of someone with cardiac or respiratory disorders.

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[132] Derived from the Penn State Nursing School

- "Sim Man," the most up-to-date mannequin simulator, which can simulate cardiac respiratory failures. Students can start IV lines, insert catheters and chest tubes, assess acute/chronic diseases in all major body or body functioning systems. "Sim Man" can be attached to an EKG machine or ventilator, and can simulate any disease process to have students effectively perform procedures or administer medications.

Pediatric area

- nursing child mannequin, which can simulate heart sounds, lung sounds. Students can insert catheters, IVs.
- Control room attached for observation and videotaping of scenarios.

Maternity area

- Includes birthing mannequin named Noelle, which can simulate normal/abnormal birthing processes.
- Control room attached for observation and videotaping of scenarios.

General Skills Lab

1. approximately 1500 square feet
2. Multiple TV Screens
3. Hard wired internet for a minimum of 8 laptops
4. Multiple stations to cover skills such as:
   a. cardiac resuscitation
   b. central line placement
   c. suturing
5. room can double for mass casualty scenario, emergency room, or ICU with multiple beds

Advanced practice exam room w/control room

- Used for videotaping and testing purposes
- Can send data from one room to any other room (for example, from a lab to a classroom), to enhance students' education.

Other Areas of Simulation Lab

Main lab area

- Includes areas to separate up to 4 clinical sections of students (ten to fourteen each).
- Instructors can conduct physical assessment classes, health assessment classes, and fundamentals classes.
- Students can practice various procedure skills on mannequins or pair up and practice with other students.
- Portable smart board technology

Student lounge area

- Wireless/wired capabilities
- Includes access to library of textbooks required for nursing curriculum

- Includes TV
- Message boards in hallways that indicate lab hours, classes conducted in lab, and events in the School of Nursing

Annex 8 Sample Elder Care Program

The following program has been extracted from the:

WHO Europe, Gerontological Nursing Curriculum
WHO European Strategy for Continuing Education for Nursesand Midwives
2003

for the purpose of estimating the budget required for curriculum development in the Elder Care program in the NNHS.

Accreditation with ECTS points

Each module is assigned credit points using the European Credit Transfer System (ECTS). The ECTS system has been chosen because the European Community Directives guide nursing and midwifery education for all European Union countries and those accession countries which become members of EU (European Commission 1989). Credits are "a numerical value allocated to course units (modules) to describe the student workload required to complete them" (European Commission 1995). In other words the number of points does not reflect only the direct contact hours, e.g. while the student is attending a lecture, seminar, practical skills demonstration or tutorial and is in direct contact with the teacher, but also includes the number of hours which the student is expected to devote to independent study or practising of skills. Credit points take into account the learning in both the university, i.e. the theory component of a module, and in practice placements. The total number of ECTS credits for an academic year is 60. Their apportionment per module reflects the length of that module, calculated in weeks and number of hours. A week is taken as comprising 30 hours, and 20 hours equates to one ECTS credit point. Thus, a two-week, 60-hour module earns three credit points and a 16-week, 480- hour module earns 24 credit points. The overall length of the course is 40 weeks or 1200 hours which equate to 60 ECTS credit points. Further information on this system and its application to nursing education can be found in Section 8 of the Guidelines prepared to assist Member States with implementation of the initial Education Strategy (WHO 2001b).

Module One

INTRODUCTORY MODULE:
Concepts, Practice and Theory
2 weeks – 60 hours
ECTS credits – 3

Teaching/learning Strategies

Lecture (key concepts)
Case studies
Reflective exercises
Seminars
Group work
Debate and discussion

Module Two

GERONTOLOGICAL NURSING I
Psychological and Social Aspects
8 weeks – 240 hours
ECTS credits – 12

Teaching/Learning Strategies

Lectures
Case studies
Seminars
Group work
Debate and discussion
Tutorials
Use of reflective diaries

Module Three

GERONTOLOGICAL NURSING II
Practice module – Psychological and Social Aspects
8 weeks – 240 hours
ECTS credits – 12

Teaching/learning Strategies

Supervised practice with mentor
Tutorials in practice setting
Case study analysis and discussion
Seminars
Critical incident analysis
Use of reflective diaries

Module Four

INFORMATION MANAGEMENT AND RESEARCH
2 weeks – 60 hours
ECTS credits – 3

Teaching/learning Strategies

Lectures
Discussions
Group work
Case study presentations
Student-led seminars
Mentor Support

Module Five

DECISION-MAKING
2 weeks – 60 hours
ECTS credits – 3

Teaching/learning Strategies

Lectures
Discussions
Group work
Case study presentations
Student-led seminars
Mentor support

Module Six

LEADERSHIP AND MANAGING RESOURCES
2 weeks – 60 hours
ECTS points – 3

Teaching/learning Strategies

Lectures
Discussions
Practice in scheduling work rotas
Mentor support

Module Seven

GERONTOLOGICAL NURSING III
Physical and Spiritual Aspects
8 weeks – 240 hours
ECTS credits – 12

Teaching/learning Strategies

Lectures
Peer group discussions
Multidisciplinary seminars
Group work
Debate and discussion
Tutorials
Use of reflective diaries

Module Eight

GERONTOLOGICAL NURSING IV
Practice module – Physical and Spiritual Aspects
8 weeks – 240 hours
ECTS credits – 12

Teaching/Learning Strategies

Supervised practice with mentor
Tutorials in practice setting
Case study analysis and discussion
Seminars
Use of reflective diaries
Mentoring and supervision of junior colleagues

TA 8158-PRC: Project Preparatory Technical Assistance

PILOT KINDERGARTEN REPORT

Peter Huebner, Ph. D., Duan Suju,and Yang Dongmei

CONTENT

LIST OF DIAGRAMS AND TABLES

EXECUTIVE SUMMARY

1. The objective of vocational education is to develop the practical skilled staff, so the priority of vocational education is to strengthen the skills and improve the students' adaptability to the positions. Through strengthening the development of training base, the school conditions will be effectively improved, promoting the development of specialties, improving the practical capacity of students and the employment quality, fostering more and better skilled staff, and advancing the capacity and level of helping the local economic development of the schools.

2. The preschool education of N4VS is the only school which has the qualification of enrolling the students of preschool education major among the similar schools in Nanning. N4VS has also the biggest enrollment scope for preschool education in GZAR. It is important to improve the service quality of preschool education of Nanning and GZAR by improving the school quality and fostering more excellent graduates of preschool education major. The study found the issues of unreasonable curriculum structure, old teaching-learning methods, and personnel training out of practice and low expertise of teachers for the preschool education of N4VS by comprehensively using the methods of literature, questionnaire, interview and field-observation. The key of solving these problems is to strengthen the development of training base. Based on the analysis of training conditions of preschool education major, the study concludes that an affiliated experimental kindergarten should be established as the practice base for the students and further education and training base for professional teachers.

3. On the basis of complying with the national relevant regulations of running kindergarten conditions and learning the lessons of domestic and foreign high-quality kindergarten development, the study made the specific suggestion about the experimental kindergartens development from the main aspects of development vision, development thread and planning (school management conception, facilities, management mode, curriculum and teaching staff) etc.

I. INTRODUCTION

4. Kindergarten education is a main form of developing preschool education in China and its quality is always the priority of all levels of governments. In order to ensure the kindergarten education quality and fully meet the educational requirements of the public, the government mainly adopts two methods to ensure and improve the kindergarten development quality under the current educational management system of our country: (i) many local governments formulate and implement various policies, making a series of standard requests about kindergarten facilities and staff, formulating the identification standard of kindergarten's level, so as to urge the various kindergartens to improve the teaching quality all the time and meet the diversified educational requirements of the public; (ii) the government directly promotes the development of standard kindergarten with public finance and introduce the corresponding counterpart policy, requesting all levels of governments to strengthen the development of standard kindergarten which has the leading and demonstration effect, i.e. to develop the 'demonstration kindergarten'. On the whole, the schooling level of the public demonstration kindergarten is generally high among the kindergarten development of various places, and school-running quality is ensured, having some demonstration and leading effects for the development of kindergartens of different levels and kinds.

5. However, it need to be pointed out that currently the number of public demonstration kindergarten in the country is very low and the coverage is very limited, compared with the people's requirements for the high-quality preschool service. Most children of school age receive their education only in other kinds of public and private kindergartens whose school-running qualities are uneven. Except for the demonstration kindergartens, many public and private kindergartens have many problems in terms of teaching staff, facilities, curriculum provision and school-running conception. This situation is very obvious in GZAR.

6. With this background and based on the overall consideration of preschool education development quality, the development of experimental kindergarten is prioritized in this project, exploring scientific mode of effective joint of experimental kindergarten development and kindergarten teachers training under the current economic and social development conditions of China, making the experimental kindergartens the pre-service training base of teachers, and providing a reference for the development of high-quality kindergarten education within the area.

II. SITUATIONAL ANALYSIS

A. THE CURRENT AND OVERALL DEVELOPMENT STATUS OF PRESCHOOL EDUCATION IN GZAR AND THE WHOLE COUNTRY

1. The Low Number of High-quality and Universally Beneficial Kindergartens and the Serious Lag of Kindergarten Planning and Development

7. According to the statistics of Ministry of Education, the total number of enrolled kindergartens in China was 166750 in 2011, including 51346 public kindergartens (run by education departments, other departments, local companies, public institutions and army, and collective and private ones), accounting for 30.8% of the total number, and 115404 private kindergartens, accounting for 69.2% of the total number; the enrolled kids in the whole country were 34244456, among which 17302366 were in the public kindergartens, accounting for 50.5%, and 16942090 were in the private ones, accounting for 49.5%. For GZAR, there were 7554 kindergartens in GZAR in 2012, among which there were 652 public ones (including 525 ones run by education department), accounting for 8.6%; and 6905 private kindergartens, accounting for 91.4%; the enrolled kids in GZAR were 1.659 million, including 0.827 million in the public kindergartens, accounting for 49.8%, and 0.832 million in the private ones, accounting for 50.2%. In recent years, along with the rapid urbanization of GZAR, the urban population grows year by year, but the planning and development of kindergarten lags behind severely. There are currently 92 demonstration kindergartens in GZAR, accounting for 1.2% of the total kindergartens. There are not demonstration kindergartens of provincial level in the 76 towns including Longan Town. In the meantime, all the levels of demonstration kindergartens are seriously over-enrolled, there being too many kids in the classes of urban kindergartens, some class having 60 kids. Among all kinds of kindergartens, the ones with ensured schooling quality are public, especially the ones run by education department. Therefore, no matter in the whole country or in GZAR, the resource of high-quality public kindergartens is obviously and seriously insufficient.

2. The Outstanding Issue of Kindergarten Teachers Shortage and the Low Professional Competence of the Teachers

8. Compared with the huge requirement of preschool education development, the issue of kindergarten teachers' shortage is outstanding and staff development lags behind even more. Many teachers do not have a professional background and the professional competence is not sufficient, which is manifested in the undeveloped areas, especially in the rural areas. Some regional research and study show that among the kindergarten teachers enquired, more than half of them do not have the teacher qualification certificate and the preschool education background, and many teachers think that their professional theory of preschool education and knowledge of teaching skills are old and need to be updated. Besides, the post-job training of kindergarten teachers lags behind and the contents and methods of post-job training are mere formalities, difficult to improve the teaching conception and

skills of the teachers. Many researches find that the contents of on-the-job training for the kindergarten teachers are generally not pertinent, especially the training for the rural kindergarten teachers. It cannot fully satisfy the actual demands of the teachers and the training focuses generally on the formality, not on the content. Taking GZAR as an example, according to the regulations of GZAR, there should be two teachers for every class, thus the number of full-time kindergarten teachers provision for GZAR should be 94800. However, besides the staff for management and child care, there are actually 44857 teachers, lacking 49943 full-time teachers, and the ratio between the number of full-time teachers and enrolled children is 1:37, among which the ratio between the number of public kindergarten teachers and children is 1:103, much too beyond the national standard of 1:6 to 1:7. Meanwhile most of the private kindergarten teachers have not been professionally trained and do not have the certificate to teach.

3. The Development and Implementation of Kindergarten Curriculum More like That of Primary School

9. Firstly, the object curriculum and subject curriculum coexist with each other, and too much attention is paid to the explicit effect of the special curriculum, not integrating the 'subject' and 'field' organically. Many research found that most kindergartens of China currently use the departmental mode in the curriculum provision and adopt different textbooks to teach. As for developing the special curriculum or individualized curriculum, the subjects which can easily produce obvious results or which can easily be demonstrated are chosen, such as English, reading and mathematics etc. Secondly, discipline is over-emphasized in choosing the curriculum contents, with large content quantity, and connections lacked among various curriculums. Under the curriculum development conception of departmental teaching, the subject logic of curriculum is prioritized in choosing the kindergarten curriculum content, neglecting the integrity and comprehensiveness of kids learning and the curriculum contents are more like those of primary school. The research found that many kindergartens individually develop a mathematics curriculum, introducing the education contents of primary school mathematics into kindergarten and asking the children to finish homework and school work every day. Thirdly, the curriculum implementation mode is focused on game teaching, but most of them are implemented in the way of mass instruction, games being in service of teaching and the game teaching actually being 'departmental games'. Some studies discovered that in the kindergartens investigated 73% of them specially develop the separate teaching games, among which 33% is focused on the teaching games completely. Besides, it is a universal phenomenon that the teaching mode of 'method of lecture' and 'cramming mode' which are more like those of primary school are adopted, being teacher-centered, in the curriculum implementation.

B. DEVELOPMENT PLANNING

10. Based on the current main issues of preschool education development in China and GZAR, and a series of policy documents and development planning issued by People's Government of GZAR in

recent years, and the various actual status acquired in the research, the following are focused in the development planning of the experimental kindergarten development:

1. Forming an Experimental Kindergarten Development Program with Clear Standards, Ensured Quality, Convenient Processing and Demonstration Effect, to Promote the Experimental Kindergarten Development

11. In recent years, NMG issued Implementation Opinions on Facilitating Preschool Education Development and The Action Plan of Nanning Preschool Education for Three Years (2011-2013) successively, in which it was pointed out that the total number of kindergartens in Nanning reached 1986, among which the number of public ones reach 593. The local economic development, social population structure and the basis of local preschool education need to be prioritized to achieve the goal above. Taking the Yongning District of Nanning for example, in the economic development aspect, GDP of Yongning was 4.133 billion Yuan, PGDP being 12357 Yuan, total investment in fixed assets being 2.534 billion Yuan, fiscal revenue being 310 million Yuan, gross industry output value being 1.994 billion Yuan, total retail sales of consumer goods being 960 million Yuan, urban per capita disposable income being 15858 Yuan and rural per capita net income being 4968 Yuan, according to the statistics in 2010.

12. In the social population aspect, the census population of Yongning was 0.3239 million, among which the rural population was 0.278 million; there were 19 ethnic groups in this district, such as Zhuang, Han, Yao and Miao etc. The ethnic groups inhabiting together include Zhuang and Han, the ones inhabiting scatteredly include Yao, Miao, Dong, Mulao, Hui, Man, Maonan, Jing, Shui, Yi, Gelao, Tujia, Mongolian and Li etc. Zhuang minority accounts for 94.59% of the total population, Han accounting for 5.16%, other minorities accounting for 0.25%, and the total population of minorities accounts for 94.9% of the total population.

13. In respect of preschool education development basis, the gross enrollment rate for three years preschool education is 78% according to the latest research data, and there is only one public kindergarten in Yongning District (Provided by Zhou Ying of Education Bureau, April 15). Therefore, the important task with which the preschool education development of Nanning is faced in the future is how to develop the high-quality and universally beneficial public kindergarten, whose premise is to establish a set of standard and operational kindergarten development program.

2. Developing the Experimental Kindergarten into Training Base of Nanning No. 4 Vocational School and Providing Conditions for Teachers' Pre-service Training and Kindergarten Curriculum Development

14. In 2011 People's Government of GZAR issued Several Opinions of People's Government of GZAR on Currently Promoting Preschool Education Development (Guizhengfa 2011 No.20) and The Action Plan

of GZAR Preschool Education for Three Years (2011-2013), clearly indicating to 'continue developing the secondary kindergarten training school'. At present, the secondary kindergarten training school is still the main force of educating kindergarten teachers, but the main issue of kindergarten teachers' pre-service training is that the contents of pre-service training are disconnected with teaching practice, especially the lack of practical curriculum, resulting in the 'inherent shortage' of kindergarten teachers' practical skills. Therefore, it is necessary to develop the experimental kindergarten into the training base of teachers' pre-service. Currently Nanning No. 4 Vocational School is the only school which has the qualification of preschool education enrollment among the similar schools in Nanning and its enrollment scale is the biggest among the schools which recruit the preschool education major in GZAR. So improving its capacity of educating kindergarten teachers will make great contribution to the development of kindergarten teachers in the city and GZAR. However, for the preschool education major of N4VS, many prominent problems in curriculum development and implementation require immediate solutions.

15. The main problems in curriculum development include: (i) some important professional curricula have not been established, such as the Direction for Kindergarten Games, Kindergarten Education Evaluation, the Direction for Kindergarten Social Activities and the Direction for Kindergarten Scientific Activities etc; (ii) skills training (the proportion of skill program, like sight-singing, dancing and piano, is too high) is over emphasized and the development of professional competence has not been paid too attention. The structure of existing professional curriculum is out-of-balance. The directions for the activities of five major fields of kindergarten were incorporated into one curriculum; whose total period is 102 hours, less than that of one skill curriculum (see the table below).

Professional core courses	**Hours**	**Percent**
Health care of young children	72	7.4%
Psychology of young children	72	7.4%
Preschool education	68	7.0%
Preschool activities design and practice	102	10.4%
Preschool dance	140	14.3%
Preschool vocal music	70	7.2%
Preschool piano	140	14.3%
Preschool spoken language	70	7.2%
Preschool art	140	14.3%
Preschool music theory and sight-singing	104	10.6%
Total	**978**	**100.0%**

16. The main problems in curriculum implementation include:

    (i) the personnel training mode of 'Campus Collaboration and Integration of Learning and Doing' has not been fully adopted:

17. Because of classroom-based lecture as the basic mode of teaching, shortage of practical training, poor training conditions within school and lack of equipment (see the pictures below). The seven existing practical training bases are cooperation agencies, which are outside of and far away from the school, there being not exclusive experimental kindergarten and causing much inconvenience to the students who are trained.

Playground

Students were having lessons of kindergarten sport activity

Classroom

Drawing lessons in classroom for shortage of drawing room

(ii) The professional competence of the teaching staff must be improved.

18. Currently there are 114 professional teachers of preschool education in the school, but there is only one teacher who graduated from the preschool education major, and the school is without anyone who has worked in a kindergarten. The teachers with teaching competence and practical skills account for 30%, which is a low percentage, indicating that the teachers have some teaching competence but they are not familiar with the preschool education, being short of professional competence and vocational experiences of preschool education. The teachers must improve the teaching competence and accumulate the vocational experiences of preschool education. However, the school has not acquired enough training resources of preschool education. In 2012 10 teachers attended the training, among which 3 attended the training of national level. There is not enough special design for the training of preschool education in the school training. Currently the preschool education of N4VS lacks industry influence in Nanning and GZAR, with low social service capability.

19. Therefore, based on the current development requirement of preschool education, the favorable opportunity of national secondary vocational education reform and development, and the school-running reality and social demands, developing a affiliated experimental kindergarten of N4VS as the practical training base could not only promote the professional curriculum and teaching reform of preschool education of

N4VS, but also improve the quality and professional cultivation quality of preschool education. It could also provide support for the curriculum development and reform of experimental kindergarten with the help of teaching and scientific research force of N4VS. The experiences learned from the pilot could provide reference for the exploration of other areas.

3. Forming a Whole Set of Complete Curriculum System and Implementation Concept of Experimental Kindergarten

20. Considering that the kindergarten current curriculum development and implementation is more like that of primary school, it needs to establish a curriculum system and teaching concept with development objectives the same as those of the experimental kindergarten. It must aim at the issues in the current curriculum implementation, in order that the quality of experimental kindergarten is ensured and its exemplary role is played.

21. Firstly, the curriculum system and implementation concept should comply with the law of children development and the relevant national policy. At present, a series of national documents which direct the kindergarten curriculum development have been issued, such as *Guidance Outline for Kindergarten Education (tentative)* and *Guidance on Learning and Development of Children Aged from 3 to 6 Years Old* etc, all of which indicated that the kindergarten curriculum development should comply with the objective law of somatopsychic development of children and meanwhile made a relatively clear explanation on the principles to be followed and the objectives to be achieved during the development and implementation of kindergarten curriculum. Therefore, the core ideas of these policy documents must be implemented in the curriculum system development of experimental kindergarten, and how to better meet the requirements of children's somatopsychic development will be explored in the operation of the curriculum implementation.

22. Secondly, the national culture feature should be reflected in the curriculum system and contents. Currently the kindergarten curriculum development of China should advocate the development of kindergarten-based curriculum, considering that children's development is mainly affected by the surrounding environment, and the composition system and curriculum contents, which consist of the cultural factors loved by the local ethnic groups and local people, are more easily to be understood and absorbed by children. So the composition and curriculum contents of experimental kindergarten system should absorb the related factors from the culture of local ethnic group. It is an important basis of developing the curriculum with ethnic and cultural identity for experimental kindergarten that Zhuang nationality is the majority of Yongning District, which consists of other ethnic groups.

23. Thirdly, the contents of curriculum system should be reasonable and the standards should be clear, easy to be operated and popularized. In light of the particular learning and development law of children, the kindergarten education stresses the self-determined construction of

knowledge for children. Therefore, in the development of experimental kindergarten curriculum, the contents should fit the objective law and characteristic of children's somatopsychic development, moreover, the evaluation standards of relevant curriculum should be clear and definite, easy to be operated and self-evaluated by the teachers and administration of kindergarten, and convenient to popularize the effective curriculum implementation program within the area.

III. NATIONAL AND INTERNATIONAL BEST PRACTICES

24. Learning the establishment and development experiences of domestic and foreign kindergartens could provide an important reference for the development of experimental kindergarten in this project.

A. KINDERGARTEN DEVELOPMENT

1. The Domestic Relevant Study of the Standard and Program of Demonstration Kindergarten Development

25. China always attaches importance to the standard development of kindergartens. The central and local governments proposed the corresponding standards and requests for the general kindergarten development and requested the local governments to strengthen the 'development of demonstration kindergarten' in the policy documents, like *Guidance on the Children's Education Reform and Development*. With this background, various governments of all levels and the educational circles conducted a series of positive explorations concerning the standards and program of demonstration kindergarten development. At the national level, China issued the policy documents, such as *Ration of Floor Area of Urban Kindergarten* (tentative), *Regulations of Kindergarten Administration*, *Working Regulations of Kindergarten*, *Guidance Outline of Kindergarten Education* (tentative), *and Provision Standard of Kindergarten Teaching Staff* (tentative), raising a series of demands for kindergartens' facility conditions, staff placement and curriculum development etc.

26. At the local level, the local governments, such as Beijing, Shanghai, Jiangsu, Fujian and Guangxi, all issued the development standard of demonstration kindergarten of their own, concerning the national relevant documents. For example, Jiangsu Province issued *Provincial Evaluation and Implementation Program of High-quality Kindergarten* and *Evaluation Standards*. *Evaluation Standards* involves five first-class indicators, like 'ensuring education team', 'school-running conditions', 'security and sanitation', 'level of ensuring education', and 'management performance', and 35 second-class indicators; *Evaluation and Acceptance Standards of Demonstration Kindergartens* issued by GZAR includes 4 first-class indicators: 'kindergarten facility', 'teaching staff', 'kindergarten administration' and 'level of ensuring education', and 11 second-class indicators. In general, although there are some differences in the specific contents of development standards of demonstration kindergartens for different province, all of them involve four aspects, including facility development, quality of teaching staff, teaching quality and management level. However, there are some variations in the weight allocations of various indicators for different areas. As for a more reasonable weight allocation mode, some researcher found that the identification difference between the evaluation department of government and educational experts is focused on the individual indicators. So it is suggested to adjust the relevant indicator system according to the local education development in a timely manner and to follow the principle of combing the qualitative evaluation with quantitative evaluation, so as to accurately provide reference for the improvement of kindergarten teaching quality.

2. The Foreign Study on the Assessment Standard of Early Education Institution

27. In 1984 National Association of Education for Young Children (NAEYC) issued a high-quality authentication and evaluation standard for kindergarten, whose purpose was to help the preschool educators improve the preschool education quality and to identify which are high-quality preschool education institutions. This standard included two parts: the first was the policy and process of evaluation and the second was the evaluation standard and specific evaluation indicators of high-quality preschool institutions. The evaluation standard included 10 aspects: (i) interaction between teachers and students; (ii) curriculum; (iii) interaction between parents and teachers; (iv) qualification and improvement of teachers; (v) administration; (vi) provision of teachers; (vii) physical environment; (viii) health and security; (ix) nutrition and food service; (x) evaluation. Every aspect includes evaluation purpose, theory basis and specific evaluation indicator. From these standards set by NAEYC, we can tell that the procedural indicators are prioritized. The variables which are directly linked with children's daily life experiences are inspected, like interaction between teachers and kids, and curricula etc. Besides, preschool institutions, specialists and community were involved more in setting the standards, and different from the relevant standards of China which emphasize the demonstration effect, they emphasize the expansibility of kindergartens.

B. KINDERGARTEN CURRICULUM DEVELOPMENT

1. The Experiences of Curriculum Development of Domestic Kindergartens

28. Currently the curriculum development of domestic kindergartens has many excellent experiences. Some kindergartens with a long history have explored the kindergarten-based curriculum with local and its own features gradually during its development, and have good effects during the practice. A study on the curriculum development programs of 10 kindergartens in Shanghai found that in the development of kindergarten curriculum program, the democratic participation of the teachers and the forming of curriculum concept should be prioritized, keep the value orientation of the curriculum in the right direction according to the relevant national regulations, emphasizing the clearness and operation of the curriculum program and the characteristic of choosing the curriculum contents. Taking the Gulou Kindergarten of Nanjing for example, during the curriculum development, the curriculum development concept was combined with the modern educational theories, such as 'living education' theory of Mr. Chen Heqin who is a famous educator of China, the project approach theory, the genetic epistemology of Mr. Pi Yajie, and the theory of zone of proximal development of Vygotsky; the curriculum development adopts the unit teaching mode, the 'society' being as the center, to radiate other fields, and fully incorporating the five major fields proposed in the Guidance Outline of Kindergarten Education into the unit teaching.

29. At the specific teaching level, the discovering teaching method was used, emphasizing the practice of active exploration, communication and cooperation, and experience transferring of children. From the above we can tell that the general thinking of curriculum development of domestic kindergarten is to comply the relevant national policy of curriculum development when choosing the curriculum value, emphasize popularity, understanding and operation of curriculum implementation at the specific implementation level, stressing to meet the comprehensive development requirement of children and the curriculum characteristic when choosing the contents.

2. The Curriculum Development Experiences of Foreign Kindergartens

30. Most of the curriculum development of foreign kindergartens has the curriculum development standards or programs with national direction. There are some differences in the contents of these standards or programs, but all of them reflect the latest understanding and recognition of the learning laws of kids. For example, in 2008, Britain issued *Implementation Outline of Framework in Basic Period* for the children aged from 0 to 5 years old, among which the kindergarten curriculum was divided into 6 fields, including personal, social and emotional development; communication, language and literacy ; problem solving, reasoning and numeracy ; knowledge and understanding of the world; physical development ; and creative development. The curriculum contents stemming from the children's lives and paying attention to the children's lives are prioritized in the British curriculum program of early education. The full usage of modern technology is emphasized in the curriculum implementation mode and the curriculum evaluation could reflect the growth track of children in a fair and objective manner. In general, most of the foreign kindergartens proposed a series of unified curriculum standards for the curriculum development with the leading of government. Moreover, the curriculum concept emphasizes the children-orientation, paying attention to the curriculum participation of kindergarten teachers, the communication between parents and community in the curriculum implementation, extensively absorbing the national culture to develop the local curriculum, and combining the curriculum implementation with the improvement of curriculum practical skills of teachers.

C. THE QUALITY DEVELOPMENT OF KINDERGARTEN TEACHING STAFF

1. The Quality Development Experiences of Teaching Staff of Domestic Kindergartens

31. China has the extensive experiences of the studies and practices on the quality development of kindergarten teaching staff. One of the important mode is to make the access standard of kindergarten teachers as an important factor of ensuring the teaching staff quality. In many national policy documents, the corresponding requirements of access standards of kindergarten teachers were proposed, such as Teachers' Law and Kindergarten Working Regulation, but these documents just raised the general demands for the education background and qualification of preschool teachers.

32. In 2011 China formally issued Profession Standards for Kindergarten Teachers, stipulating 'children-orientation, teachers' ethics first, competence-orientation and lifelong learning' as the basic concept of setting standards, identifying 3 primary dimensions, which were 'profession concept and teachers' ethics', 'professional knowledge', and 'professional competence'. There were 14 secondary dimensions, which were 'vocational understanding and cognition', 'attitude and behavior to children', 'attitude and action of children care and education', 'individual accomplishment and action', 'children development knowledge', 'knowledge of children's care and education', 'general knowledge', 'establishment and use of environment', 'organization and care of daily life', 'support and lead of games', 'planning and implementation of educational activities', 'encouragement and evaluation', 'communication and cooperation', and 'introspection and development'.

33. The formulation and issuing of Profession Standards for Kindergarten Teachers does not only provide an important direction for the pre-service and post-job training of domestic kindergarten teachers, but also provide the reference for the assessment of kindergarten teachers' quality and supplying the relevant professional support for the teachers.

2. The Quality Development Experiences of Teaching Staff of Foreign Kindergartens

34. At present the international community is showing the obvious tendency of 'standardization' in ensuring the teaching staff quality of kindergartens, all launching the profession standards of kindergarten teachers through the leading of government and participation of professional staff. For example, NAEYC has begun setting the vocational preparatory standards of preschool education since 1980, and published three sets of preschool vocational preparatory standards from 2001 and 2003. These three sets of standards fitted the education and training requirements for preschool educational staff of different levels and different fields.

35. The standard included 5 core aspects: (i) promoting the learning and development of children; (ii) building the relationships of family and community; (iii) observing and assessing the supportive measures for the children and their families, and establishing related files; (iv) relevant knowledge and competence of conducting the teaching and learning activities; (v) becoming a professional staff. Besides, the general knowledge standards which the preschool teachers should have were proposed: (i) preparatory standards for the language and literacy knowledge; (ii) preparatory standards for artistic knowledge; (iii) preparatory standards for mathematics knowledge; (iv) preparatory standards for exercise and physical education; (v) preparatory standards for scientific knowledge; (vi) preparatory standards for social knowledge.

36. These standards do not only have a wide application scope, but also make requirements for the teachers' knowledge, competence and vocational ethics, incorporating some contemporary and mainstream

educational concepts. In 2008 the British Government issued *Guidance to the Standards for the Award of Early Years Professional Status* for the children aged from 0 to 5 years old, proposing 6 criterion for the professional staff of early education, including: (i) possessing corresponding professional knowledge; (ii) conducting effective practices of educational activities; (iii) keeping a good relationship with children; (iv) effectively communicating and cooperating with the families and minders of children; (v) capable of team work; (vi) competence of teacher-based professional development. From the relevant experiences of international community, it does not only need the professional knowledge and skills and vocational ethics which are directly linked with teaching and concerned with personal professional accomplishment, but also possess the competence of teacher-based professional development, such as the team work competence, to become a qualified and competent kindergarten teacher.

IV JUSTIFICATION/RATIONALE

37. It is a long way to go for the improvement of professional competency of N4VS preschool education, and it is urgent to establish an experimental kindergarten with high quality. The specific reasons are as follows:

A. THE DEVELOPMENT OF AN EXPERIMENTAL KINDERGARTEN WILL MAKE A GREAT CONTRIBUTION TO THE SUPPLEMENT AND GENERAL IMPROVEMENT OF PRESCHOOL TEACHING STAFF IN NANNING AND GZAR.

38. As mentioned above, the preschool education of Nanning and GZAR is faced with two issues, shortage and low quality of preschool teachers. The preschool teachers from Yongning Campus of N4VS, which has the biggest enrollment scale of preschool education in GZAR and which has the only qualification of enrolling the students of preschool education major among the similar schools in Nanning, will mainly serve the preschool education of Nanning and GZAR. If the quality of staff cultivation can be greatly improved with the scale expansion of preschool education major of this school, it will make important contribution to the general improvement of preschool teaching staff in Nanning and GZAR.

B. THE DEVELOPMENT OF EXPERIMENTAL KINDERGARTEN WILL MAKE GREAT CONTRIBUTION TO THE COMPETENCE OF PRESCHOOL EDUCATION MAJOR OF N4VS.

39. Firstly, the development of experimental kindergarten will push forward the reform of curriculum and staff cultivation mode of N4VS. The practical training is the important part of curriculum teaching and learning of preschool education of vocational school.

40. Whether the training environment is the same as the reality is the key to cultivate the staffs which are needed by the society. Along with the social development and the higher level of education people receive, the society is raising a higher demand for the preschool teachers. The students with some theoretical basis and practical competence are more competitive in the market. However, as there is not the affiliated

kindergarten and the current cooperation training agency is far away from the school, resulting in that there is not a convenient training unit for students, and many curricula which need to be conducted in the practical environment can only be conducted in the school with scenario teaching method. This is far from the real practical environment, not enabling the students to fully exercise the capacity of operation and dealing with the actual problems. The development of an experimental kindergarten will help push forward the reform of curriculum teaching method, making the staff cultivation mode of campus cooperation possible.

41. Secondly, the development of training base will be favorable to the improvement of general and professional qualification of preschool education teachers of N4VS. The main difficulty of improving the professional competency of preschool education of N4VS is that the general profession of the current teaching staff is not strong. The teaching staff with professional background and working experiences of preschool education is in urgent need. When most of the teachers were transferred from the primary school education to the preschool education, they were systematically trained as a whole, and their professional knowledge and skills are insufficient, not having a deep understanding of preschool education. When researching we found that some teachers were not even sure of which core curriculum of preschool education should be established, and confused about which knowledge and core capacity to teach the students, hoping anxiously to observe and practice more in the kindergarten, and improving the professional qualification and competency of their own. The completed experimental kindergarten is not only the training base of the students, but also the training and scientific research base of preschool education teachers of N4VS, providing support for their professional development.

C. THE DEVELOPMENT OF EXPERIMENTAL KINDERGARTEN WILL MAKE A GREAT CONTRIBUTION TO THE DIFFICULT ENROLLMENT AND PROMOTION OF PRESCHOOL EDUCATION FAIRNESS OF THE SOCIETY

42. Firstly, the experimental kindergarten will be developed into a high-quality kindergarten with first-rate kindergarten-running conditions and education quality, favorable to increase the local high-quality resources of preschool education and solve the difficult enrollment. The research found that there are not many public kindergartens in Nanning, the private ones being weak, with too many children in the urban kindergartens and shortage of kindergartens in rural areas. The number of kindergartens is seriously insufficient with the outstanding problems of difficult enrollment and expensive tuition; as the location of experimental kindergarten, Pumiao Town of Yongning District has the annual enrollment requirement of 1500 to 1700 children, but there is only one public kindergarten in Pumiao Town, which could only accept about 200 children, far below satisfying the actual enrollment requirement of children. Most of them can only choose the private kindergartens with cheap tuition, low education quality and security problems, to be educated. The completed experimental kindergarten plans to enroll 15 classes, accepting about 450 children if there are 30 children in each class on average. This could help meet the urgent

demands of the local people who hope that their children can enter the good kindergarten.

43. Secondly, ensuring the fairness of rural preschool education has been prioritized by all levels of governments of China in recent years. The majority of Pumiao Town's population is rural, and there are very few high-quality resources of preschool education, resulting in the few chances of receiving the good preschool education fairly for the rural children. The completed kindergarten will belong to the utility service, managed as the public kindergarten and charged as the standards of public kindergartens, providing the non-profitable and high-quality preschool education service for the local people. This is favorable to promote the fairness of rural preschool education.

44. Lastly, the development of experimental kindergarten will help promote the fairness of preschool education of minorities. As mentioned above, many ethnic groups live together in Yongning District, the majority of population being the minorities. The completed experimental kindergarten in Yongning District will increase the high-quality preschool education resources, enabling more children of minorities to have chances to enter good kindergarten to be educated.

45. 5.4 The development of experimental kindergarten provides an important reference for the kindergarten development of other areas and training bases development of preschool education of other similar schools.

46. With the support of ADB Loan and NMG, the experimental kindergarten will be developed into a high-quality kindergarten with good conditions, professional teaching staff, children's love, parents' approval and the industry acceptation, based on following the relevant national regulations and referring to the domestic and foreign experiences of high-quality kindergarten development. Especially, the kindergarten will explore to integrate the traditional culture of GZAR into kindergarten curricula, developing the kindergarten-based curricula of traditional and cultural education. These experiences will provide valuable enlightenment and reference for other areas, other kindergartens and other cultivating schools of preschool teachers, with important popularity values.

V. RECOMMENDATIONS FOR THE PILOT KINDERGARTEN

A. THE VISION OF EXPERIMENTAL KINDERGARTEN DEVELOPMENT

1. The general objective of experimental kindergarten development

47. The pilot kindergarten would be recognized by parents, communities, teachers, educators and academic entities as a leader in the provision of kindergarten education and research at municipal, provincial and national level.

2. The function of experimental kindergarten

48. N4VS hopes experimental kindergarten to play the six roles below:

(i) A training base for both new teachers in the Number 4 School and for teachers already in-service but in need of upgrading or re-certifying. The Model Kindergarten will serve as a training base to improve teachers' capacity and develop their professional skills. This would link closely to the Teacher Training Model being designed.

(ii) A scientific research base to carry out action research in different pedagogical areas;

(iii) A base for pilot curriculum design, teaching training reform, etc,;

(iv) An educational institution to support children develop physically and mentally;

(v) An service institution to offer good quality service to local families;

(vi) A showcase, which can provide best practice and disseminate examples of best practice.

B. The thinking and planning of experimental kindergarten development

1. Establishing scientific and advanced kindergarten-running concept

49. The main function of kindergarten is to educate the children, providing both the best support for children's development and the best place for the professional development of kindergarten teachers. Based on the current and popular modern educational concept, the relevant national education policy and the fully playing of main function of kindergarten, the running concepts of experimental kindergarten mainly include the following aspects:

People oriented

50. From the perspective of promoting children's development, 'people oriented' means to respect the objective law of children's physical and mental development and the children's subjectivity, which is the fundamental premises of ensuring the teaching activities quality of kindergarten, and radically, various teaching activities and organization

of elements of kindergarten should serve the children's development; from the perspective of teachers' development, 'people oriented' means to treat the students as ongoing and changing individuals, the development of teachers needing the humanistic management support of kindergartens.

Inclusiveness and Opening

51. Kindergarten is the aggregation of all kinds of educational elements, within which the children and teachers are ongoing and changing individual with independent personality, and in the meantime, the kindergarten is continuously affected by various external regulations and cultural environment. The kindergarten needs to approach all kinds of changes which are inside and outside of the kindergarten with an open and inclusive attitude, integrating the educational elements of changes continuously and using them for the kindergarten itself, thus ensuring the advancement and scientific aspects of kindergarten-operations.

Mutual development of teaching and learning

52. The current mainstream theory of children education generally emphasizes that the children should be able to establish the personal learning experiences of their own actively, which actually increases the demand for the teaching wisdom and qualifications of teachers. The teachers are not only the lecturers but also the supporters of children's learning, realizing the mutual development of children and teacher in the deep interaction and communication with children. Meanwhile, the mutual development is not only reflected in the daily scenes of teaching activities but also in the design and revision of teaching introspection and curriculum program, which needs the kindergarten to provide safeguard in the relevant teaching and management regulations.

2. Providing the facility and equipment of high standard

53. Various facilities and physical environment of kindergarten are the basis of children education, forming the important part of 'invisible curricula' of kindergarten and playing an important role for the healthy physical and mental development of children. Currently China has a series of clear executing standards concerning the environmental development of kindergarten from the central government to the local governments. In view of main function of experimental kindergarten, the development standards of experimental kindergarten infrastructure should be higher than those of general kindergartens in the country and GZAR, at least the same as the development standards of demonstration kindergartens in GZAR.

54. Specifically, the standards of kindergarten construction should be as follows:

    (i) Independent, safe, with sufficient sunlight and fresh air, away from the pollution source.

(ii) Clean, green, beautiful and child oriented; the area of green space per child not less than 2m2.

(iii) The outdoor playground at least 4m2 per child (with the lawn), with sandpit, swimming pool, 30-meter straight runway, animal-raising corner and planting area.

(iv) For 9 classes or above, the occupation of land not less than 4200m2; for 12 ones or above not less than 5500m2.

(v) Usage area of activity room for every class per child not less than 1.5～2m2(with 90m^2 integration of sleeping room); Every class has a wash room (at least 6 taps and 4 toilet holes).

(vi) With the special room of large area, enabling the children's autonomic activities: multi-functional activities room, scientific research exploration activities room, library, reading room and music(dancing) room etc., also with corresponding equipment and materials.

(vii) With reception office, health room (including isolation room), a principal's office, teachers' offices, reception (meeting) room, material room and storage room etc.

(viii) Reasonable proportion and layout of various fields; no hazardous articles and items on the field, favorable for various practical activities of children's. High usage rate and serviceability rate of various fields, with good educational benefits.

55. The standards of facilities and equipment should be as follows. Every kindergarten should have:

(i) Tables, chairs and sleeping beds with the corresponding heights for children; with the open-ended toy cupboards, books shelves, sound recorders, TVs, projectors and pianos etc.

(ii) Good equipment of lighting, ventilation, cold-proof and cooling, with fire-fighting equipment in accordance with the fire-fighting standards.

(iii) Large toy and sports apparatuses which meet the activity requirements of children. The number of outdoor large toys not less than that of classes (the number is converted according to the function). Reasonable layout, safe, clean and high usage rate.

(iv) Fields or facilities which ensure the continuation of children's activities when raining. 1m2 per child.

(v) A variety of teaching and playing tools with sufficient quantity (at 70 kinds), safe and clean; high usage rate; some original and practical homemade toys (at least 30 kinds).

(vi) At least 10 children's books per child and one set of children's books which have been reviewed by the Textbooks Review Committee for Primary and Middle Schools of GAZR per child. A variety of children's books with healthy contents, suitable for the age characteristic of children and the requirements of the time. ◦

(vii) At least 100 kinds of books of educational theory and teaching reference. Updating at 10 kinds every year; prescribing at least 5 kinds of provincial preschool education magazines, or above level.

(viii) Multi-media classroom, computer room (connected to the internet) and closed circuit television in accordance with modern teaching requirements. Having various electronic teaching materials which could meet the working requirements of kindergarten's children care: tapes, videotapes, slides and computer software etc., with high usage rate.

(ix) Washing equipment, disinfection cabinet, towel rack, and tea cup rack and insulation barrel in accordance with the sanitation standards. Every dormitory with qualified ultraviolet lamps, two towels and one cup per child.

(x) Medicine cabinet, diagnostic bed, children's sick bed, baromacrometer and eye test equipment, with regular medicine instrument and medicine.

(xi) Reasonable cook facility, separation of raw and cooked, having pantry, decontamination room, clothing room and warehouse etc., and having some processing machinery for staple and non-staple food, raw and cooked not mixed with each other. Sanitary and nontoxic cookers, convenient to be washed and disinfected.

56. There is not a relevant procurement standard in GZAR and the procurement list of teaching and playing tools recommended by the central government is old-fashioned. It is difficult to adapt it to the kindergarten's needs, the specific procurement list of teaching and learning facility equipment can be compared to the procurement list of teaching equipment of demonstration kindergarten in Fujian Province (see appendix 3).

3. Establishing the modern management mode of kindergarten

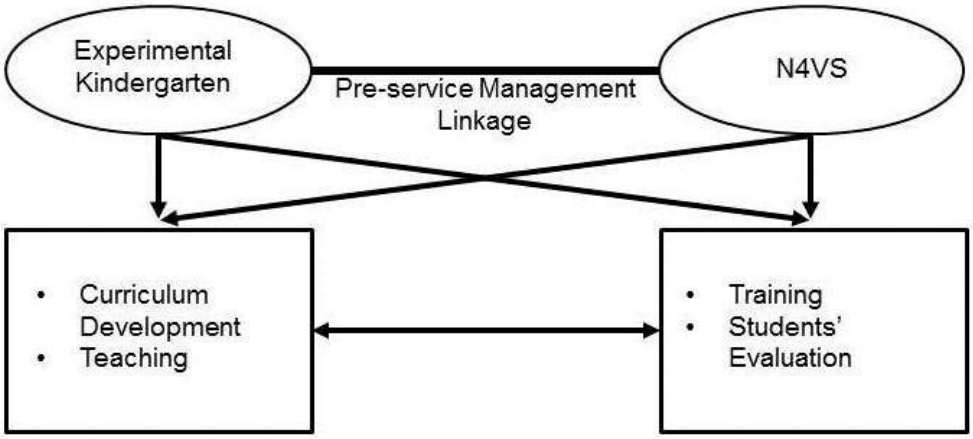
57. Besides playing the role of teaching and educating, another important role of the experimental kindergarten is the N4VS training base of the students of preschool education major. Currently the domestic and foreign study and research concerning the teachers' profession development found that the professional development of teachers needs the integration of pre-service and post-job training, which means that strengthening the relations with teaching relations and the training of the students in the curriculum development and implementation of pre-service, and deeply involving the education institutions to

participate and cooperate in the post-job training of the teachers. Therefore, the development of management mode of experimental kindergarten should focus on the integration of pre-service and post-job training. It is specifically reflected as follows:

The management linkage mode of pre-service for kindergarten teachers in experimental kindergarten and N4VS

58. The management linkage mode of kindergarten teachers' pre-service between the kindergarten and school mainly means that the kindergarten-running objectives and the requirements for the professional qualifications of teachers of the experimental kindergarten should be the same as the objectives of staff cultivation of preschool education major of N4VS. Both parties should cooperate and communicate with each other regarding the training objectives of kindergarten teachers and professional curriculum development in a smooth, timely and regular manner as shown in Figure 1.

Figure1 Management Linkage Kindergarten and N4VS



59. The management of both parties should provide support for the deep cooperation, and the relevant management activities should be linked with each other in terms of ensuring the pertinence and adaptability of professional staff cultivation, achieving the staff cultivation of order oriented. The details include two aspects: Firstly, the experimental kindergarten will not only become the training base of N4VS students, but also the good place for testing the curriculum reform effect of preschool education of N4VS. So the daily management activities concerning the teaching schedule, post division, organization of teaching and scientific research activities and kindergarten curriculum development should be closely linked with the training activities of N4VS students, providing the support and cooperation.

60. Secondly, as the training and graduation unit of preschool education staff, N4VS should adjust according to the feedback of the experimental kindergarten in a timely manner, concerning the management of identification of staff development objectives, the reform of curriculum, teaching mode and students' evaluation, ensuring the professionalism and adaptability of staff development.

The management linkage mode of post-job training for kindergarten teachers in experimental kindergarten and N4VS

61. As for the post training employment of kindergarten teachers, N4VS is the important base of continuous learning by the experimental kindergarten teachers. For N4VS, besides providing the systematic and professional peer-service for the kindergarten teachers, facing with the ongoing and changing requirements of kindergartens for the professional qualification of teachers, it should provide support for posttraining job placement of kindergarten teachers by integrating various appropriate curriculum resources.

62. This needs N4VS to adjust the corresponding management activities, keeping the organization of post-job training activities of teachers alongside the development requirement of the teachers of experimental kindergarten, and the new requirement of experimental kindergarten for professional qualification and skills of teachers being reflected in the design and implementation of post-job training curriculum of N4VS in time. Both parties keep the same page on the management of teachers' post-job training, serving the timely updating and improvement of post-job training curriculum.

The internal management mode of experimental kindergarten

63. The organizational structure of experimental kindergarten's internal management could be constructed referring to Chart 1 above.

4. Establishing the curricula which fit the children's development and traditional culture inheritance

Curriculum objective-promoting the healthy and comprehensive development of children

64. The *Guidance Outline of Kindergarten Education* and *Guidance on the Learning and Developing of Children Aged from 3 to 6 Years Old* must be carried out positively in the development of experimental kindergarten, concerning the specific objectives of five major fields of children development, such as health, language, society, science and art, and arranging various activities in a reasonable and scientific manner, promoting the maximum development of children, in terms of emotion, attitude, capacity, knowledge and skill, based on the development conditions of their own.

The curriculum characteristic-characteristic curriculum of traditional culture of GZAR

65. GZAR is an area with many ethnic groups living together. Peculiar karst landform, brilliant cultural relics and intense traditional customs form the peculiar social and cultural atmosphere of GZAR, among which the various traditional and cultural elements provide rich materials for the development of kindergarten curriculum. The development of experimental kindergarten curriculum should meet the relevant national standards of kindergarten education, on one hand, while fully absorbing the rich traditional and cultural elements of GZAR in the specific development and activities organization of the dominant curricula. The curriculum should be development using the most suitable development mode, transforming all kinds of cultural elements into various curriculum contents. It should be involved in the teaching activities of each field of kindergarten education while integrating various traditional and cultural elements into the kindergarten environment design and transforming the cultural elements which are easy to be expressed visually and which are liked by the people, in the traditional culture, into the dominant environmental elements of kindergarten, making the environment to play the role of culture edification and educating. The ninth kindergarten of Xiamen City of Fujian Province and the experimental kindergarten of Beijing Normal University have explored to integrate the traditional national culture into the kindergarten curricula in recent years and have accumulated many experiences, which could provide reference for developing the traditional and cultural education curricula in experimental kindergartens (see appendix 4).

Curriculum Development Planning (divided into different phases):

66. **Phase I: implementation phase of kindergarten-oriented curricula (about 3 years).** The domestic mature curriculum should conduct kindergarten-oriented implementation, based on gradually exploring and developing the framework of kindergarten curricula and mature curricula implementation mode. In the meantime, it should collect widely cultural elements which are suitable to be developed into the kindergarten curriculum in GZAR area. It should encourage the experienced teachers of kindergarten to explore the development of traditional and cultural curriculum. The textbooks to be recommended: *Infiltration Curricula of Kindergarten* (Nanjing University Press) and

Children Activities Examples of Local Culture of South Fujian of the ninth kindergarten of Xiamen City (Fujian People's Press).

67. **Phase II: development phase of kindergarten-oriented curricula (about 1 year).** Based on the previous curriculum reference and implementation, the mature curriculum implementation mode and framework should be used, through kindergarten-oriented teaching and cooperation between kindergarten and school, to explore to gradually integrate the traditional culture of GZAR into the development of kindergarten curricula, and constructing the corresponding curriculum evaluation system.

68. **Phase III: the improvement and adjusting phase of kindergarten-oriented curriculum.** The curriculum evaluation system should be used to evaluate the implementation effect of kindergarten-oriented curriculum program. It should be continuously correcting the problems in implementation, improving and adjusting the curriculum program, supplementing new contents, creating the implementation mode and strengthening the characteristic of the program.

The theoretical basis of the curricula

69. The current relevant theory of preschool education generally believes that the physical and mental development of children is a process in which the individual adapts and constructs the experiences with the support of the surrounding environment (e.g. the direction of adults, cultural and social environment), emphasizing the subjectivity and participation of children's development and producing many relevant theories of children's curricula. The development of the experimental kindergarten in this project mainly includes the following theories, based on the current mainstream and related curricula theory:

- 'Life Education Theory' of Tao Xingzhi. The 'Life Education Theory' of Tao Xingzhi is the absorbing and reform of Dewey's educational theory. This theory includes: 'life being education', which is the center of life education theory of Tao Xingzhi, emphasizing that the education must be related to the social life; 'society being school' is the specification of 'life being education. It concerns the relations between school and society, emphasizing that school must be closely linked with the society. Integration of teaching, learning and doing' is the specification of 'life being education' concerning the teaching methods, emphasizing the personal participation and operation of children, helping ensure the effect of teaching and learning. The theory of 'life education' has the important enlightening effect for choosing the kindergarten curriculum contents, developing the curriculum resources, cooperation between family and kindergarten and reform of daily teaching mode.

- Project Approach Theory. The project approach is initiated and extensively used in the teaching practice by Kilpatric in 1918, influenced by the progressive educational thought of Dewey. During the last 20 years, as the Riccione teaching system of Italian was paid attention by the whole world, the thought of project approach stirred more interests. The characteristic of the project approach is that the curriculum theme, the direction, mode and time of the activities

contents stem from the children's thoughts. the teachers encourage the children to actively express or display their thoughts and feelings in the way of speaking, limbs and artistic creation. The teachers also assist the children to plan, execute, assess and revise the study plan based on acutely observing the children's interest, capacity and reaction, which enabling the children to construct the new experiences in the process of observing, exploring, operating and experimenting, eventually gaining the future development.

- **Theory of proximal development zone.** Theory of proximal development zone was initiated by the Russian educator, Vygotsky. He thought that education had the leading and promoting effect for children's development, but two levels of children's development need to be determined: one is the achieved development level; and the other is the potential achieved development level of children. Specifically, although children cannot fulfill the task independently, they can achieve it by imitating with the help of adults, in the collective activity. The distance between these two kinds of levels is 'proximal development zone'. The curriculum development of kindergarten should be based on the proximal development zone of children, establishing the curriculum objective scientifically, adopting the appropriate teaching method and leading the children to be fully developed in the respective proximal development zone.

Curriculum Contents

70. The design and choosing of curriculum contents mainly include two aspects: The first is to choose the existing excellent textbook and program, according to the requests of *Guidance Outline on Kindergarten Education* and *Guidance on Learning and Developing of Children Aged from 3 to 6 Years Old,* as the preliminary and main curriculum contents of the experimental kindergarten. In the process of choosing the existing textbooks and programs, the integration and digestion of existing and various mature textbooks should be prioritized, ensuring the curriculum contents to cover every field of children's development and emphasizing the implementation concept of curriculum program to be the same as the theory of kindergarten curriculum design.

71. The second is to collect and adapt the traditional and cultural element in GZAR and process all kinds of elements using the existing and mature curriculum development mode, according to educational concept and requirement of the relevant national policy of preschool education and based on ensuring the completeness and accurateness of traditional culture elements, integrating the elements which are suitable to be infiltrated in the five major fields of kindergarten education into the corresponding curriculum system, forming the corresponding curriculum evaluation standard and mode.

Curriculum Implementation

72. The curriculum implementation mode mainly adopts the current and regular teaching organization mode in the kindergarten education of China, including collective teaching activities, area activities, life activities and outdoor free activities etc. In order to ensure the

curriculum development to fit the law of children's physical and mental development, it is suggested that daily activities could be arranged as follows:

7:40—8:00	morning check and reception
8:00—9:00	outdoor activity and morning exercise
9:00—9:20	breakfast and washing
9:20—9:50	teaching activities
9:50—10:30	area activities
10:30—11:00	outdoor sports
11:00—12:00	lunches and walking
12:00—14:10	sleeping at noon
14:10—14:25	getting up and eating fruit
14:25—14:40	appreciation activities
14:40—15:30	games
15:30—16:00	snacks and washing
16:00—16:35	outdoor sports
16:35—16:40	prepare to leave school
16:40—17:00	leave school

5. Teaching staff provision

73. The teachers are the executors of the curricula and reasonable provision of teaching staff is the necessary condition of ensuring the smooth implementation of curricula. The kindergarten should provide and allocate staffs according to the national standards of teaching staff provision and qualification of kindergarten staffs. According to *Provision Standards of Kindergarten Teaching Staffs*(tentative) issued by Ministry of Education in 2013, the teaching staffs of kindergarten should include the full-time teacher, children care teacher, sanitation and health staff, administration staff, support staff and handyman. The children's welfare staffs include the full-time teacher and children care teacher.

74. The proportion of teaching staffs and children of the full-time kindergarten should be 1:5~1:7 for the ratio of teaching staff and children, and 1:7~1:9 for the ratio of children welfare staff and children (see the table below).

item	the ratio of teaching staffs and children	the ratio of children welfare staffs and children
Full-time	1：5～1：7	1：7～1：9

75. The size of one class of full-time kindergarten should be 20~25 children for the small-sized class, 25~30 children for the middle-sized

class and 30~35 children for the big-sized class. Every class should have 2 full-time teachers and 1 children care teacher, or 3 full-time teachers (see the table below).

Class	Size	Full-time teacher	Children care teacher
Small-sized（3～4岁）	20～25	2	1
Middle-sized（4～5岁）	25～30	2	1
Big-sized（5～6岁）	30～35	2	1
Mixed-sized	＜ 30	2	1

76. As a high-quality kindergarten which will have some influences in GZAR and in the country in the future, the experimental kindergarten should reach the Grate A standards of evaluation and acceptance for demonstration kindergarten in GZAR regarding the provision of teaching staffs' qualifications:

- *Full-time teachers should at least have an academic background including technical secondary school, at least 50% having an academic background of junior college, have a teachers' qualification certification, and the proportion of teachers' professional skills should be in accordance with the requirement of the function reform department.*

- *The children care staff should at least have the academic background of high school and receive the training of professional skill of children care, hold a work license, intermediate artisan with 40%, being familiar with the requirement of children care, able to manage the children's lives of his/her class, working with the teachers to organize the educational activities.*

- *Doctors should at least have an academic background of health care of junior college, having certification of professional doctor, and the nurses or health care staff should have an academic background in health care at technical secondary school level, with qualification certification and receiving the regular professional training required by the position.*

- *The financial staff should at least have the academic background of finance of junior college and accounting charging certification.*

- *The cook should receive the training of cooking profession, having a work license, at the intermediate artisan level accounting for 40%.*

- *The age structure of teaching staff should be reasonable.*

- *At least 30% of the teachers should be the core senior teachers of town level or above.*

6. Detailed schedule of the project action plan

Indicative Activities	**2013**	**2014**				**2015**				**2016**			
Implementation Period 10/2013~12/ 2016	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.2 Model Kindergarten (Curriculum)													
2.2.1.Establishment of working groups in No. 4 School		x											
2.2.2.Constructing a time table		x											
2.2.3.Contacting Cooperation partners(national and international)	start												
2.2.4.Creating a differentiated working plan			x										
2.2.5 Parallel : Participating Teacher Training – being qualified p.e. for project method			x										
2.2.6 Parallel: Starting a project with students " How to construct a curriculum for Kindergarten on overnmental guidelines"				x	x	x							
2.2.7 Developing "General principles" for preschool education under consideration of governmental guidelines"				x									
2.2.8 Creating programs / activities for the areas of education in sub working groups					x	x							
2.2.9 Negotiating framework and conditions for the pilot kindergarten							x						
2.2.10 Coordinating the program with position in an orientation-table for the whole phase of preschool education (max-. 3 years)								x					
2.2.11 Development of a first draft of the Curriculum of the model kindergarten									x	x			
2.2.11 Feed back from cooperation partners (national and international)										x	x		
2.2.12 Discussion about the draft with the staff of the model kindergarten and with the representation of the parents											x		
2.2.13 Statements to the draft from heads and employers of private and state kindergartens											x		
2.2.14 Finalizing the curriculum for model kindergarten											x	x	
2.2.15 Institutionalization of the Curriculum													x
In the meantime: Looking for /Buying of equipment													

ANNEX

ANNEX 1. Schools recruiting preschool teacher training students in Guangxi(2010-2012 Year)

No.	School	2012			2011			2010		
		undergraduate	Community college	Technical secondary school	undergraduate	Community college	Technical secondary school	undergraduate	Community college	Technical secondary school
1	Guangxi Normal University	48			44			39		
2	Guangxi Normal College	39			80			39		
3	Guangxi National Normal College	83			0			0		
4	Hechi College	81	96		89	127		0	96	
5	Yulin Normal College	100			128			82		
6	Baise College	38	206		41	123		17	83	
7	Wuzhou College	44	72		0	107		0	115	
8	Liuzhou Normal Senior Technical College		217			118			73	
9	Qinzhou College	30	98		0	142		0	42	
10	Hezhou College	33	136		43	205		0	1	
11	Linjiang College of Guangxi Normal University	107			73			0		
12	Shiyuan College of Guagnxi Normal University	169			0			0		
13	Junior College of Children Teaching of Guangxi		1100			932			537	
14	Guangxi Education College		161			0			0	
15	The Affiliated and Secondary Normal School of Junior College of Children Teaching of Guangxi			373			743			212
16	Guangxi Youjiang National and Business School			200						
17	Guangxi Wuzhou Agriculture广School			82						
18	Science and Engineering Vocational School of Guangxi			205						
19	Guangxi National Secondary Technical School			0			0			449
20	Guangxi Wuzhou Business and Trade School			200			178			
21	Guangxi Economy and Trade School			341			0			0
22	Guangxi Qinzhou Business and Trade School			94			0			0
23	N4VS			1274			832			434

No.	School	2012			2011			2010		
		undergraduate	Community college	Technical secondary school	undergraduate	Community college	Technical secondary school	undergraduate	Community college	Technical secondary school
24	The Affiliated Secondary School of Liuzhou Urban Vocational School			36			64			0
25	Liuzhou Secondary Vocational School			160			73			
26	Guilin Xingan Normal School			296			358			280
27	Guilin Finance and Trade Management Cadre Secondary Technical School			35						
28	Wuzhou No.1 Vocational Secondary School			224						
29	Beihai Secondary Vocational School			163			95			0
30	Beibuwan Vocational School			176			0			0
31	Qinzhou Hefu Normal School			710			664			341
32	The Affiliated Secondary Vocational School of Guigang Vocational College			249						
33	Guigang Vocational Education Center			0			38			92
34	Guangxi Yulin Electronic Industry School			193			151			126
35	Yulin No.1 Vocational Secondary School			864			829			135
36	Baise Vocational School			0			418			0
37	Baise Finance and Economy Vocational School			40			0			0
38	Hechi Vocational Education Center School			165			0			0
39	Hechi Bama National Normal School			322			575			227
40	Chongzuo Vocational School			37			0			0

Annex 2 Fujian model kindergarten teaching and learning materials directory

Order	Necessity	Specifications	Unit	Requirements		With reference
				Below 9 classes	9 or more classes (including 9)	
A. For large muscle movement						
1	Jungle gym	The maximum height is 2 meters.		1	3	Climbing wall, ladder
2	Nets for climbing	1.6 meters high, inclined wire type		1	2	
3	Slides	1.8 meters or 2 meters, ground angle from 34 ° to 35 °, the buffer part 0.25 meters high, 0.45 meters long		2	3	Multi-functional large combination of outdoor play toys
4	Swing boat or swing bridge	2X1.7X1.6 m		1	2	
5	Swing or seesaw	1.9 meters high (or intermediate pillar 0.4-0.5 meters high,2-2.5 meters long, Handle located 0.3 m from both ends, buffer 0.2 meters high.		3	5	Tire swing
6	Balance Beam	2 meters long, 0.15-0.2 meters wide.		1 per grade		Single-plank bridge; balance board wooden pillars
7	Balance bicycle			8	12	Shaking cars; bumper cars; tricycle
8	Hoops or arches	0.5-0.6 meters in diameter		4	8	The small tunnel drilled climb appliances
9	Ball	0.1 to 0.2 m in diameter		40 per class		Balls, table tennis, pump,etc.
10	Throwing target			4 per class		Suction ball
11	Trampoline			1		Trampoline
12	Croissants ball			10 per grade		Bouncing small animals
13	Rope	Short		1 per senoor class		
B. For small muscle movement						
14 15	Available for the junior class children scoop \ clip \ string \ spin \ screw \ buckle \ cut and other types of operating learning tools		Set	6 per class		Hey dolls; clip beads; beaded; the spin nut; fun button-down; cut fruit toys
16	Available for the middle class children fold \ build \ pinch \ plug \ embedded \ cut and other types of operating learning tools		Set	6 per class		paper folding; building blocks; pinch sub-folder beads; insert plastic construct; mosaic toys; practical matter

Order	Necessity	Specifications	Unit	Requirements		With reference
				Below 9 classes	9 or more classes (including 9)	
						fruit
17 18 19	Available for senior class children tie\ sieve \ plane \ knock \ sweep \ rub \ turn and other types of operating learning tools		Set	6 per class		Sieve rice; planing fruits; woodworking toys; sweep beans; rub the leaves; turned rope
C. For comprehensive activity						
20	Toys for playing with sands	Replace the sand on a regular basis, to keep the sandland Sanitary	Set	3 per class		Sand table, hourglass, rakes, spades, shovels, sticks, Sand Mold
21	Toys for play with water	Provide children with suitable waterproof sleeves,aprons,rubber boots	Set	3 per class		Water tankers, basin, kettle, water pumps, etc.
22	The supporting wall chart,headwear,learning package and other teaching and learning materials.	Wall charts,audio tapes,compact discs,headdress,learning package related to province textbooks		2 per capita(learning package)		Select other aids,learning tools according to actual needs
D. For games						
23	Toys and auxiliary materials needed to support game theme of the various age classes, available for children to carry out role-playing games, performances, games, construct games and other games.		Set	Adequate for children play with		Toys; games rack (cabinet); various types of building blocks, plastic plug; railings; common characters, animals props, costumes, etc.
E. For scientific activity						
24	Magnetic Toys		Set	1-2 per class		
25	Springs toys		Set	1-2 per class		
26	Magnifier			Sufficient for a class		
27	Telescope			1 per class		Periscope
28	Triangular prism			Sufficient for a class		
29	Distorting mirror			4		
30	Microscope			5	10	

Order	Necessity	Specifications	Unit	Requirements		With reference
				Below 9 classes	9 or more classes (including 9)	
31	Thermometer			1 per class		
32	Terrestrial globe			1 per class		
33	Specimen	Birds, beasts, insects, etc.		1-2 of different types		
34	Model	Human body, teeth, car		A certain number		
35	Measuring glass			6		Iodine, baking soda, etc.
36	Balance			6 per class in average		Tray balance
37	Tangram		Set	Sufficient for a class		Quartet platter; Three Tangram, five Tangram, seven Tangram
38	Nested toys	Nesting dolls, nesting towers, nesting container, nesting bowls	Set	6	12	Sets of toys sets
39	Children'cards		Set	2~3 per middle and senior class		
40	Children's chess		Set	3~6 per middle and senior class		
41	Maze		Box	6 per class		
42	Clock face	Available for teachers, child care		1 per class		
				Sufficient for a class		
F. For music activities						
43	Piano			1 per class		Keyboard, organ; common instrument
44	Accordion			1	3	
45	Percussion instruments	And with tambourine \ string of bells \ castanets can be in Junior classes		6 per class		Touch bell
		Wooden fish \ triangle can be equipped in the Middle classes		6 per class		Double-click tube
		Sand ball \ drum can be equipped in the Senior classes		6 per class		Gongs and cymbals \ drum \ drums
G. For Art activities						
46	Water color brush		Box	For 1~2 class(es)		Row pen \ brush
47	Oil pastels		Box	1 per capita		Crayons
48	Palette			Sufficient for 2~4 classes		
49	Pigments		Set	1 per class		Prepared Chinese ink

Order	Necessity	Specifications	Unit	Requirements		With reference
				Below 9 classes	9 or more classes (including 9)	
50	Easel or drawing board			Sufficient for a class	Sufficient for two classes	
51	Art mud	River mud, plasticine, flour mud	Box	optionally set per capita		
52	Mason board			1 per capita		
53	Flat head scissors			1 per capita		Lace scissors
H. Audio-visual equipment						
54	Television			1 per class		DVD players
55	Multifunctional audio	Available for use by the whole kindergarten large-scale events	Set	1		
56	Projector	Characteristics of the age classes and meet needs in the field teaching		1 per grade		
57	Multifunction recorder			1 per class		
58	Tapes, CD-ROM		Box	30	50	
59	Digital camera					
60	Duplicator			1 shared by the kindergarten		Scanner
61	Printer			1 shared by the kindergarten		
62	Laminator			1 shared by the kindergarten		
63	Camera			1 shared by the kindergarten		
I. Multimedia device						
64	Multimedia classroom	Supporting hardware and software, and related information management system		1 shared by the kindergarten		
65	Teaching courseware	software related to various age classes and all areas of education	Set	Sufficient for 2~4 classes		
66	Computer	For teachers		At least half of the total teachers		Website \ Web
		For children		1~2 per class		

Annex 3. Local Culture Education Curriculum

Xiamen No.9 kindergarten, Xiamen, Fujian, PRC

Folk culture is the wisdom of working people in China, is jointly owned material wealth and spiritual wealth of our nation. Today. More and more early childhood educators recognize the value of folk culture as curriculum resources, and pick out the excellent part, after appropriate processing, transformation, into the kindergarten curriculum to help children gain a variety of useful experience, promote the harmonious development. In this regard, Xiamen No.9 kindergarten provides us with valuable experience.

Located in Xiamen City, Fujian Province, Xiamen No.9 kindergarten, as a model kindergarten in Fujian Province, a provincial curriculum reform base, a national school-based teaching and study system building base, a Chinese characteristical education project school, has played a model and leading role. It has two campuses, with 16 classes together, more than 600 retained children, and 81 staff. Since 2001, No.9 kindergarten started exploration of drawing Minnan(Taiwanese) culture into early childhood education, and gradually established their school-based curriculum featured with Minnan culture. During more than ten years practice and study, children, teachers, leadership, parents all benefit a lot, and their contribution is widely acknowledged.

Architectural appearance of No.9

Retained honors

Sub-campus of No.9

Educational ideal:

Teach children learn to be a true man and to seek the truth

Folk culture education curriculum:

Minnan culture is all-inclusive in content, so not all is suitable for young children. After careful screening, No.9 kindergarten finally establish relatively complete and appropriate folk culture education curriculum, including the visible and hidden.

The visible curriculum are as follows:

- **Language**: Minnan folk songs, nursery rhymes, folk legends, stories, Storyteller, tapcuiko, proverbs, part Allegorical Sayings;
- **Handcraft**: local folk flour mud, paper cutting, paintings, stone carving, shadow carving, lacquer line carving, construction, etc.;

Lacquer line carving works made by children

Clay Minnan architecture made by children

- **Performing arts**: local folk music, songs, percussion, dance, opera, Gaojia drama, Minnan puppet show, architectural arts;

Children are performing lion dance

Children are performing Minnan opera

- **Games and recreation**: local folk toys, local folk games;

Children are playing with puppet show

Role playing games(local snack shop)

Minnan popular game on Mid-autumn day

Traditional toy: slingsho

Traditional game: turn rope

knocking balls

- **Folkways**: local folk traditional festivals, customs, food, drink, clothing;

Children are tasting local tea

Making spring roll(local snack)

Making fish balls(Fujian typical food)

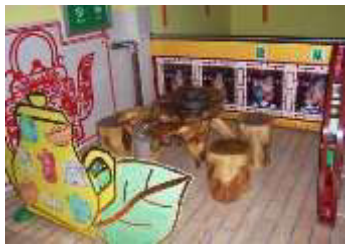
Visiting elderly care home on Chung Yeung Festival

Fujian Hoi An woman clothing

Clogs shoes

The hidden curriculum are as follows:

- **Environment:** emphasis on the creation of the school environment and class environment, provide children with environment and surroundings strongly featured with Minnan culture, Give full play to the educational function of the environment as a hidden curriculum.



- **Parents:** emphasis on parents as important curriculum resource for local culture education. Establish kindergarten-family communication window, billboards and kindergartens website, play the role of parents as the first teachers of young children.

Kindergarten website

teacher-parents communication window of class

Traditional game | Making dumpling on Winter Solstice | Parent-child fashion show | Game materials(local snacks) made by parents

- **Society:** establish contact with outside education base such as Minnan Culture Research Association, Xiamen Garden Expo, Gaojia Drama Group, establish contact with the folk artists, artists by inviting and visiting to form a joint force of localization education.

Invite folk artist to teach children produce dough figurines and cut paper

Invite opera group to show to children

Note: data and pictures are offered by the website of No.9 kindergarten(http://www.xmsdjyey.com/home.asp)

Beijing Normal University kindergarten, Beijing, PRC

Founded in 1915, Beijing Normal University Kindergarten(BNUK) is a professional institution with excellent teaching and research tradition. It's located in campus of Beijing Normal University, aiming to promote children development, serving the parents, and serving the University in teaching and research. As a model kindergarten, BNUK has demonstrated itself in many ways. Since 1950s, BNUK has been a training base for teachers and principals across the country. Since 1998, it has been a training base for Montessori teachers across the country. In recent years, it has made a positive commitment to support education in Beijing, Sichuan, Gansu, Xinjiang and other places.

Because of excellent education quality and its social contribution, BNUK has received great honors: in 2001 it was named the first "Demonstration kindergartens in Beijing"; in 2004 awarded the title of "People satisfied kindergarten"; in 2005 named

“Advanced units to create a learning organization”; in 2008 named “one of top ten kindergartens representing the highest level in preschool education”. Besides national influence, BNUK also show the world its high quality and actively communicate and establish friendly relationship with high-quality preschools in the United Kingdom, Japan, Hongkong and other countries and rejoins.

Curriculum philosophy:

Under the support and influence of Beijing Normal University, kindergarten takes “child-centered” as the philosophy of education, which means “Respect children, Study children, Promote active development of children”. Based upon this educational ideal, they think;(a)curriculum should aim at young children’s physical, cognitive, emotional and personality development as a fundamental;(b)teacher is the key to curriculum.

Beautiful and meaningful environment:

Outside:

Inside:




Corners and game areas in classroom:


Draw traditional culture into curriculum:

As the capital of China, Beijing is a big city having 56 nations gathering together.

- Folk art:

Children represent folk art in their own way

Chinese calligraphy

Making dough dragon

Children imitate dragon dance

Watch shadow play

Watch lion dance

Land boat performance

Learn Chinese Kung Fu

Fly a kite

- Typical food:

Making dumplings Making sugarcoated haws on a stick Making fried dough twist Making glutinous rice balls

- Place of interest, historical sites and museum

Visit the Summer Palace

Climb the Great Wall

Visit the museum to know local history

Visit art Arts Pavillion

Enjoy traditional Chinese painting

Note: data and pictures are from Beijing Normal University Kindergarten website (http://child.bnu.edu.cn/)

Annex 4. Persons, institutions and organizations consulted

2013.02.21 Xinjia kindergarten (privately-owned)

People met:

Principal of No 4 SVS: Ms Yang Xiaoling,

Vice Principal of No 4 SVS: Mr. Chen Jianzi

Director of No 4 SVS PMO: Mr. Zhong Yongqiang

Director of kindergarten: Ms Yu Lian

Teacher (graduate of No 4 SVS): Miss Lu Huifang

Students(internship): Miss Tan Jing, Ma Libin, Lei Ligui, Chen Shanshan, Xu Jingcai, Yang Jiaomei, and Liao Shulian

2013.03.07 Nanning No.4 School Meeting room

People met:

Principal of No 4 SVS: Ms Yang Xiaoling,

Vice Principal of No 4 SVS: Mr. Chen Jianzi, Mr. Chen Shujian, Mr.Liang Qingkai, Mr.Liu Haidong, Mr. Zhou Shiyi

Director of the Office: HUANG Xu

Chief of instruction section: Liang Lai Ping

Deputy Chief of instruction section: Tan Zhiyi, Wei Dan

Chief of Student Branch: Huang Yuanzhi

Deputy Chief of Student Branch: Tan Hongbo

Chief of General Services Section: Ningxiang Xing

Deputy Chief of General Services: Bi Lele

Director of Enrollment and Employment Office: Zhu Zhaoyi

Chief of Training Section: Zhong Li Ming

Director of Teachers department: Wei Jianhui

Deputy Director of Teachers department: Deng Tingbo

Group Party Secretary: Li Guifeng

2013.04.09 NNDRC 12F Big Meeting Room

People met:

Finance Bureau、Education Bureau、No.4 Vocational School、PMO

2013.04.16 Education Bureau, Nanning

People met:

Mr Liao director of Vocational Education and Adult Education Division

Mr Yang director of Finance division

Mr Zhou director of basic education Division

Ms Su director of Policy and Regulation Division

Annex 5. Survey questions

- **Kindergarten Survey A (for Director)**

Dear Director,
This questionnaire is designed to find out the challenges you have with teaching practice in kindergarten and your requirements of the teacher training curriculum. The survey is taken anonymously, the survey results will be only be used for kindergarten teacher training curriculum reform. We hope to find ways to improve the kindergarten teacher training program with your participation and support. Please tick ("√") in the "□", or rank, or fill in the blank with your different ideas. Thanks for your support and cooperation!

Background data needed to be filled in the blank：

Name：_____Location：

Type of School (public/ private)）：_____Size：

Number of children enrolled：_____ Staff：

Teaching staff：_____ Teachers specialized in preschool education：

Teachers certificated：

School motto：

Please choose only <u>one</u> answer to the following questions……

1. How long have you been kindergarten teacher?

□ less than 3 years □ 3-5 years □ 5-10 years □ 10-15 years

□ above15 years

2. What's your major?

□ Preschool education teacher training program □ other teacher training programs

□ Non-related program

3. Do you have teacher certification?

□ None □ Yes but certification for primary school teacher

□ Yes and certification for kindergarten teacher

4. What is your technical title?

□ None □ 3st grade primary □ 2st grade primary □ 1st grade primary

□ Senior primary □ Senior secondary

5. How familiar are you with 3-6-year-old children's education and care?

□ Very much □ Mostly □ A little □ Nothing

6. How do you feel about the quality of the teaching staff in your kindergarten?

□Completely satisfied □Satisfied □ Just so so □ Unsatisfied

Please fill in the blank with your ideas in the following questions

7. If you send teachers for in-service training, what aspects do you expect her/him to be trained?

A _____ B _____ C

8. If you send teachers for in-service training, what are the difficulties?

A _____ B _____ C

9. What kind of kindergarten teachers are parents' preference?

A _____ B _____ C

10. Have you heard of 'Continuing Professional Development,' (CPD)? If yes, please list three things you know about it:

A---------- B---------- C----------

11. What suggestions do you have to improve kindergarten teacher training program?

Annex 6. Survey questions (teachers)

- **Kindergarten survey B (for teachers)**

Dear Teacher,
This questionnaire is designed to find out the challenges you have with your daily teaching practice in kindergarten and your requirements of the teacher training curriculum. The survey is taken anonymously, the survey results will only be used for kindergarten teacher training curriculum reform. We hope to find a way to improve kindergarten teacher training programs with your participation and support. Please tick, ("√") in the "□", or rank, or fill in the blank with your different ideas. Thanks for your support and cooperation!

Please choose only one answer from the following questions

1. How long have you been kindergarten teacher?

□ less than 3 years □ 3-5 years □ 5-10 years □ 10-15 years

□ above15years

2. What's your major?

□ Preschool education teacher training program □ other teacher training programs

□ Non- related program

3. Do you have teacher certification?

□ None □ Yes but certification for primary school teacher

□ Yes and certification for kindergarten teacher

4. What is your technical title?

□ None □ 3st grade primary □ 2st grade primary □ 1st grade primary

□ Senior primary □ Senior secondary

5. How familiar are you with 3-6-year-old children's education and care?

□ Very much □ Mostly □ A little □ Nothing

Please choose multiple answers to the following questions

6. What challenges are you and your colleagues confronted with in your professional development?

□ Outdated teaching content □ Lack of new teaching methods □ Lack of awareness and methods of educational research

□ Lack of pedagogical and psychological support □ Lack of educational information technology □ A narrow range of background knowledge

□ Lacking in professional identity

7. What skills do you need the most?

□ classroom management □ teaching and learning

□ applying/ practising new activities and techniques □ Literacy □ Numeracy
□ using new teaching resources □ Giving peer feedback _____
□ Others

8. What content knowledge do you need the most?

□ Physical and mental development in early years □ Early childhood education

and care □ Knowledge in the five learning areas required in the Guidelines for Kindergarten Education □ Interpretation of related policies and documents □Physical and mental development and education of children with special needs □ Teachers' mental health □ Others

_____

9. What challenges do you think there are with the preschool education teacher training program?

□ Over emphasis on professional and academic knowledge □ Outdated and hard to learn □ Knowledge and skills taught are unpractical

□ Face-to-face classroom lecture is the main teaching mode □ Lack of support (mentoring/ follow support) □ Lack of observation and constructive feedback

□ Others _____

Please give your answers and rank them

10. What are you unsure about in your daily educational practice? Please rank from the most unsure to least unsure.

Most ____ _____ _____ _____ _____ _____ least

A Teaching activities design B Formative/ summative Evaluation on teaching C Teaching activities organization and arrangement D Communication and Interaction with children E Understanding of advanced educational philosophy F Cooperating with families G Assessment

11. What program content do you think is the most helpful to your teaching practice? Please rank from the most helpful to the least

Most _____ _____ _____ _____ _____ _____ _____least

A Teacher morality B Mental health C Early childhood psychology D Modern educational technology E Job skills F Advanced educational theories G Classroom management

12. In your daily teaching activities, what job skills and activities do you think you should have? Please rank from the most-needed to least-needed

Most _____ _____ _____ _____ _____ _____ _____ _____ _____least

A Teaching activities design B Reflecting C Initiate and provide materials for games D Making use of environmental resources E Setting up rooms F Formative Evaluation G Parents work H Making use of educational technology I Educational research I Observation and Giving constructive peer feedback J Continuing Professional Development K Materials development

Annex 7. Guangxi Zhuang Autonomous Region Model Kindergartens Assessment Criteria

Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B (0.7-0.5)	C (0.4-0)	
A1 Kindergarten Equipment 300 Scores	B1 Kindergarten Construction 150 Scores	1. Independent, safe, with sufficient sunlight and fresh air, away from the pollution source.	24	All meet the standards or one item not	Except the first item, the rest do not meet the standards.	Two items do not meet the standards; if not independent, the score is zero.	Field study and query for data.
		2. Clean, green, beautiful and child oriented; the area of green space per child not less than $2m^2$	15	All meet the standards or one item not, and the area of green space not less than $1.5m^2$ per child.	Two items do not meet the standards, and the area of green space not less than $1.2m^2$ per child.	Three items do not meet the standards, and the area of green space is less than $1m^2$ per child.	Field study and query for data.
		3. The outdoor playground at least $4m^2$ per child (with the lawn), with sandpit, swimming pool, 30-meter straight runway, animal-raising corner and planting area	15	All meet the requirement or shortage of 1 item.	Shortage of 2 items	Shortage of 3 items or above	Field study and query for data.
		4. For 9 classes or above, the occupation of land not less than $4200m^2$; for 12 ones or above not less than $5500m^2$.	30	Meeting the requirements	Meeting 90%	Meeting less than 80%	
		5. Usage area of activity room for every class per child not less than $1.5\sim2m^2$(with $90m^2$integration of sleeping room);Every class has the washing room (at least 6 taps and 4 toilet holes)	30	All meet the standards	One item does not meet the standard and usage area is $1.2\sim1.1\ m^2$ per child.	All do not meet the standards, and usage area is less than $1m^2$ per child.	Field study and query for data.

Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B (0.7-0.5)	C (0.4-0)	
		6. With the special room of large area, enabling the children's autonomic activities: multi-functional activities room, scientific research exploration activities room, library, reading room and music(dancing) room etc., also with corresponding equipment and materials	15	All meet the requirements	There is multi-function room and in shortage of one other room.	Shortage of 2 rooms.	Field study
		7. With reception office, health room (including isolation room), principal office, teachers' offices, reception (meeting) room, material room and storage room etc	12	Having all the rooms	Shortage of 1 room.	Shortage of 2 rooms.	Field study
		8. Reasonable proportion and layout of various fields; no hazardous articles and sundries on the field, favorable for various practical activities of children's. High usage rate and serviceability rate of various fields, with good educational benefits	9	All meet the requirements	One item does not meet the requirement	Above 3 items do not meet the standards.	Field study and checking the field arrangement schedule and records.
Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B(0.7-0.5)	C(0.4-0)	
A1 Kindergarten Equipment 300 scores	B2 Facility and equipment 150 scores	1. Every class has the tables, chairs and sleeping beds with the corresponding heights for children; with the open-ended toy cupboards, books shelves, sound recorders, TVs, projectors and pianos etc	18	All meet the requirements and above one third classes have pianos.	Every class has table, chair, bed, organ, and other one item is in shortage.	Every class has table, chair and bed, other 2 items are in shortage.	Field study

Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B (0.7-0.5)	C (0.4-0)	
		2. Every class has good equipment of lighting, ventilation, cold-proof and cooling. With the firefighting equipment in accordance with the firefighting standards	15	All meet the requirement	One item does not meet the requirement	two items does not meet the requirement	Field study
		3. Having the large toy and sports apparatuses which meet the activity requirements of children. The number of outdoor large toys not less than that of classes (the number is converted according to the function). Reasonable layout, safe, clean and high usage rate	18	All meet the standards or in shortage of one large outdoor toy.	For every class, outdoor large toy is 0.8—0.5.	Outdoor large toy less than 0.5 per class.	Field study
		4. Having the fields or facilities which ensure the children's activities when raining. $1m^2$ per child	6	Above 0.8m2 per child	0.7—0.5m2 per child	Below 0.4m2 per child	Field study and query for data.
		5. A variety of teaching and playing tools with sufficient quantity (at 70 kinds), safe and clean; high usage rate; some original and practical homemade toys (at least 30 kinds)	12	Meeting the standards	Basically meeting the standards	Only one third meeting the standards	Field study and check the toy registration.
		6. At least 10 children's books per child and one set of children's books which have been reviewed by the Textbooks Review Committee for Primary and Middle Schools of GAZR per child. A variety of children's books with healthy contents, suitable for the age characteristic of children and the requirements of the time	9	All meet the requirement or only 8 children books per child	Two items do not meet the requirements or only 6 children books per child	5 children books per child or below or not meeting the standards.	Same as above

Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B (0.7-0.5)	C (0.4-0)	
		7. Having at least 100 kinds of books of educational theory and teaching reference. Updating at 10 kinds every year; prescribing at least 5 kinds of provincial preschool education magazines, or above level	12	All meet the requirement or one item does not.	Two items do not meet the standards	All do not meet the standars	Same as above
		8. Having multi-media classroom, computer room (connected to the internet) and closed circuit television in accordance with modern teaching requirements. Having various electronic teaching materials which could meet the working requirements of kindergarten's children care: tapes, videotapes, slides and computer software etc., with high usage rate	24	The first 3 items are available or in shortage of one item.	In shortage of 1 to 2 items among the first 3 items and the electronic teaching materials are in shortage.	Only having 1 item among the first 3 items or none available, and the electronic materials none.	Field study and query for data.
Grate A Indicator	Grate B Indicator	Evaluation Standard	Scores	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B(0.7-0.5)	C(0.4-0)	
A1 Kindergarten equipment 300 分	B2 Facility and equipment 150 分	9. Every class has washing equipment, disinfection cabinet, towel rack, and tea cup rack and insulation barrel in accordance with the sanitation standards. Every dormitory has qualified ultraviolet lamps, two towels and one cup per child	15	All meet the standards or in shortage of 1 item.	In shortage of 2 items	In shortage of at least 3 items	Field study

Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B (0.7-0.5)	C (0.4-0)	
		10. There are medicine cabinet, diagnostic bed, children's sick bed, baromacrometer and eye test equipment, with regular medicine instrument and medicine	6	All available or in shortage of 1 item.	In shortage of 2 items	In shortage of at least 3 items	Field study
		11. With reasonable cook facility, separation of raw and cooked, having pantry, decontamination room, clothing room and warehouse etc., and having some processing machinery for staple and non-staple food, raw and cooked not mixed with each other. Sanitary and nontoxic cookers, convenient to be washed and disinfected	15	All meet the standards or 1 item does not.	Two items do not meet the standards.	Three items do not meet the standards.	Field study
A2 Teaching staff 180 scores	B3 Leading staff 50 scores	1. The principal and deputy principal at least have the academic background of junior college. The principal received the training for principal at provincial or municipal level, having work license and corresponding qualification.	16	All meet the requirement or one staff does not.	Only having the academic background of kindergarten teacher	All do not meet the requirement.	Checking relevant files.

Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B (0.7-0.5)	C (0.4-0)	
		2. The provision is sufficient. For 6 to 9 classes, establishing 2 staffs for principal and deputy-principal; for 10 classes or above, establishing 3 staffs for principal and deputy-principal. Reasonable age structure, echeloning. Reasonable division of labor, clear responsibilities and good cooperation.	10	Meeting the requirement or 1 item does not.	2 items do not meet the requirements.	poor	
		3. The leading staffs have the modern scientific management concept and method, able to operate the modern office equipment. They need to improve the direction of teaching and children care work continuously, always participating or directing the teaching or children care , and published one thesis of education and teaching management experiences, or being awarded, at the municipal level or above, every year.	16	Meeting the requirement	Basically meeting the requirement	Poor or no paper published.	Same as above
		4. Increasingly strengthening the teaching and scientific research awareness,	8	Meeting the requirement	Basically meeting the requirement	Poor	Same as above

Grate A Indicator	Grate B Indicator	Evaluation standard	Score	Achievement or Weight			Evaluation method
				A（1.0-0.8）	B (0.7-0.5)	C (0.4-0)	
		having the basic theory and method of teaching and scientific research, positively and actively participating and directing the activities of teaching and scientific research of kindergarten.					

TA 8158-PRC: Project Preparatory Technical Assistance

TECHNICAL REPORT – PILOT RURAL HEALTH TRAINING BASE(S)

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CONTENT

LIST OF DIAGRAMS AND TABLES

LIST OF ACRONYMS

ADB	Asian Development Bank
CDC	China Center for Disease Control and Prevention
GZAR	Guangxi Zhuang Autonomous Region
NCMS	New Cooperative Medical Scheme
NHB	Nanning Health Bureau
NHS	Nanning Health School
RMCT	Rural medicine core teacher in health school
RMP	Rural medicine practitioners (village doctors, township hospital doctors and nurses)
RMM	Rural medicine mentors
RMT	Rural medicine (non-core) teacher in health school
TOR	Terms of reference
TVET	Technical Vocational Education and Training
UNICEF	United Nations Children's Fund

EXECUTIVE SUMMARY

1. The lack of rural health practitioners led to a recent formulation of a national policy to train rural health assistant practicing physicians at secondary vocational schools. New public health system reform, new policy, new work demands, lack of capacity in public health and teaching/ training. Currently, traditional theory based training methods and models are used to teach students, with an emphasis on clinical medicine and little on public health. There has been a shift in job nature and work demands of rural health practitioners to be more public health oriented. Training of new and existing rural health practitioners is best to be done within the context of rural health system where the new rural doctors will be working. However, many secondary vocational health schools in China have not adopted this and continue to have their students' last year of practicum at county hospitals.

2. Shifting the training sites from county hospitals to township hospitals, village clinics and rural communities poses new opportunities and challenges. This project describes an innovative, sustainable and scale-able pilot rural health training model. The pilot is designed to be transferable to other clinical and health related vocational training settings, or in other secondary health schools elsewhere in the country that offer rural doctor training. The pilot utilizes the widely adopted model of train-the-trainer where selective secondary school teachers in rural medicine course receive capacity building in pedagogy, curriculum development and public health to become "key teacher trainers". The core teacher trainers select central township hospitals that have quality health professionals who provide quality health services as pilot training bases. The core teacher trainers train rural health practitioners from these pilot sites to become practicum mentors for their students.

3. The innovative and investigational part of the pilot lies in the key teacher trainers being based in rural health training sites in township hospitals, village clinics and the associated rural communities. This will ensure that the students and rural health practitioners receive timely and continuous support and assistance from the key teacher trainers during the students' practicum. The key trainers' presence at these sites will highly enhance the sustainability of the pilot as demonstrated by other national and international best practices. Monitoring and evaluation mechanisms will be established and results from these will be used to prepare documents in various formats to be disseminated to a wider audience in order to facilitate other rural health training schools nationally and internationally and ultimately to remedy the shortage in rural healthcare workers worldwide and to improve the quality of health services in rural and remote areas.

I INTRODUCTION

4. Strengthening public health care services and the grassroots health workforce is one of the priorities of National Health Care Reform. In 2010, there was a national average of 7.6 health personnel per 1,000 urban residents while the average in Nanning was 5.35 health personnel per 1,000 urban residents and only 0.76 health personnel per 1,000 rural residents. In the same year, the central government required each village to have a standardized village clinic. The Nanning government in response built a 100-120 meter squared (m^2) village clinic for each village under the municipality. Due to the shortage of rural healthcare workforce, many of these clinics are unstaffed or understaffed. Most of the current practicing village doctors are former barefoot doctors who have received minimal formal medical education and training if at all. The lack of skilled and qualified health professionals in the rural and remote areas needs to be urgently addressed.

5. The National Health Care Reform also included a package of basic public health services to be provided by rural health systems nationwide. The three-tiered rural health system consists of county hospitals, township hospitals and village clinics. The China Center for Disease Control and Prevention (CDC) provided training to health workers in township hospitals to provide these services. The health professionals in township hospitals then provided training to village doctors.

6. Many village doctors have not received formal medical education or training. New village doctors in recent years have been required to have professional training in vocational secondary schools. In 2010, one of the central government's strategies to increase the number of rural doctors was to require secondary health schools nationwide to offer a 'Rural Medicine Profession' course. Guangxi Zhuang Autonomous Region (GZAR) provincial government aimed to build rural health workforce and to improve the quality of primary healthcare in rural areas by having each township hospital and village clinic to train one rural medicine graduate133. Nanning Health School offered this three-year course since 2011. Secondary school graduates of this course can only work in township hospitals or village clinics the first three years after graduation. This differs from the former graduates who were able to work in health units in counties and even cities. The Nanning Health School has responded to these changes by planning to place rural medicine students in rural health systems during their practicum rotations beginning in June 2013. However, rural health practitioners in township hospitals and village clinics are not use to having students job shadowing and many will be teaching students for the first time.

7. The relatively new basic public health services are unfamiliar to both the school teachers and rural health practitioners and this poses another challenge to mentoring and teaching students. On the other

[133] There are 1314 township hospitals, 23518 village clinics in 14361 villages in Guangxi Zhuang Autonomous Region.

hand, this creates opportunities for the school to pilot innovative and sustainable ways to contribute to the education and training of skilled rural health professionals.

8. This sub-component of establishing pilot rural health training bases is in line with the overall technical vocational education and training (TVET) project to support China's Twelfth Five-Year Plan of creating and strengthening qualified labor force in rural health systems.

9. **Methods.** Stakeholders' and potential beneficiaries' demands, needs and gaps in rural health training were identified and assessed. Stakeholders and beneficiaries include representatives from Nanning Health Bureau; teachers and students from Nanning Health School; health workers from all three levels of Nanning rural health system (county hospitals, township hospitals, village clinic) and residents living in rural areas. Data was collected from document review, focus group interviews, semi-structured in-depth interviews with key persons, field surveys, job shadowing, questionnaires and participatory rapid appraisals. The pilot rural health training bases' objectives, concepts, design and implementation plans are based on identified demands, needs, and gaps, national and international best practices. Final details of the pilot rural health training bases described here were validated and agreed by stakeholders and potential beneficiaries.

II. SITUATIONAL ANALYSIS: Nanning Rural Health System

10. The rural health system consists of service delivery facilities at three levels in county hospitals, township hospitals and village clinics. There is a recent provincial policy of graduates from rural medicine professional course to work only in township hospitals or village clinics within the first three years of graduation, thus the needs analysis for this sub-component focuses on these two levels of the rural health system.

A. TOWNSHIP HOSPITALS

11. There are 123 towns with 40 central township hospitals around Nanning. The township hospitals are constructed following the state laws and regulations standards in terms of size, function, equipment, affordability, safety and hygiene.

12. The township hospitals are divided into general and central hospitals according to their function. General township hospitals provide preventive health care, basic medical care, health education and rehabilitation services. They manage public health services in the area entrusted by the county health administrative departments and are responsible for providing necessary technical guidance and training to village doctors. Central township hospitals provide professional and technical guidance to surrounding general hospitals on preventative and clinical care services[134]. Medical professionals are generally hold higher qualifications in central hospitals compared to general hospitals. Township hospitals have three main departments: (i) in-patient

[134] Table 1. Central and General Township Hospital Comparison

department; (ii) out-patient department; and (iii) public health department.

13. **In-patient Department.** There are weekly in-patient rounds with a doctor from Nanning City Hospital and daily ward rounds with an attending doctor from a county level hospital. Attending doctors are required to work in township hospitals if they wish to be promoted. They generally work in township hospitals four weeks at a time. Problem-based learning and teaching are employed during ward rounds. The content is usually related to patients' clinical history and presenting symptoms, physical exam, and care management of common acute and chronic conditions.

14. **Out-patient Department.** There are usually two doctors per consultation room and each doctor sees about twenty to thirty patients a day. Most patients speak mandarin though Zhuang was the predominant patient ethnicity. Out-patient laboratory and radiology services are available if needed.

15. **Public Health Department.** Public health services have been greatly expanded as a third main service area of township hospitals since 2011. These now include eleven basic public health services including the more traditional and mature public health programs in vaccination, and maternal and child health. However, health workers are less competent in other public health services such as health education and managing chronic diseases in the community. Most township hospital staff has received some public health training from CDC according to the prevailing public health need. The township hospitals in turn train village doctors as village doctors have started to provide some of the public health services together with the township hospitals' public health departments.

16. The National Basic Public Health Service Project was launched in 2009 and the 11 basic public health services standards revised in 2011[135]. These include: (i) residents health record management; (ii) health education; (iii) immunization; (iv) 0 – 6 year old child health management; (v) maternal health management; (vi) elderly health management; (vii) management of patients with hypertension; (viii) management of patients with type 2 diabetes; (ix) management of patients with severe mental illness; (x) infectious diseases and public health emergencies reporting and handling; and (xi) health supervision and management services.

17. There is a policy of "Village and Township Integration" that involves township hospitals managing and supervising village clinics. Village doctors provide surveillance data to township hospitals at regular intervals. Together as a unit, they try to meet basic public health service provincial requirements such as health promotion and activities in health education, creating health records for rural residents in order to receive the governments' public health subsidy. Both the township

[135] National Health and Family Planning Commission, *National Basic Public Health Services Standards* (China: ,[2011]).

hospitals and village clinics receive fewer subsidies if they are unable to meet the targets set by the government.

18. Township hospitals usually employ doctors with the Assistant Practicing Physician Certificate136 or higher qualification. Most doctors in township hospitals have completed three to four years of medical college who are eligible to sit the Practicing Physician Certificate upon graduation. Recertification examination is required within the first twelve years of initial certification of both Assistant Practicing Physicians and Practicing Physicians.

19. From participatory research, the following learning needs of the township hospital staff were identified: (i) skills in health education, (ii) health promotion skills, (iii) clinical skills, (iv) nursing skills, (v) teaching skills.

20. Having worked closely with village doctors, the township hospital staff and directors have identified the following learning needs of village doctors: (i) how to create federal health records for the rural residents, especially electronic records, (ii) basic clinical skills (such as measuring blood pressure), (iii) how to establish good doctor-patient relationships, (iv) village clinic management skills (practice management), (v) medical management of patients at follow-up clinic visits; (vi) communication skills, (vii) pediatric physical examination and (viii) clinical management of sick children.

B. VILLAGE CLINICS AND VILLAGE DOCTORS

21. The GZAR government built many new village clinics in 2010-2011 in order to have one standardized village clinic at each of the 14372 villages[137]. Prior to this, village clinics varied in size and standard. The size of some could barely fit a consultation table and chair. Similar to the classification of township hospitals, village clinics are also designated as ‘central’ or ‘general’. The policy required the central village clinics to be a minimum of 100 m2 in area and basic village clinics 80 m2. General village clinics are built in villages with a population of less than 3000 whereas central village clinics are built in villages with over 3000 residents. All village clinics must have the following rooms: (i) consultation room; (ii) treatment room; (iii) observation room; (iv) pharmacy; and (v) doctor’s call room.

22. The construction of all the village clinics in all villages in GZAR is now complete however there are not sufficient rural doctors to staff them. Many village doctors have retired or will soon be retiring. The remaining find it challenging to learn new skills such as those in public health and information technology.

23. Village doctors generally hold lower education qualification as many have not received formal medical training or even secondary

[136] Details of Assistant Practicing Physician Certification are in the next section.
[137] GZAR Ministry of Health and Agriculture, *GZAR Village Clinic Standardized Construction (2010-2011) Implementation Plan* (GZAR, China: ,[2010]).

education. More importantly, most lack training and education in public health practices as these services were only recent additions to their work that is subsidized by the government. Those who have received formal medical training did not have public health competencies included in the curriculum. The conventional secondary school vocational training for village doctors last two to three years with the lectures taking up the majority of the time and about six to ten months of practicum in county hospitals. Some have received internship training up to one and a half years in county hospitals yet still felt the duration of training could be extended. However, most village doctors reported that practicums in county hospitals were not relevant to their daily work as patients in these hospitals often have much more serious and complicated medical conditions. In contrast, they felt that practicum or training at township hospitals are more relevant to their current work demands and have a more similar case mix of the variety and severity of illnesses they manage in the rural communities.

24. Formerly, village doctors take the 'Village Doctor Licensing Certificate' public examination in order to practice. They can also take the 'Assistant Practicing Physician Certificate' examination. The latter examination is more difficult and many village doctors do not hold the Assistant Practicing Physician Certificate nor do they even attempt to sit the examination. One township hospital reported three out of 34 (about 9%) village doctors qualified as assistant practicing physicians, another reported one out of 15 (about 7%) while a third reported one out of 27 (about 4%). Having the Assistant Practicing Physician Certificate for five years, village doctors may sit the 'Practicing Physician Certificate' examination to work in county hospitals or higher levels. It is uncommon for county hospitals to employ Assistant Practicing Physicians in clinical services as these doctors do not have prescribing privileges there. Assistant Practicing Physicians have prescribing privileges only if they work in township hospitals or village clinics. Township hospitals only employ village doctors who have passed the national examination and hold the Assistant Practicing Physician license. Those without this license, because they did not attempt the examination or failed it, often remain as village doctors.

25. Both physician qualifications include clinical skills examination that assesses communication skills, physical examination skills, diagnostic skills and treatment plan formulation. The syllabus for Assistant Practicing Physician examination has a heavy emphasis on clinical content which has little relevance to the daily practice and work demands of village doctors but somewhat more relevant to township hospital doctors.

26. With the recent policy changes in training new rural doctors, Rural Medicine graduates of secondary vocational health schools will be eligible to sit the Assistant Practicing Physician Certificate examination one year after they graduate. During this year, they can work in village clinics under the supervision of an Assistant Practicing Physician certified village doctor. Prescriptions written by the graduates need to be counter signed by the certified doctor. With a shortage of rural health workers and even fewer certified Assistant Practicing Physicians in village clinics, it has been a challenge for graduates to find internship placements before they are eligible to take the certificate examination.

27. In the 1960s, village doctors were trained to provide public health services (such as vaccinations) and basic medical services (such as outpatient care). In the last two decades, village doctors' work shifted to fee-for-service curative care which constituted most of their income. However, village doctors started to offer more public health services again when the government provided subsidies for these in the last few years. The subsidies give the village doctors with extra income in addition to the fee-for-service clinical care that they conventionally offer.

28. Some specific examples of the public health services that village doctors provide are described here:

    a. Surveillance and monitoring: (i) report deaths, issue death certificates and report births to township hospitals regularly; (ii) alert township hospitals when there are unusual patterns of illnesses or infections; (iii) create standardized health records filling in printed health surveys[138] for rural residents in their respective villages that include a comprehensive personal medical history; a detailed social history (including physical activity, dietary habits, tobacco use, alcohol use, occupational hazards or exposures); family history; review of symptoms; home environmental assessment (such as cooking fuel and ventilation, water source, sanitation); complete physical examination findings; auxiliary bed side and laboratory tests (include complete blood count, routine urinanalysis, fasting glucose, electrocardiogram, microalbuminuria, fecal occult blood, glycosylated hemoglobin (HbA1C), hepatitis B virus surface antigen (HBsAg), liver function, renal function, cholesterol profile, chest x-ray, ultrasonogram, pap smear; physical assessment by traditional Chinese medicine methods; (iv) monitor for water borne illnesses and status of general waste disposal
    b. Clinical treatment of (i) common minor illnesses such as self-limiting fevers, headaches, coughs and colds, aches and pains; (ii) make a visit patient home visits when necessary or requested by rural residents; (iii) make referrals to township hospitals for chronic disease management such as hypertension, diabetes and heart disease; (iv) basic elderly care.
    c. Health education: (i) post health messages and health information on public notice boards and walls; (ii) distribute health information leaflets provided by the government; (iii) give health talks at the villages.
    d. Health promotion and protection: township hospitals' public health department staff contacts village doctors to remind villagers to bring their children for vaccinations at township hospitals.

29. Previously the village doctors worked alone in a solo practice and in the beginning had much trial-and-error in practice management related to finances, equipment procurement and maintenance, medication purchasing and storage when they first begun to work. Some

[138] Example of the national health record can be found here National Health and Family Planning Commission, *National Basic Public Health Services Standards*

expressed that these would be helpful knowledge and skill areas to be included in their pre-service education and training.

30. Village doctors started to receive government subsidies in the past few years if they meet the public health service targets. Village doctors are assessed by township hospitals every six months against these targets. The township hospital public health doctors and nurses have regular outreach visits to their catchment villages and work together with the village doctors to provide the basic public health services. Township doctors have reported that village doctors generally cannot meet service targets and that their service quality is often lower. The township hospitals also receive government subsidies according to the public health service targets they meet.

31. Village residents generally felt that village doctors have good attitudes and relate to them well. Residents felt that it was in the doctors' interest that good relationships are maintained with them. The residents felt that the skills and medical knowledge of township hospitals doctors are better and more competent.

32. In-service training courses for practicing village doctors are typically short in duration generally of one of the following types:

    a. One-day training funded centrally once a year, organized by county hospitals;
    b. Regular training by township hospitals required by the Nanning Health Bureau at least quarterly. These are usually in the form of classroom teaching. The training is funded by Nanning Health Bureau as part of the public health service subsidy. One township hospital use regular (bimonthly) meetings with village doctors as a form of 'training' when these may not have any educational component;
    c. Training organized and funded by CDC or other non-profit organizations;
    d. The village doctors who graduated one to two decades ago sometimes are required by Nanning Health Bureau to attend lecture-based refresher courses.

33. One such training was offered at Nanning Health School funded by a non-government organization during summer holidays to a group of 60 village doctors from one county. However, the teachers feel incompetent in public and community health therefore the content of course focused mainly on clinical medicine such as internal medicine, pediatrics and surgery. Other more relevant skills such as computer literacy and information management were not included. The short intensive course lasted eight days with a total of 56 teaching hours. These teaching formats are generally unsustainable if funding is not available. The content is mainly clinical and curative and too advanced for the level required in rural settings.

34. The village doctors are motivated to learn and welcome training organized by township hospitals and health bureau even when this meant a loss of income to attend the training sessions. Their perceived learning needs include: (i) clinical knowledge; (ii) computer literacy; (iii)

all the basic public health services; (iv) teaching and mentoring skills for students and their apprentices.

III. SITUATIONAL ANALYSIS: Nanning Health School

35. Nanning Health School, founded in 1972, is a secondary vocational school that provides training of health care workers such as rural doctors, nurses, midwives, medical laboratory technicians, medical imaging technicians, Traditional Chinese practitioners etc. The school is a national key secondary vocational school and a national demonstration school for the reform and development of secondary vocational education. The school offers provincial-level certified demonstration courses in nursing care, dentistry and pharmaceuticals (pharmaceutical marketing).

36. One of the school's objectives is to provide high quality health related training to improve health services in the area. The school has recognized the need for enhancing the quality of professional teaching-learning and training curriculum and methods. Specifically, the school has the following objectives related to rural doctor training: (i) reform the teaching-learning methods from the traditional teacher-centered training model to the student-centered model; (ii) Implement and sustain a systematic curriculum reform on work-related practices and process; (iii) reform student assessments that the assessments are 'authentic' (i.e. practice and real-life based) and meet social evaluation; (iv) strengthen the training of teachers to improve their teaching methods; (v) strengthen development of the teaching staff and leaders to improve the overall quality of human resources; and (vi) improve students' learning through a range of delivery modes such as practice teaching and practice simulation.

A. RURAL MEDICINE COURSE

37. In view of ageing village doctors, their lack of prior formal education and experience in public health practices, and shortage of rural health workers, the government required health schools nationwide to offer a vocational course in 'Rural Medicine'. Nanning Health School started offering this three-year course in 2011. Graduates from this course are required to work in township hospitals or village clinics for a minimum of three years before they can work in county hospitals if they choose to.

38. The name of the course was changed from 'Chinese & Western Integrative Medicine' in 2011. Despite the name of the course and a clear objective of training new rural doctors whose work is largely public health related, its syllabus has changed little and retains an emphasis on clinical curative medicine. Other health schools have also made limited changes to the curriculum for training new rural doctors. The most prominent change of this course is the new requirement of graduates to work in township hospitals or village clinics the first three years after their graduation. After which they can work in county level or city level specific health centers.

39. Many currently enrolled students are from rural and remote areas. About a quarter of students have relatives or close family friends who

are village doctors. Some chose to study at the Nanning Health School for the school has a good reputation and the students' relatives are alumni of the school. In 2011, 156 students were enrolled in both campuses of the health school and the number increased to 340 in 2012, with a similar enrolment expected for 2013. The Nanning campus alone received 200 applications last year. Admission to the school is first-come first-served providing the student has completed junior secondary school. The teachers' impressions are that most students are motivated and dedicated to be rural doctors. The school predicts that many of the rural medicine students will return to work and live in rural areas. Most former graduates have also returned to settle in rural areas. The school has no data on the number of graduates certified as Assistant Practicing Physicians.

40. The school teachers would like their students to function as an independent rural doctor by the time they graduate. They believe that practicum placements at township hospitals and village clinics will improve students' confidence and independence.

B. TEACHER QUALIFICATION, EXPERIENCE AND IN-SERVICE TRAINING

41. Most of the health school teachers are clinicians (Practicing Physician Certified [139]) with extensive work experience in various county level and city level healthcare institutions. All of them also hold valid teacher qualification and are therefore 'double qualified'. There are a total of fourteen rural medicine teachers yet only one has a public health background. Most teachers have limited understanding and work experience in public health and expressed difficulties in teaching the public and community health related curriculum as it is not clear to them what the specific competencies, skills and experience the students should have to fulfill the role of a rural doctor. The main knowledge areas are described in the government's curriculum framework. However the teachers expressed their uncertainty in the level of rural health knowledge and skills that are expected of the graduates. They also would like some guidance on what teaching-learning methods to use to teach these new areas.

42. Non-traditional teaching methods such as problem-based learning are felt to be non-systematic and disorganized and there was reluctance to utilize these. Some teachers are concerned that it may be difficult for the students to pass the mainly knowledge-based Assistant Practicing Physician Certification examination if the students did not learn knowledge systematically. They believe their primary responsibility is to help students pass these exams so they can be a certified rural doctor to provide health services. This reflects the need for the teachers to gain better understanding of student-centered teaching-learning methods and also the need to shift the paradigm of teaching students what to learn, to teaching students how to learn, to think critically and to be resourceful in solving problems.

[139] Practicing Physician Certificate is the next advancement after Assistant Practicing Physician Certificate

43. The teachers have annual in-service training that range from a few weeks up to a year. These are usually clinical placements during winter or summer holidays at various hospitals in GZAR or other provinces. Because the teachers' work permit is registered under the school not the hospitals, all their clinical services need to be under the supervision of the hospital staff. None of health school teachers have recent work experience in village clinics or the newly expanded public health departments in township hospitals. Health school teachers have some understanding of the new basic public health services but do not have the related practical experience in public health and community health. For example, the teachers have no hands-on experience in using the federal electronic health record system that the rural practitioners use. The teachers are not clear on what public health and community medicine skills and knowledge their students should have. They believe that curative clinical services remain to be the rural doctors' main duty and that three years of vocational training does not provide enough time for the students to gain the in-depth clinical knowledge and skills expected. They do not seem to recognize that the responsibilities of the village doctors are now shifting to providing more public health services in the community and less curative clinical services.

44. The teachers identified their learning needs in (i) rural health knowledge and concepts; (ii) teaching methods for rural medicine and (iii) communication skills.

45. From 2011 to 2012, the total number of rural medical students more than doubled from 156 to 340. While teachers in other professional courses increased, the number of rural medical teachers remained unchanged. In 2012, the teacher-student ratio of the rural medicine course is 1:26 [140], lower than the requirement of 1:20 set by the Ministry of Education for secondary vocational schools.

46. The teachers received many praises from the students that they are very dedicated to teaching, to their students and in training health workers. The committed and devoted teachers are a great asset to the school.

C. CURRICULUM AND TEACHING METHODS

47. The curriculum of the Rural Medicine follows the country's requirements and provincial policies which is theory and knowledge based. Subjects include anatomy, physiology, pathology, pharmacy, immunology, ear nose and throat (ENT), internal medicine, general surgery, pediatrics, obstetrics and gynecology, psychology, health protection, rehabilitation medicine and clinical medicine.

48. Other health schools around the country adopt a similar curriculum for the rural medicine course. Even when one of the former names of the course was 'Community Medicine and Health Promotion', the syllabus

[140] Table 2. Nanning Health School Statistics – Students. Other statistics available Table 3. Nanning Health School Statistics – Teachers; and Table 4. Nanning Health School Graduates and Employment (2012)

remains somewhat the same with emphasis on training a clinician rather than a public health professional. Despite this, the school is giving public health and community medicine some more weight though they teachers only have a partial understanding of the practical rural medicine needs and skills. The school has made some changes in the practicum arrangements to provide the students with practicum experience that is more closely aligned to their future work. In addition to county hospitals, students will also go to township hospitals and village clinics for part of their ten-month practicum in their final year. Even though practicum placements at county hospitals are less relevant to the rural medicine graduates' future work at village clinics, stakeholders hold a strong belief that students should spend the majority of their practicum time in county hospitals to gain sufficient clinical exposure to improve their passing rate of the Assistant Practicing Physician examination. Additionally, since the accreditation examination relies heavily on memorization, teachers have a tendency to focus on the examination syllabus and traditional teaching methods that favor pass rates rather than student-centered methods that encourage life-long learning skills. This can be a barrier for teachers to adopt changes in their pedagogic methods.

49. The stakeholders recognize that students should also have practicum experience at village clinics but they are concerned that since village doctors generally have less medical and public health training, the students' learning experiences may be compromised as the village doctors may not be the best mentors and trainers for the students in this aspect. However, the students can learn other skills (such as practice management, independence) and gain insight into the realities of the work and life of village doctors.

50. Teaching methods observed in the health school were mostly teacher-centered and lecture-based with large classes of seventy to eighty students. Clinical teaching observed in a central township hospital was also doctor-centered during an in-patient ward round.

51. Nursing students have clinical skills assessments but not the rural medicine students. Rural medicine students are assessed mainly by written tests in clinical knowledge and physical examination knowledge. After the practicum, there is not a standardized practical and clinical skills assessment of the students before they graduate. Instead, they are assessed by their various clinical mentors at different sites resulting in a variety of assessment methods, standards and criteria depending on the mentor.

52. Prior to 2011, students only went to county hospitals for their practicum rotations during their final year of the three-year course. Each hospital took a few students at a time with tuition fees[141] paid to hospital by the health school. Students usually lived on-site when possible. The practicum starts in June each year and lasts for forty weeks until the end of March the following year. Students rotate to various specialties with different duration depending on the specialty. Rotations in county hospitals include internal medicine, general surgery, pediatrics,

[141] 400 yuan per student per 10-month rotation.

obstetrics and gynecology etc. Plans for the new practicum arrangements have not been finalized and the curriculum for the practicum and its learning objectives were not available. Essential practicum activities have not been determined and thus the students learning experience is currently non-standardized and is much dependent on the rural health trainer. For example, the students have not had any hands-on experience with the electronic record system during their first two years of school-based learning. Without a curriculum specific to the students' practicum, they may or may not have the opportunity to use the system before they graduate.

53. Students would like more practicum time and have earlier clinical exposure. They would like more opportunities to learn from patients as they felt their learning is limited from practicing their clinical skills on each other with normal findings. The students are eager to have practicum time even on weekends if the health school is able to make such arrangements.

IV. RATIONALE for pilot rural health training bases

54. There is a shortage of rural health professionals contributing to the widening gap of urban-rural health inequalities. The health professionals who work in rural and remote areas often do not have sufficient public health education and training to provide quality public health services that can address the inequalities. Those who have received training usually have received heavily theory-based education without practicum training. The current rural medicine course in the health school is two-year classroom-based with a ten-month practicum in county hospitals and will also include township hospitals for the first time starting in 2013. Even though practicum placements at county hospitals are less relevant to the rural medicine graduates' future work demands at village clinics, the stakeholders believe that county hospitals provide clinical exposure to the students that help them pass the Assistant Practicing Physician examination. Nevertheless, there is a clear need for health school students to have practicum training in rural health systems to include township hospitals, village clinics and village communities. This helps the students to attain the knowledge, skills and competence to be an independent rural doctor by the time they graduate. This will increase the delivery and quality of rural health training for rural doctors and result in better delivery of health services for the rural residents.

55. The new inclusion of township hospitals and village clinics in the students' practicum is a change for the health school and rural health facilities. The arrangements for the students' practicum at these sites have not been finalized at the time of writing this report. The township hospitals that students go to are selected mainly based on geographic location and transportation convenience. It is necessary to ascertain that students learn from quality institutions and practitioners and there is a need for the pilot project to assist the health school in selecting the rural health training sites of a certain quality for their students. There will also need to be new organizational and institutional arrangements and relationships between the health school and rural health institutions which the pilot will support in the development and refinement of these.

56. Thus this is an opportunity for the TVET project to establish rural health training sites that are based within the rural health system and outside of the health school. Since this is not currently done elsewhere in the country, this new rural health training model will have the demonstrative purpose of its effectiveness and feasibility. This project will support the establishment of a pilot that focuses on enhancing the rural medicine practicum placements of the rural medicine students from the Nanning Health School in selected rural health facilities. For the purpose of the pilot, a limited number of training sites will be selected. Given this, it is likely that only a proportion of students will rotate at these pilot sites during the project. However, if the pilot is shown to be feasible and effective, the model can be scaled-up and implemented in the rest of the rural practicum sites that other students rotate through. In addition, target trainees can be expanded beyond pre-service learners of health school students to include practicing rural doctors (particularly village doctors) in refresher courses and continued in-service training as they also have a need to enhance their public health and clinical competencies.

57. All township hospitals and village clinics will be receiving students for the first time in June 2013. The rural health practitioners and rural medicine teachers have expressed their need to enhance their competencies in teaching and mentoring to help the students learn. There is a need for the pilot project to enhance these competencies of the students' trainers (both teachers and rural health practitioners) to facilitate the students to become competent and capable doctors in rural and remote areas.

58. The contents of the current in-service training and the health school's rural medicine course emphasize advanced clinical medicine instead of primary and community care, public health and elderly care. Other skills such as communication, practice management, community engagement, cultural sensitivity and cultural competence are currently absent from the health school's rural medicine curriculum. Learning opportunities in practical clinical and public health skills needs to be increased and these can take place in rural health training sites, again based outside of the health school. In terms of the rural medicine curriculum, it needs to be adapted to be more relevant to rural health and public health. The health school's teaching methods and approaches can be enhanced to improve students' learning. Therefore, there is a need for the pilot project to include sub-components in curriculum development and teacher training as well. These sub-components will be linked to the corresponding components in the larger Guangxi Nanning Vocational Education Development Project.

59. Most teachers and rural health providers only have a partial understanding and limited work experience in public health and expressed difficulties in teaching the public and community health related knowledge and skills. It is not clear to them what the specific competencies, skills and experience the students should have to fulfill the role of a rural doctor. The main knowledge areas are described in the government's curriculum framework. However the teachers expressed their uncertainty in the level of rural health knowledge and skills that are expected of the graduates. The rural health practitioners also do not have a clear understanding of the role and job

requirements defined by the new health reform and have technical difficulty in delivering the basic public health services. There is a necessity for the pilot to provide the teachers and rural health practitioners with capacity building programs in public health and rural health competencies. These programs can engage national or international experts from medical colleges, CDC or other public health agencies or institutions

60. Research has shown that students with exposure to rural health systems and rural communities are more likely to work in these areas after they graduate. The rural medicine graduates are already under regulation to only work in township hospitals or village clinics in rural areas. However, nursing students in the health school are not subjected to similar regulations. Since the shortage of rural health professionals also includes nurses, the nursing students should have exposure to rural health during their studies. Since this is currently absent at the health school, selected rural health training sites can provide nursing students with an opportunity to engage in rural health and may increase the number of graduates working in these locations.

V. STAKEHOLDERS' views and concepts of the pilot rural health training bases

61. The stakeholders concur that the main rural medicine trainers are the rural health practitioners at township hospitals and village clinics during the students' practicum. They think that the practitioners should have at least two to three years of work experience. Since they are trainers of assistant practicing physicians, they should have practicing physicians certification or above. The health school teachers in contrast provide the students with the knowledge base in rural medicine prior to the practicum rotations. During the students' practicum, the health school teachers then provide continuous technical support in teaching and mentoring to the rural health trainers, in addition to providing the trainers with support and training in student assessment and evaluation.

62. As one of the project's implementing agencies is the Nanning Health School whose primary beneficiaries are students, the health school students will also be the main beneficiary of this pilot project. The stakeholders recognized the need for enhancing capacity of current village doctors as well. However, they think the students learning needs are more urgent and that to focus on training the students and new rural doctors will have a larger impact to improving the rural health system in terms of health service quality and remediating the shortages of rural health professionals.

63. The stakeholders hold different views of where the practicum training should take place. Some think that township hospitals are the most ideal as they provide a range of clinical services in in-patient and out-patient departments. Students can also gain experience in community health and public health with the public health department. Given the close working relationships that township hospitals have with the surrounding villages, students will have opportunities to go into the communities to work with village doctors and rural residents. They will not have these experiences if the students spend all their practicum

time at county hospitals as village doctors only work directly with the township hospitals. At township hospitals, the students can also have clinical experience in managing patients with some severe or complicated conditions in the township hospitals. Thus the students will gain more understanding of the rural health system this way and become familiar with the different roles and functions of the township hospitals and village clinics.

64. The township hospital doctors are also more qualified and have received more education and training than village doctors. Other stakeholders think that the students should continue to have practicum rotations at county hospitals to learn clinical knowledge and skills and should spend the majority of their practicum here. However, students generally do not have much autonomy or independence during their rotations at township and county hospitals and have minimal clinical hands-on experience. There have been reports of students not allowed to examine patients by some clinical tutors in county hospitals. At the village clinics, the students may have more opportunities to see and examine the patients and formulate management plans with supervision from village doctors since there usually will only be one to two students at a time. They may have more hands-on learning opportunities such as home visits, writing prescriptions, completing national health records and other manipulative traditional Chinese medicine maneuvers.

65. Nonetheless, the stakeholders have a consensus that central township hospitals will be the main pilot rural training sites. As many staff in these hospitals will be teaching students for the first time, they will need capacity building. The staff also has direct working relationships with village doctors and their competencies in teaching, mentoring and public health can be transferable to the training of village doctors.

66. The stakeholders' criteria for selecting township hospitals for pilot training sites include (i) the proximity to the school; (ii) the size of the catchment population the hospital serves (55,000 or more); (iii) well equipped and offer comprehensive curative and diagnostic laboratory and imaging services; and (iv) the hospitals having a good relationship with the health bureau and local government. However, site visits to some central township hospitals and central village clinics revealed that enhancements in processes and personnel (such as environmental cleanliness, medical waste disposal, communication skills etc.) are recommended for these sites to become exemplary pilot training sites for health students' learning. To keep this new training model manageable during the pilot phase, the stakeholders concur that a limited number of pilot training bases (for example two) will be established.

67. The stakeholders hold different views on the students' practicum duration at the township hospitals and village clinics. Some stakeholders hold a strong belief that they should spend the majority of their practicum time in county hospitals to gain sufficient clinical exposure to improve their passing rate of the Assistant Practicing Physician examination. They suggested that students spend a maximum of six to eight weeks in township hospitals while the rest of the 32-34 weeks will be spent in county hospitals. Others think that

students need at least six months in village clinics and three months in township hospitals. This is based on reports from former students who generally needed about three to six months of internship after they graduate to gain sufficient experience and confidence to work independently. It is difficult to draw conclusions at this stage as none of the nationwide secondary health schools training new rural doctors have experience with these new arrangements. Towards the end of the mission, the health schools decided to place students in township hospitals for eight weeks and in county hospitals for 32 weeks. It is expected that with training in public health and competency-based curriculum development, the health school teachers and rural health mentors will be more adept in determining the optimal duration of practicum the students should spend in township hospitals.

68. One of the challenges of placing the students in village clinics is that the clinics can only take at most two students at a time given the limited space and lighter patient load. Some of the village clinics are also more remote and difficult for the school to transport the students there. During the practicum, the school takes the responsibility in assuring students' safety and arranging their transportation to various practicum sites. If the students need to be in different villages at the same time, this may require the school to adopt different policies in regards to practicum arrangements. It is unlikely that students may temporarily stay in the villages as it is often difficult to find appropriate accommodation for them. Nonetheless, the school believes that village clinics provide students with valuable experience in working independently as they can have more hands-on opportunities in village clinics and have more time to talk with and examine patients more closely. This would contrast to practicums in county hospitals where students usually observe the doctors and patients rather than being able to interact with them directly.

69. Regarding the institutional and organizational arrangements of the pilot training sites that are based in township hospitals, the stakeholders think that there should be localized management by the health school with assistance from the local health bureau. The health school will develop curriculum for rural health students and rural health mentors. The school will also develop and manage monitoring, evaluation and quality assurance mechanisms for the students' practicums and their rural health mentors with the support of the pilot project.

70. Agreeing that it is worthwhile for nursing students to have some exposure to rural township hospitals as well, the stakeholders feel that nursing students can have one- to two- week observerships at the pilot training sites. They can gain experience in rural health such as observing public health services offered at the township hospitals and rural communities.

71. Stakeholders from township hospitals suggested that students can help fill out the national health surveys[142] when the public health departments have outreach visits to surrounding villages. They also suggested other activities that students can participate such as health

[142] Paragraph 1.a for details of the national health record

promotion, health education and patient home visits. They think the optimal number of students is less than 10 at a time.

72. There are limited needs for equipment procurement at the pilot training sites since the students are at township hospitals mainly for public health practicum training. The Procurement inventory includes general bedside medical equipment for demonstrative and teaching purposes such as multifunctional cardio-pulmonary resuscitation (CPR) simulators, 12-lead electrocardiograph machines, manual and digital sphygmomanometers and desktop computers (Table). Other equipment such as projector, portable screen, laptops with DVD-ROM and digital video camcorders can be used for field activities such as health education, film making for health promotion activities.

73. In summary, the pilot project will have the following major components to address the needs and gaps of the project stakeholders and beneficiaries:

    a. Capacity enhancement of the health school teachers of the rural medicine specialty in pedagogy (teaching-learning methods and activities and student assessment), curriculum development, public health and rural health competencies;
    b. Capacity enhancement of the rural health mentors at the township hospitals and village clinics in pedagogy, public health and rural health competencies;
    c. Selection of quality rural health sites as pilot training bases;

VI. NATIONAL and International Best Practices in rural health services and training

74. The health school teachers and rural health mentors have a need for teacher training to enhance their skills in teaching and curriculum development. Details of best national and international practices for these can be found in the "Teacher Training" and "Curriculum Development" components of this Guangxi Nanning Vocational Education Development Project. Specific best practices related to health education and training will be discussed here. A program in "HIV/AIDS Prevention Education" jointly run by United Nations Children's Fund (UNICEF) and Ministry of Education in China utilized the train-the-trainer model. Key teachers were selected from schools to be teacher trainers which contributed much of the success of the training project. These key teachers were selected based on their motivation, work stability, ability to learn, communication skills, leadership abilities and initiative, and their teaching experience. They had reduced teaching hours and protected time to take part in the planning and implementation of teacher training. They also needed to commit to at least two years of being the key teacher trainer. A rural train-the-trainer project in Bangladesh funded by the World Bank had provided the key trainer with a motorcycle enabling the trainer to visit the various remote schools at regular intervals and provide continuous training and support to the school teachers. Student drop-out rates were lower in schools that the trainer visited and school teachers had higher confidence and job satisfaction.

75. Numerous national projects within Yunnan province utilized participatory concepts and approaches which enhanced the stakeholders' initiative, proactivity, creativity and ownership. These participatory approaches that emphasize the inclusion and utilization of the beneficiaries' enthusiasm, innovation and initiative contributed greatly to the various projects' sustainability as they had a strong sense of ownership. These have been shown in participatory training projects[143] that were student-centered and incorporated a variety of teaching methods (such as lectures, role plays, case studies and group discussions). In fact, participatory approaches in community and public health (such as community engagement and mobilization) have been advocated by the government since 1997[144].

76. One of the characteristics of rural health is that the residents are usually ethnic minorities with different culture, education, occupation, health beliefs and practices. Rural health providers with an understanding and the sensitivity to recognize the cultural diversity of rural residents and the skills to create a culturally safe environment can improve the acceptability and utilization of health services. Cultural safety requires providers to 'recognize, respect, and nurture the unique cultural identity … and safely meet their needs, expectations and

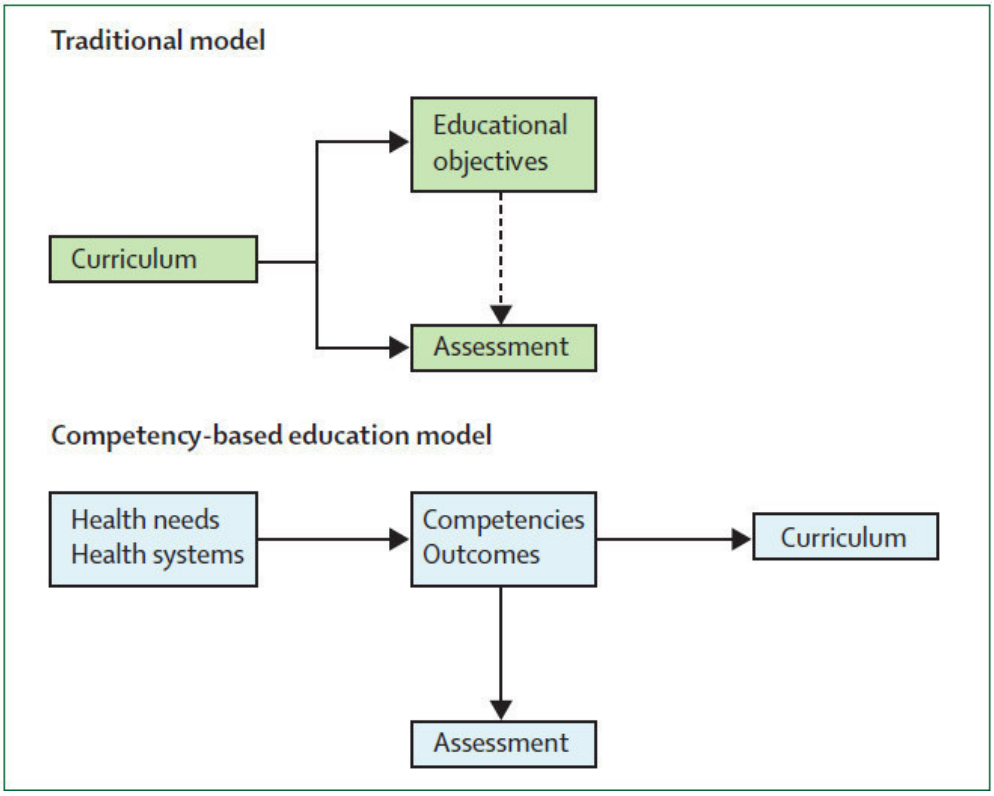
[143] Such as United Nations Educational, Scientific and Cultural Organization (UNESCO), Save the Children and Global Fund projects in China

[144] 'Contemporary China Health Policy' from National Health and Family Planning Commission, *The Decision of the Communist Party of China Central Committee and State Council on Public Health Reform and Development* (China: ,[1997]).

rights.'[145] Cultural safety is not only having the awareness of others' cultural diversity but also the awareness of the interactions between the practitioners' and consumers' different cultures.

77. Academic health institutions and organizations worldwide have advocated adoption of competency based curriculum for health education and training (Figure 1). This project would assist the health school in improving students' quality of learning and training outcome by advocating and supporting competency-based education and training that are in line with the current international best practice in health education.

Figure 1. Health Education Models [146]



78. Governmental and non-governmental public health academic institutions and agencies in Australia, Canada, United Kingdom and United States of America have conducted extensive qualitative research to determine core competencies specific for public health.[147] These were consolidated and adapted to produce a framework of core competencies for the rural medicine students and trainers (ANNEXES AND TABLES

[145] P. J. Wood and M. Schwass, "Cultural Safety: A Framework for Changing Attitudes," *Nursing Praxis in New Zealand Inc* 8, no. 1 (Mar, 1993), 4-15.
[146] J. Frenk et al., "Health Professionals for a New Century: Transforming Education to Strengthen Health Systems in an Interdependent World," *Lancet* 376, no. 9756 (Dec 4, 2010), 1923-1958.
[147] Bibliography in footnote of ANNEXES AND TABLES
Annex 1. Core Competency Framework for Rural Health Trainers and Trainees

79. Annex). Toolkits have been developed to facilitate educators in determining the specific public health core competencies for different levels of practitioners.

80. Worldwide, there are a number of health organization accreditation agencies with different accreditation standards for different types of health facilities and services. The Joint Commission (TJC) (formerly the Joint Commission on Accreditation of Healthcare Organizations (JCAHO)) is one such agency that has accredited and certified over 20,000 health care organizations and programs in the United States. This pilot project's selection criteria for rural health training bases (particularly central township hospitals) have been developed with reference to the Commission's standards.

81. To maximize the sustainability of this pilot and its potential impact for future large-scale implementation, we carried out consultation and design processes according to the guidelines recommended by the World Health Organization[148] (Table). Scale-up is defined as "deliberate efforts to increase the impact of successfully tested pilot, demonstration or experimental projects to benefit more people and to foster policy and program development on a lasting basis".

VII. RECOMMENDATIONS for the Pilot Rural Health Training Bases

A. INTERVENTIONS

82. The project aims to establish a national demonstrative model of pre-service rural health training under the management of a secondary vocational health school. The project will enable a competency-based curriculum for the health students' practicum to be developed to create vocational training that is more relevant to demands of rural doctors', rural communities and rural health systems. The quality of rural doctor education and training will be strengthened through this curriculum innovation, as well as through trainers' mastering of student-centered teaching-learning methods, authentic assessment, public health and clinical theory-practice integration, ethical practices, and cross-cutting issues in rural health care (gender, disadvantaged and ethnic minorities, social equity and participation).

83. A train-the-trainer model will be implemented where at least two rural medicine teachers from the health school will be selected as key teacher trainers. The project will enhance the trainers' capacity in pedagogy, public health practices, clinical practices, leadership and professionalism. Some of these domains are linked with other components within the project namely teacher training, curriculum development and elderly care. Other domains, specifically public health practices and sciences, will be supported through subcomponents in this pilot rural health training bases project.

[148] World Health Organization and ExpandNet, Beginning with the End in Mind: Planning Pilot Projects and Other Programmatic Research for Successful Scaling Up (Switzerland: World Health Organization, 2011).

84. A core competency framework for rural health practitioners was developed by integrating the stakeholders' needs and gaps, and international best practices. This was validated by the stakeholders. A total of 38 core competencies were identified under six competency domains in (ANNEXES AND TABLES

85. Annex): (i) Public Health Practice and Science; (ii) Attitudes and Communication; (iii) Professionalism; (iv) Ethical Practice; (v) Clinical Practice; and (vi) Teaching and Supervision. This framework will be used by key trainers and project consultants to develop competency-based curriculum for all levels of trainers and trainees in the rural health education system for themselves, other rural medicine teachers, rural medicine students, nursing students, and rural health practitioners in township hospitals and village clinics.

86. Once the key teacher trainers' teaching and public health capacities are enhanced, they will in turn enhance relevant competencies of other rural medicine teachers and rural health practitioners. The innovative and investigational part of the pilot lies in the key teacher trainers being based in rural health training sites in township hospitals, village clinics and the associated rural communities. This will ensure that the students and rural health practitioners receive timely and continuous support and assistance from the key teacher trainers during the students' practicum. The key trainers' presence at these sites will highly enhance the sustainability of the pilot as demonstrated by other national and international best practices. The key trainers' sense of ownership of the management and monitoring of the practicum training will also be increased which is also another important factor that contributes to sustainability and a successful scale up.

87. The pilot training sites will be selected from existing township hospitals instead of constructing new physical buildings. As most health school teachers lack experience in the recently reformed rural health system, all rural medicine teachers will be required to have in-service training and work placements at township hospitals' public health departments and village clinics. The key teacher trainers will have longer placements to allow for sufficient time for their own learning, but also to build relationships with the township hospitals, village clinics and surrounding communities. At the same time, they will apply the site selection framework (Table) to assess the quality of rural healthcare facilities and services, and then select a minimum of two township hospitals with the best evaluation to be the pilot rural health training bases.

88. Rural health practitioners within these selected pilot sites will then receive training in pedagogy, public health and other necessary competencies conducted by key teacher trainers prior to, during and after the rural medicine students' practicum placements. It is expected that some practical learning activities for students will occur outside of the classroom within the rural health system, which will primarily be led by the key teacher trainers. Examples of these activities include activities in health education, health promotion, community participation and mobilization. The stakeholders have agreed that nursing students should have observerships in rural health systems as such rotations will enrich their learning and give them an opportunity to experience

different aspects of health and rural healthcare. The key teacher trainers will also develop a curriculum specifically for nursing students and facilitate interactive and engaging learning activities that highlight the unique characteristics of rural health systems that are relevant to nurses.

B. PROJECT SUB-COMPONENTS AND ACTIVITIES

89. The pilot sub-components and activities include the following:

a) Designate and retain key teacher trainers;
b) Capacity building of core teacher trainers based on the rural health core competency framework
c) Develop rural medicine practicum curriculum
d) Select pilot rural health training bases
e) Develop rural health mentor training curriculum and conduct rural health mentor training
f) Supervise, monitor and refine rural health student practicum
g) Monitor and evaluate pilot training bases for quality assurance and improvement
h) Institutionalize model based on pilot results
i) Disseminate pilot model and results

1. Designate and retain key teacher trainers

90. From 2011 to 2012, the number of rural medical students more than doubled from 156 to 340 yet the number of rural medical teachers remained unchanged. There is a need for the health school to recruit more rural medicine teachers to meet the teaching demands. The new teachers should preferably have public health experience to diversify the existing skillset of the teachers. The health school recognizes the need and has agreed to recruit more rural medicine teachers. Teacher recruitment is beyond the scope of this project thus this will not be funded by the project.

91. There will be a minimum of two rural medicine core teacher trainers who will be selected or employed by the health school based on their motivation, former work experience and performance, ability to learn, communication skills, leadership abilities and initiative. The core teacher trainers may be chosen from current or newly employed rural medicine teachers. During the project, the school will ensure that the core teachers have reduced teaching hours and protected time to take part in their own training and capacity building, pilot project planning, implementation and directing. For example, it is recommended that they attend all the in-service training for public health department staff at township hospitals (such as those offered by CDC). They will act as the school's representatives to inform the rest of the rural medicine teachers of the latest developments, knowledge and skills in public health. Thus reduced classroom teaching responsibility will enable the core teacher trainers to be available to attend public health training.

92. The core teacher trainers should have a good understanding of the innovative arrangements of this new role needing to be based outside of the health school. They should have the commitment to work at the

health school for the entire project duration as they play a pivotal role in the pilot planning and implementation. To reduce the chances of project disruption, it is therefore recommended that there should be at least two core teacher trainers in case one of them is unable to fulfill the role prior to project completion. Additionally, having more than one core teacher trainer will enable the team to provide support to each other. There can be mechanisms to retain the core teacher trainers during and after the project. An example would be to have an agreement with the trainers to remain until they have trained another trainer who is sufficiently competent to replace original core trainer who is leaving. The health school may consider other mechanisms to improve core trainer retention and to reduce trainer turnover.

93. The rural medicine core teacher trainers should have a clear understanding of their role and function in the pilot project:

a) Lead other rural medicine teachers in developing a competency-based rural health curriculum for the students' practicum;
b) Lead rural medicine providers at township hospitals in developing a competency-based training curriculum for the providers to become student mentors;
c) Provide teacher training to rural medicine mentors from the selected pilot sites; and provide public health training to rural medicine teachers. Other rural health practitioners (such as village doctors) may be included if necessary;
d) Apply the pilot site selection framework to assess the quality of rural healthcare facilities and services, then select at least two central township hospitals with the best evaluation to be the pilot rural health training bases;
e) Provide on-going and timely support to rural medicine mentors prior to, during and after their students' practicum; provide support and facilitate student assessments and the teaching of public health competencies for the health students and nursing students; that these activities will require the core trainer to regularly visit the rural health training sites in township hospitals and village clinics;
f) Supervise students' practicum rotation and assess their quality of learning. Findings from the assessment will feedback into determining the training needs and gaps of the rural medicine mentors thereby improving students' practicum learning;
g) Identify learning needs, demands and gaps of the students and mentors; identify strengths and weaknesses of the student practicum curriculum and mentor training curriculum; identify strengths and weaknesses of organizational and institutional arrangements of the practicum to improve and strengthen the pilot for future scale-up;

2. Capacity building of core teacher trainers based on the core competency framework

94. The core trainers will receive training from project consultants in public health, curriculum development and teaching methodology during the initial phase of the project to enhance their pedagogic capacity and competencies in public health. The core teachers should attend all the

relevant public health training provided by local or national agencies (such as CDC, medical colleges, other public health experts) as part of regular in-service training for health providers.

95. Through the curriculum development component of the overall project, core trainers will learn to define and determine the level of each core competency in the competency framework (ANNEXES AND TABLES

96. Annex).

97. The project consultants for the pilot rural health training bases component will determine and conduct training program specifically for enhancing the core teachers' public health competencies. With the core teachers' participation, the consultants will perform a demands and needs analysis in order to identify the specific gaps and corresponding training required for them to fulfill their roles and functions within the pilot (paragraph 93 above). Having had this experience in determining core competencies and analyses, the core teachers can then do the same for their students and rural health mentors, thus able to develop the corresponding curricula. Some health education specific and public health specific competency-based curriculum development guidelines and tools have been identified and are recommended to be used specifically for the pilot rural health training bases.[149]

3. Rural Public Health Training

98. All rural medicine teachers must have regular in-service training in the form of work placements at the public health department of the township hospitals and village clinics to gain sufficient insight and understanding of their students' future work demands. This will minimize the chance that the teachers become disconnected and detached from the rural health services and practices. Core teacher trainers should attend all in-service training (such as those offered by CDC) targeted for village doctors and public health department staff at township hospitals to be kept up-to-date on the relevant public health situation and issues. The core teachers should have less classroom teaching requirement allowing them to attend public health training sessions that can have unpredictable schedules. The core teachers will act as representatives to inform the rest of the rural medicine teachers of the latest developments, knowledge and skills in public health. Other potential partnerships with external institutions or agencies for public health capacity enhancement can be found in Table .

99. The '**Public Health Practices and Sciences**' domain includes core competencies[150] in:

[149] References and excerpts of these guidelines and tools are in Annex to Annex .
[150] Action verbs such as 'understand', 'master', 'perform' etc are deliberately removed from the competency framework as these differ depending on who the learn is (student, health school teacher, core teacher trainer, or rural health provider). (Annex 3: Competency-To-Curriculum Toolkit)

a) Health education: health prevention; treatment counseling; health promotion and maintenance; conveying appropriate information to different audience;
b) Health promotion: promoting physical activity and healthy behavior;
c) Disease and injury prevention: vaccination programs; tobacco control and smoking cessation;
d) Surveillance and assessment of population health and wellbeing: national health record; environmental health; nutrition and health; food safety; water and sanitation; occupational health; infectious disease control and prevention; collect, store, retrieve and use accurate and appropriate information;
e) Health-related behavioral and social sciences: how behavioral, social and cultural factors relate to and determine health;
f) Biostatistics;
g) Rural Health system: its structure, organization and functions; financing and health insurance;
h) Rural and remote context of health and healthcare: rural epidemiology and disease burden; healthcare delivery and practices unique to rural and remote areas such as (i) service delivery methods and practices appropriate to rural context such as outreach services and telemedicine, (ii) factors affecting access (geographical, cultural, social, economic), (iii) being a rural health practitioner living and working within small communities, professional isolation, professional boundaries and confidentiality, (iv) referral networks of community and regional resources, services and support.

100. The 'Attitudes and Communication' domain includes core competencies in:

a) Cultural sensitivity and safety: the differences in culture, education, occupation, health beliefs and practices between different ethnic groups, and between the rural health providers and patients; culturally safe environments that can improve the acceptability and utilization of health services;
b) Client involvement: client-centered partnerships and approaches;
c) Community engagement, participation & mobilization: strategies and methods of community mobilization especially in health education and promotion;
d) Communication Skills: non-verbal, verbal, listening and written skills
e) Inclusiveness and equity: attitudes and practices that include people of all ages, genders, cultures, ethnicities, abilities, health status, education etc.

101. The '**Professionalism'** domain includes core competencies in:

a) Self-care: bio-psycho-social wellbeing; maintain work-life balance;
b) Resources planning and management: financial resources; human resources; other resources;
c) Health project planning and management;
d) Leadership: build capacity of others, improve performance and quality;

e) Information management: computer literacy; local information management and statistical systems; electronic resources and technologies to support services;
f) Inter-professional collaboration & teamwork: Multi-disciplinary, trans-disciplinary and inter-professional practice; roles, responsibilities and competencies of self and of others;
g) Professional networks, partnerships and integration: health services, community organizations, others;
h) Self-development, life-long learning: self-directed learning in acquiring new knowledge and skills; reflective practice; seek supervision, feedback, support when needed;
i) Provider-client relationship (Doctor-patient relationship): Professional attitudes and behavior.

102. The '**Ethical Practices'** domain includes core competencies in:

a) Legal and ethical practice: Medical Malpractice; Practitioner Licensing and credentialing; Patient safety; Equipment and environment safety;
b) Professional standards and competencies: Code of conduct; Adherence to standards; Infection control procedures; Documentation of medical notes and records;
c) Consent and confidentiality: Patient rights and dignity;
d) Policy and law: Local, municipal, provincial, national policies and procedures.

103. The '**Clinical Practice**' domain includes core competencies in:

a) Client participation and education
b) Evidence Based Clinical Practice
c) Common & urgent primary care conditions: Elderly Care; Maternal and Child health; Chronic disease management; Basic first aid and wound care; Family planning; Mental illness; Rehabilitation;
d) Rational prescribing: Safe effective prescribing[151];
e) Discharge planning: implications of discharging patients to a rural setting; available community and regional services and support;
f) Chinese and ethnic medicine.

4. Teacher training

104. Core teachers will receive pedagogic training and curriculum development training from the other components of the project. Curriculum development and teacher training components will enable core teachers to perform demands and needs analysis of their learners (rural medicine students, rural medicine teachers and rural health practitioners) thereby able to develop and refine the training curriculum for the different learners.

105. The '**Teaching and supervising**' domain includes core competencies in:

[151] National Prescribing Centre (NPC), *A Single Competency Framework for all Prescribers* (United Kingdom: National Institute for Health and Clinical Excellence (NICE),[2012]).

a. Teaching methods: learner-centered teaching, variety of teaching formats to suit the learning objectives;
b. Learner's needs assessment;
c. Curriculum innovation and enhancement: Theory-practice integration;
d. Learner assessment and evaluation: Processes & Outcomes; Formative evaluation; knowledge, understanding and basic application of the scientific bases of public health, basic clinical medicine and pedagogy; ability to apply relevant knowledge, skills and attitudes to the practice of public health, basic clinical medicine and pedagogy;
e. Practicum Supervision, mentoring and monitoring;
f. Developing others, peer education: Supervise, mentor and teach others; for example to enable graduates to have competence and skills to supervise future students.

5. Develop rural medicine practicum curriculum and rural health mentor training curriculum

106. Having received training in pedagogy, curriculum development and public health in the early project phase, core teacher trainers will have the necessary competencies, skills, experience and insight to develop a competency based curriculum for the students' practicum at the rural health system, and also a competency based curriculum for training the rural health providers to become students' mentors.

107. The core teachers will conduct practicum mentor training program for rural health workers with the supervision and assistance from the pilot project consultants.

6. Select pilot rural health training bases

108. The pilot training sites will be evaluated and selected from the 40 central township hospitals surrounding Nanning. The core teacher trainers will apply the "Training Base Assessment and Selection Framework" (Table) to assess and score the quality of rural healthcare facilities and services. The assessment and selection process will be facilitated by the pilot project consultant. It is not expected that all 40 central township hospitals will be assessed given the limited time and resources, but it is recommended that the core teachers evaluate a minimum of 5-10 central township hospitals. These can be selected initially by geographical proximity or by the degree of interest of the central township hospitals to take part in the pilot project. The township hospitals with the better evaluations will be selected as pilot rural health training bases. It is important also to take into account of other determining factors such as the hospital director's and staff's enthusiasm and motivation to be training sites; the core teachers working relationships with these hospitals and village clinics; geographical proximity etc. The project consultants will assist the core teacher trainers to devise a scoring system based on the selection framework.

109. It is recommended that the core teacher trainers should select at least one site each to have a minimum of two pilot sites in total. No more than two hospitals per teacher should be selected to keep the pilot project manageable and affordable.

7. Monitor and evaluate pilot training bases for quality assurance and improvement

110. After teacher training, the core teachers will be able to supervise, monitor and refine rural health student practicum. They will also be able to assess the quality of rural health provider's mentoring skills and competencies to determine the training curriculum to improve the quality if necessary. Some examples of accreditation and qualification processes for the rural health providers to become mentors include honorary teaching titles awarded by the health school. The mentors and core teacher trainers should be evaluated by a selection of different formats such as 360 evaluations; participatory appraisals; mentors evaluating teachers and vice versa; student evaluations of both.

111. The honorary teaching titles can be seen as incentives for the rural health practitioners to become rural health mentors. Other incentives may also include other titles that are voted by students (such as 'Best Mentor Award', 'Excellent Teacher Award', 'Exceptional Role Model Award', 'Most Innovative Trainer Award' etc.) and educational opportunities or courses that will further enhance the mentors' teaching capacity or rural health practices.

112. The overall monitoring and evaluation framework of the pilot model of establishing rural health training bases includes the following assessment methods and indicators:

    a. quality of practicum and rural health provider training curricula documents;
    b. quality and relevance of teaching materials and learning activities;
    c. students', teachers' and rural health mentors' degree of satisfaction of the practicum;
    d. quality of assignments of students who went to pilot sites compared with those who did not;
    e. competency assessments of students placed in pilot sites compared with those who did not;
    f. competency assessments of mentors from pilot training bases compared with those from non-pilot sites;
    g. training bases' assessment (change in score) based on the selection framework (Table) pre- and post-pilot establishment;
    h. number of township hospitals selected as pilot training base;
    i. number of rural health providers received training conducted by core teacher trainer;
    j. number of rural health providers qualified or accredited as practicum mentors;
    k. comparison of pilot to non-pilot student test scores (students who rotated in pilot sites versus those who did not);

l. compare pilot to non-pilot graduate's passing rates of the Assistant Practicing Physician certification examination;
m. compare apprenticeship or internship work assessment of pilot to non-pilot graduates;
n. compare work satisfaction and confidence levels of pilot to non-pilot graduates;
o. compare unemployment rate of pilot to non-pilot graduates;
p. compare rate of overall satisfaction with rural health services among rural residents pre- and post-pilot establishment; and pilot and non-pilot sites; the evidence of pilot experiences expanded or adopted outside of project area

8. Institutionalize model based on pilot results

113. Establish guidelines and methods to institutionalize and scale-up the pilot project. Based on the results of the monitoring and evaluation, the pilot can be institutionalized and scaled-up including but not limited to the following ways: (i) the health school to secure sustainable funding to employ teachers to be core teacher trainers and maintain such a position; (ii) the local health bureau or education bureau to provide the funding for the core teacher trainer position and make recommendations to other health schools to create similar positions where the core teacher trainer is based in practicum sites; (iii) the core teacher trainers to train other health school teachers to become new core teacher trainers; (iv) the core teachers to spend less time at initial pilot sites and go to other central township hospitals to establish new training bases; (v) the pilot model to be replicated by other health school practicum training such as nursing, dentistry etc.

9. Disseminate pilot model and results

114. The pilot project consultants will prepare materials (documents, presentations etc.) for dissemination of good practices of the pilot training bases. The materials should be disseminated using methods that can reach a wide audience locally, nationally, regionally and internationally.

C. INVESTMENT ESTIMATION

115. Procurement inventory includes general bedside medical equipment for demonstrative and teaching purposes such as multifunctional cardio-pulmonary resuscitation (CPR) simulators, 12-lead electrocardiograph machines, manual and digital sphygmomanometers and desktop computers (Table). Other equipment such as projector, portable screen, laptops with DVD-ROM and digital video camcorders can be used for field activities such as health education, film making for health promotion activities.

116. Investments required for the pilot are mainly for capacity enhancement of core teacher trainers and rural health mentors by external project consultants. These enhancement include training in pedagogy of core teacher trainers; training in public health of core teacher trainers which may involve national or international site visit(s); curriculum development for the students' practicum, curriculum development for

training the rural health mentors; basic equipment procurement for practicum sites.

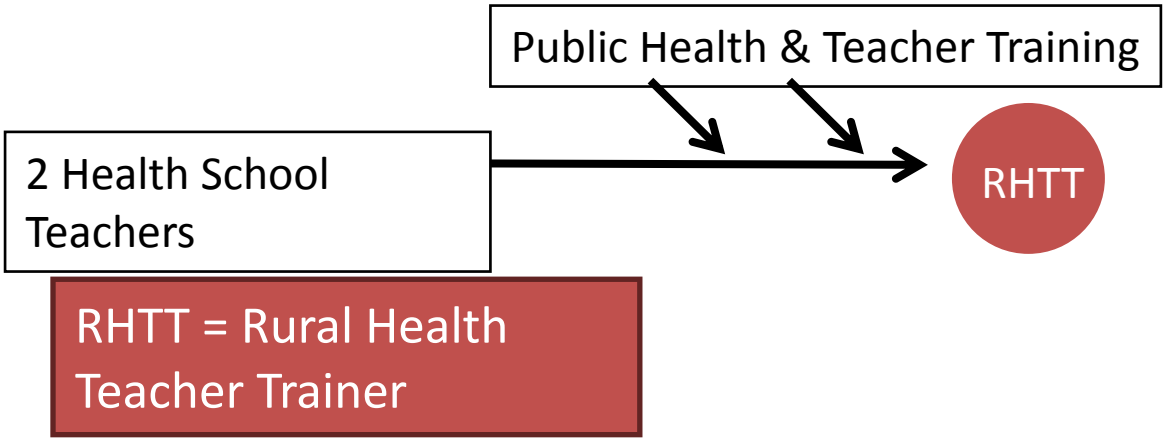
117. The design of the pilot has been aimed to be sustainable and with affordable running cost after the initial investment in capacity building. It is envisaged that once the core teacher trainer becomes a competent trainer, they can in turn train other health school teachers and rural medicine mentors which eliminates the need to hire external project consultants. However, it is important for the trainers to maintain up-to-date and thus funding for their continued in-service training in public health, pedagogy and curriculum development will be required. This funding can be supported by the project initially while the health school secures other sources of funding to sustain these vital activities for the rural medicine teachers.

D. IMPLEMENTATION ROADMAP FOR ESTABLISHING RURAL HEALTH TRAINING BASES

118. The pilot rural health training bases' target trainees are primarily rural medicine students from the health school. The training bases will also provide all nursing students with exposure to rural health through observerships. Rural health students will gain public health knowledge, skills and experience at the selected central township hospitals.

119. A minimum of two rural medicine core teacher trainers designated to take part in pilot project planning, implementation and directing. The core trainers will receive training in curriculum development and teaching methodology during the initial phase of the project to enhance their pedagogic capacity. They will also receive public health technical training offered by CDC or other public health institutions to improve their knowledge and skills in public health. Having received training in teaching methods and public health, the core teacher trainers will have enhanced pedagogic capacity and public health competencies.

Figure 2. Selected Rural Medicine Teachers becoming Core Teacher Trainer



120. The core trainers will lead other health school teachers in rural health practicum curriculum development. The core trainers will also develop a rural health provider training curriculum and train the practitioners in terms of public health and teaching pedagogy (student assessment,

evaluate quality of teaching and learning in the training sites). The core trainers should primarily be based in the rural healthcare facilities for extended work placements to familiarize themselves with the current rural health system and reforms. The core trainers will also visit a number of central township hospitals to assess and grade the quality of hospital, the hospital staff and health services offered. It is expected that the site selection will be finalized by the end of year 2.

121. Rural health teacher trainers provide on-going support to rural health mentors during students' practicum, facilitate student assessments and teaching of public health competencies. They supervise students' practicum and assess the students' quality of learning at the rural health training sites to provide necessary training and support to the mentors and students to improve the practicum learning. This is considered the establishment of the pilot which is expected by the end of project year 3.

Figure 3. Pilot site selected and practitioners from these sites receive training from core teacher trainers

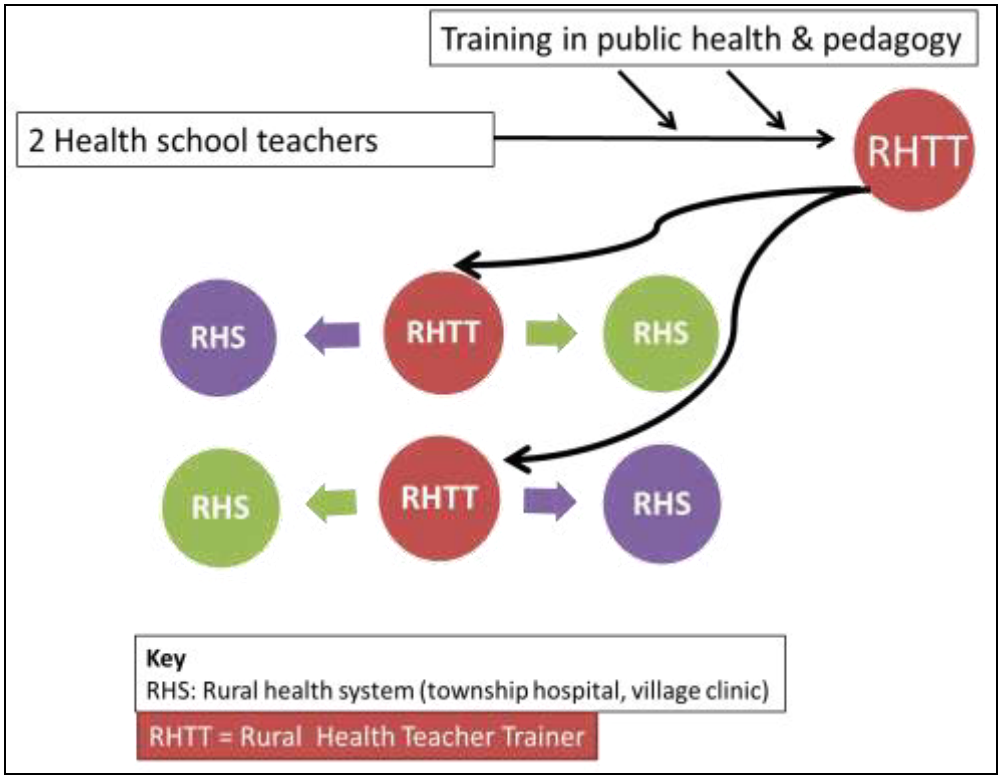
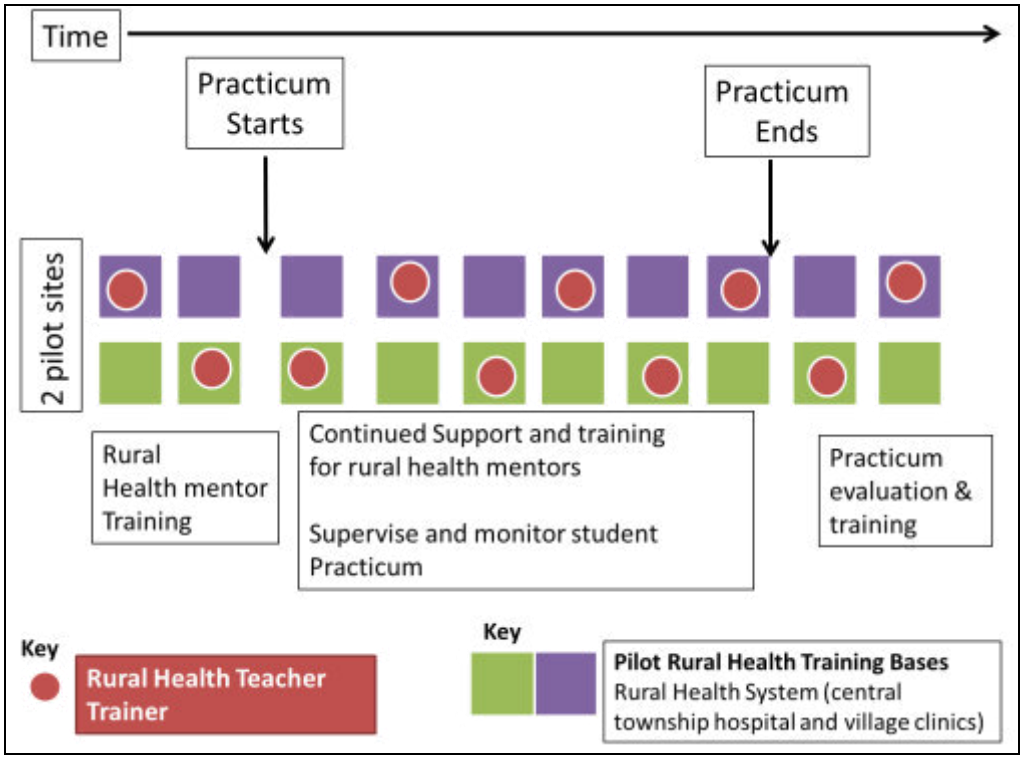
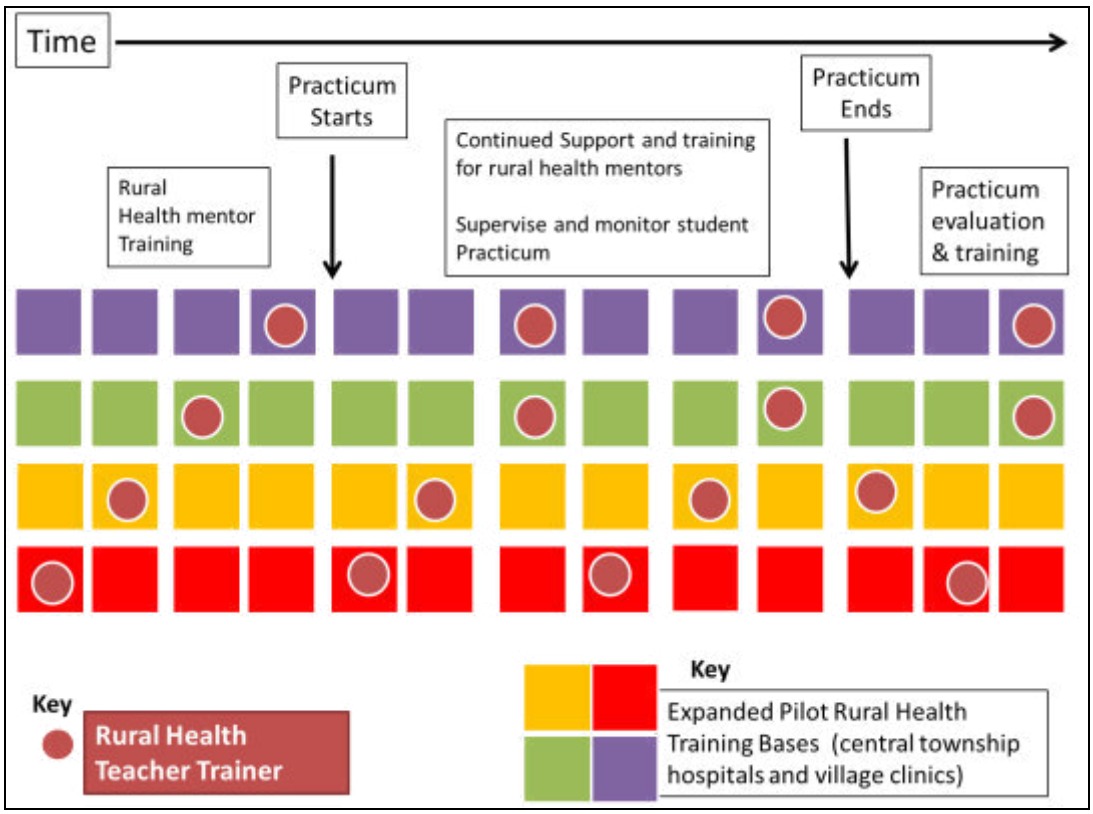


Figure 4. Teacher trainer based in pilot training bases prior to, during and after students' practicum



122. Pilot scale-up and replication can be done in several ways: (i) the health school should secure sustainable funding to employ teachers to be core teacher trainers and maintain such a position; (ii) the local health bureau or education bureau can provide the funding for the core teacher trainer position and make recommendations to other health schools to create similar positions where the core teacher trainer is based in practicum sites; (iii) the core teacher trainers can train other health school teachers to become new core teacher trainers; (iv) the core teachers can spend less time at initial pilot sites and move to other central township hospitals to establish new training bases; (v) the pilot model can be replicated across to other health school practicums in nursing, dentistry etc.

Figure 5. An example of pilot scale-up and replication to other rural health sites



ANNEXES AND TABLES

Annex 1. Core Competency Framework for Rural Health Trainers and Trainees[152]

Key:
I. Domain (6)
1. Core Competency Area (38)
    - Core Competency Components
        - Notes or examples

I. Public Health Practices and Sciences

1. Health education
    - Prevention, treatment, health promotion and maintenance
    - Appropriate information to different audience

2. Health promotion
    - Physical activity, Health behavior

3. Disease and injury prevention
    - Vaccination program
    - Tobacco control

4. Surveillance and assessment of population health and wellbeing
    - Health records
    - Environmental Health
    - Nutrition and health, food safety
    - Water and sanitation
    - Occupational Health
    - Infectious disease control and prevention
    - Collect, store, retrieve and use accurate and appropriate information

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[152] Competency Framework developed from these sources: TVET project stakeholders' and beneficiaries' perceived needs; Public Health Agency of Canada, "Core Competencies for Public Health in Canada," http://www.phac-aspc.gc.ca/php-psp/ccph-cesp/stmts-enon-eng.php; J. G. Calhoun et al., "Development of a Core Competency Model for the Master of Public Health Degree," *American Journal of Public Health* 98, no. 9 (Sep, 2008), 1598-1607.; Western Australian Country Health Service, *Rural and Remote Allied Health Competencies - Allied Health Assistants*,[2009]).; Western Australian Country Health Service, *Rural and Remote Allied Health Competencies - Clinical Training (Student)*,[2011]).; Faculty of Public Health, "Key Competency Areas," http://www.fph.org.uk/learning_outcomes_framework; Association for Prevention Teaching and Research (APTR) and Center for Health Policy, Columbia University School of Nursing, *Competency-to-Curriculum Toolkit*, Revised Edition March 2008 ed. (United States: , 2008).; The Council on Linkages Between Academia and Public Health Practice, *Core Competencies for Public Health Professionals* (United States: ,[2010]). http://www.phf.org/programs/corecompetencies.; . *Assistant Practicing Physician Certificate Examination Syllabus*,[2012]).; Guangxi Zhuang Autonomous Region Health Department, *Guangxi Zhuang Autonomous Region Plan for Training (Secondary School) Rural Assistant Practicing Physicians in Remote and Poor Areas (2011-2015)* (China: ,[2011]).

5. Health-related behavioral and social sciences
    - Behavioral, social and cultural factors related to health

6. Biostatistics

7. Rural Health system
    - Structure, organization and function
    - Financing and Health Insurance

8. Rural and remote context of health and healthcare
    - Rural epidemiology
    - Rural healthcare delivery and practice
        - Service delivery methods and practices appropriate to local context such as outreach services, telemedicine
        - Factors affecting access (geographical, cultural, social, economic)
        - Being a rural health practitioner (living and working within small communities, professional isolation, professional boundaries and confidentiality)
        - Referral to available community and regional resources, services and support

II. Attitudes and Communication

9. Cultural sensitivity and safety

10. Client involvement
    - Client-centered partnerships and approaches

11. Community engagement, participation & mobilization

12. Communication Skills
    - Non-verbal, verbal, listening and written

13. Inclusiveness and equity
    - Include people of all ages, genders, cultures, ethnicities, abilities, health status, education etc

III. Professionalism

14. Self-care
    - Bio-psycho-social wellbeing, maintain work-life balance

15. Resources planning and management
    - Financial
    - Human resources
    - Other Resources

16. Health project planning and management

17. Leadership
    - Build capacity, improve performance and quality

18. Information management
    - Computer literacy
    - local information management and statistical systems
    - electronic resources and technologies to support services
        - municipal, provincial, national and international

19. Inter-professional collaboration & teamwork
    - Multi-disciplinary, trans-disciplinary and inter-professional practice
    - Role, responsibilities and competencies of self and of others

20. Professional networks, partnerships and integration
    - Health services, community organizations, others

21. Self-development, life-long learning
    - Self-directed learning in acquiring new knowledge and skills
    - Reflective practice
    - Seek supervision, feedback, support when needed

22. Provider-client relationship (Doctor-patient relationship)
    - Professional attitudes and behavior

IV. Ethical Practices

23. Legal and ethical practice
    - Medical Malpractice
    - Practitioner Licensing and credentialing
    - Patient safety
    - Equipment and environment safety

24. Professional standards and competencies
    - Code of conduct
    - Adherence to standards
    - Infection control procedures
    - Documentation of medical notes and records

25. Consent and confidentiality
    - Patient rights and dignity

26. Policy and law
    - Local, municipal, provincial, national policies and procedures

V. Clinical Practice

27. Client participation and education

28. Evidence Based Clinical Practice

29. Common & urgent primary care conditions
    - Elderly Care
    - Maternal and Child health
    - Chronic disease management
    - Basic first aid and wound care

- Family planning
- Mental illness
- Rehabilitation

30. Rational prescribing
    - Safe effective prescribing[153]

31. Discharge planning
    - implications of discharging patients to a rural setting
    - available community and regional services and support

32. Chinese and ethnic medicine

VI. Teaching and Supervision

33. Teaching methods
    - Learner centered teaching, problem-based learning

34. Learner's needs assessment

35. Curriculum innovation and enhancement
    - Theory-practice integration

36. Learner assessment and evaluation
    - Processes & Outcomes
    - Formative evaluation
    - Knowledge, understanding and basic application of the scientific bases of public health, basic clinical medicine and pedagogy
    - Ability to apply relevant knowledge, skills and attitudes to the practice of public health, basic clinical medicine and pedagogy

37. Practicum Supervision, mentoring and monitoring

38. Developing others, peer education
    - Supervise, mentor and teach others

[153] National Prescribing Centre (NPC), *A Single Competency Framework for all Prescribers*

Annex 2. Rural and Remote Allied Health Competencies - Clinical Training (Student)[154]

The tool may be used during placements by students and supervisors independently, and/or collaboratively to:

- Clarify placement expectations;
- Identify learning opportunities to improve skills;
- Prioritise skills and competencies for growth and development; and
- Critically reflect on student learning and development during placements.

The framework may be used prior to the commencement of placements by clinicians to support placement planning. It may also be included in student pre-placement preparation. The tool provides students with an understanding of the additional skills and learning outcomes that are specific to rural placements.

Regardless of how the framework is employed, use of the tool involves five steps:

Step One **Identify relevant competency areas** (not all will be relevant).

Step Two **Assess competence in the relevance areas**

Consider level of proficiency and skill in the specific competencies relevant to the current work role. Select the descriptor that most reflects ability in this competency.		Highly Developed	Refining	Developing	Emergent
EMERGENT	A skill or practice in which the student shows limited confidence and competence	☐	☐	☐	☒
DEVELOPING	A skill or practice in which the student shows some knowledge but needs continued development	☐	☐	☒	☐
REFINING	A skill or practice in which the student is confident and competent	☐	☒	☐	☐
HIGHLY DEVELOPED	A skill or practice in which the student is very confident in and at which they excel	☒	☐	☐	☐

Step Three **Identify priority learning areas** and document in the Summary of Priority Competencies

Step Four **Where possible integrate learning opportunities that support priority competencies into clinical placement** and document in Learning and Development Plan

Step Five **Reflect and review on progress when appropriate**

[154] Western Australian Country Health Service, *Rural and Remote Allied Health Competencies - Clinical Training (Student)*

Rural and Remote Allied Health Competencies

Service Delivery

	Placement Relevance	Emergent	Developing	Refining	Highly Developed
Philosophies of Practice					
• Understands contemporary principles of practice in service delivery, including:					
○ Social determinants of health	☐	☐	☐	☐	☐
○ Health promotion	☐	☐	☐	☐	☐
○ Primary health care	☐	☐	☐	☐	☐
○ Client and family centred practice	☐	☐	☐	☐	☐
○ Evidence-based practice	☐	☐	☐	☐	☐
○ Culturally appropriate practice	☐	☐	☐	☐	☐
○ Community development	☐	☐	☐	☐	☐
○ Self management	☐	☐	☐	☐	☐
○ Other _____	☐	☐	☐	☐	☐
Service Planning					
• Participates in the development of placement activities and projects	☐	☐	☐	☐	☐
• Understands how health services are planned (within disciplines, departments and/or local health services)	☐	☐	☐	☐	☐
• Understands the role of rural AHPs in service planning	☐	☐	☐	☐	☐
Service Delivery					
• Actively participates in the delivery of services	☐	☐	☐	☐	☐
• Understands local and regional healthcare delivery	☐	☐	☐	☐	☐
• Understands the service delivery methodologies appropriate to local context, including:					
○ Visiting and outreach services	☐	☐	☐	☐	☐
○ Allied health assistants (AHAs)	☐	☐	☐	☐	☐
○ Telehealth	☐	☐	☐	☐	☐
○ Other _____	☐	☐	☐	☐	☐
Service Partnerships and Integration					
• Understands local networks and service partnerships (including health service, community, education and other)	☐	☐	☐	☐	☐
• Works collaboratively within existing networks in placement activities and projects	☐	☐	☐	☐	☐
Service Evaluation and Research					
• Understands the principles of evaluation and research in practice	☐	☐	☐	☐	☐
• Participates in the evaluation of placement activities and projects	☐	☐	☐	☐	☐

Learning and Development Plan

Name		**Supervisor Name**	
Placement Start Date		**Placement Completion Date**	
Review Date		**Review Date**	

Competency Area Identified	*Learning Goals (specific learning needs – skill, knowledge, attitude, behaviour)*	*Methods (strategies and resources)*	*Evidence of learning*	*Timeframe*

Annex 3: Competency-To-Curriculum Toolkit [155]

From competency framework to develop "Competency statements [to] describe 1) an acceptable level of performance, 2) the skill needed to perform the work, and 3) the actual conditions under which the work is executed today. Competency statements written with the workplace in mind…
12. Competencies need to be routinely updated as science evolves, disease and injury morbidity and mortality trends change, or communities express new expectations of public health practice.

Competency statements: Broadly defined, competencies are actions which are observable in the execution of one's work. In other words, competencies are applied skills and knowledge that enable people to perform work. Any competency statement should consist of the following elements:
• action verb (observable or measurable performance of a worker)
• content (subject matter, type of performance, specific task)
• context (limitations or conditions of work environment)

[155] Association for Prevention Teaching and Research (APTR) and Center for Health Policy, Columbia University School of Nursing, *Competency-to-Curriculum Toolkit*

In order to accomplish these steps, the following questions must be answered in order:

1. What is the desired outcome of the performance?
2. What competencies are needed by public health workers to bring about these activities?
3. What are the indicators (qualitative and quantitative; behavioral; measurable) that define each competency?
4. What are the specific Knowledge, Skills, and Abilities (KSA's) which must be learned to achieve each competency?
5. How can these KSA's fit into a comprehensive curriculum or set of courses?
6. What is the current educational level and learning style of the targeted public health worker group?
7. What are the most effective educational strategies and teaching methods (e.g., case study, demonstration, supervised field work) for workers to learn each identified KSA?
8. What instructional resources are already available or modifiable for use that address the competencies, or identified need?
9. How will learning or improved performance be measured?

The following pages explicitly describe a process for designing curricula from competencies, using examples that begin with a single competency statement. Two examples are provided, one in a leadership area and the other in emergency preparedness. The sequential steps are summarized in Table 2.

Table 2: Steps to a competency-based curriculum

Step 1	Select a competency
Step 2	Define key words or phrases within the competency statement
Step 3	Describe the target audience for the education program
Step 4	Sequentially separate all required sub-competencies
Step 5	Develop objectives (the desired learner behavior or state) for each sub-competency
Step 6	Relate an evaluation procedure to learning objectives
Step 7	Provide an example of relevant literature (content) from theory and practice for each sub-competency
Step 8	Plan specific classroom or other learning experiences that encompass all identified learning objectives
Step 9	Evaluate learning after completing training

Annex 4. Core Competencies for Public Health Professionals[156]

Tiers: The Core Competencies are presented in three tiers, which reflect stages of public health career development:

• *Tier 1 – Entry Level.* Tier 1 competencies apply to public health professionals who carry out the day-to-day tasks of public health organizations and are not in management positions. Responsibilities of these professionals may include basic data collection and analysis, fieldwork, program planning, outreach activities, programmatic support, and other organizational tasks.

• *Tier 2 – Program Management/Supervisory Level.* Tier 2 competencies apply to public health professionals with program management or supervisory responsibilities. Specific responsibilities of these professionals may include program development, implementation, and evaluation; establishing and maintaining community relations; managing timelines and work plans; and presenting arguments and recommendations on policy issues.

• *Tier 3 – Senior Management/Executive Level.* Tier 3 competencies apply to public health professionals at a senior management level and to leaders of public health organizations. These professionals typically have staff who report to them and may be responsible for the major programs or functions of an organization, setting a strategy and vision for the organization, and building the organization's culture.

Public Health Sciences Skills					
Tier 1		Tier 2		Tier 3	
6A1.	Describes the scientific foundation of the field of public health	6B1.	Discusses the scientific foundation of the field of public health	6C1.	Critiques the scientific foundation of the field of public health
6A2.	Identifies prominent events in the history of the public health profession	6B2.	Distinguishes prominent events in the history of the public health profession	6C2.	Explains lessons to be learned from prominent events in the history in comparison to the current events of the public health profession
6A3.	Relates public health science skills to the Core Public Health Functions and Ten Essential Services of Public Health	6B3.	Relates public health science skills to the Core Public Health Functions and Ten Essential Services of Public Health	6C3.	Incorporates the Core Public Health Functions and Ten Essential Services of Public Health into the practice of the public health sciences
6A4.	Identifies the basic public health sciences (including, but not limited to, biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral health sciences)	6B4.	Applies the basic public health sciences (including, but not limited to, biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral health sciences) to public health policies and programs	6C4.	Applies the basic public health sciences (including, but not limited to, biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral health sciences) to public health policies and programs
6A5.	Describes the scientific evidence related to a public health issue, concern, or intervention	6B5.	Conducts a comprehensive review of the scientific evidence related to a public health issue, concern, or intervention	6C5.	Integrates a review of the scientific evidence related to a public health issue, concern, or intervention into the practice of public health
6A6.	Retrieves scientific evidence from a variety of text and electronic sources	6B6.	Retrieves scientific evidence from a variety of text and electronic sources	6C6.	Synthesizes scientific evidence from a variety of text and electronic sources
6A7.	Discusses the limitations of research findings (e.g., limitations of data sources, importance of observations and interrelationships)	6B7.	Determines the limitations of research findings (e.g., limitations of data sources, importance of observations and interrelationships)	6C7.	Critiques the limitations of research findings (e.g., limitations of data sources, importance of observations and interrelationships)

[156] The Council on Linkages Between Academia and Public Health Practice, *Core Competencies for Public Health Professionals*

Annex 5. A Single Competency Framework for all Prescribers [157]

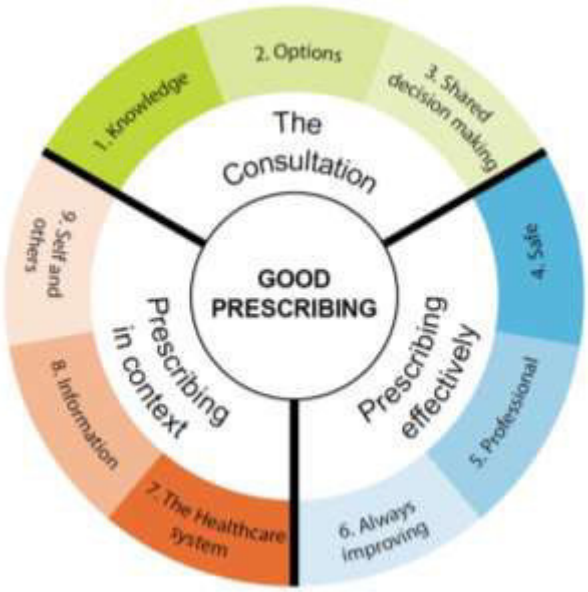
Uses of the framework

The prescribing competency framework can be used by any prescriber at any point in their career. It can also be used by regulators, education providers, professional organisations and specialist groups to inform standards, the development of education, and to inform guidance and advice.

The competency framework can be used by prescribers to help them remain competent in their scope of practice.

Uses of the framework include:

1. Inform education curricula and relevant accreditation of prescribing programmes.
2. Inform the design and delivery of education programmes, for example through validation of educational sessions (including rationale for need), and as a framework to structure learning and assessment.
3. Help healthcare professionals prepare to prescribe and provide the basis for on-going continuing education and development programmes, and revalidation processes. For example for use as a framework for a portfolio to demonstrate competency in prescribing.
4. Help prescribers identify strengths and areas for development through self-assessment (see Box 1), appraisal and as a way of structuring feedback from colleagues.
5. Provide professional organisations or specialist groups with a basis for the development of levels of prescribing competency, for example, from recently qualified prescriber through to advanced prescriber.
6. Stimulate discussions around prescribing competencies and multidisciplinary skill mix at an organisational level.
7. Inform organisational recruitment processes to help frame questions and benchmark candidates' prescribing experience.
8. Inform the development of organisational systems and processes that support safe effective prescribing, for example, local clinical governance frameworks.



Framework Design

[157] National Prescribing Centre (NPC), *A Single Competency Framework for all Prescribers*

Annex 6. Persons, institutions and organizations consulted

2013.03.05 Shuangqiao Central Township Hospital (Wuming County): Meetings and site visit
Mr Pan Zhenpeng, director of hospital
Mr Meng Daohe, deputy director of hospital
Mr Li Yongqiang, deputy director
Mr Li Zejian, deputy director of county health bureau
Mr Lin weipeng, head of medical unit, county health bureau
Mr Yang Lixing, deputy principal of NN health school
Ms Chen Yunying, deputy principal of NN health school
Mr Tan Yinguang, deputy director of NN health bureau
Ms Jiang Tingyu, PMO staff

2013.03.05 Pinglu Village Clinic (Shuangqiao Township, Wu Ming County): Interview and site visit
Mr Huang Tian, village doctor

2013.03.05 Wuming County Hospital: Meeting
Mr Pan Daiqing, Deputy director of the hospital
Ms Lu Wosong, Deputy director of the hospital
Mr Lu Ke, Mr Huang Meng, Ms Zeng Jinyan, Mr Zhao Yi, and Ms Xie Yanlan

2013.03.06 Nanning Health School: Meetings and focus group discussions
Deputy Principals:

Mr Yang Lixing	Ms Chen Yunying

Teachers & staff:

Ms Chen Yunying, deputy director	Mr Li Shaoming, Head of Teaching Division
Mr Zheng Changsheng, PMO	Mr Huang Junsheng, employment office
Ms Ge Yanping, student office	Mr Feng Zhaoli, teaching office
Ms Ma Ying, nursing program	Ms Sun Qian, nursing program
Ms Wang Guirong, nursing program	Mr Liu Qiwen, student office
Ms Meng Honglin, Dental program	Mr Huang Yigang, rural medicine
Mr Li Xin, teaching office	

Students:

Chen Rong, nursing (tertiary)	Mai Mei, nursing
Wei Yuanlin (Male), nursing	Yu Fengxue, nursing (senior high school start)
Chen Xuanjie, midwifery	Deng Wenling, Rehab
Huang Lei (Male), rural medicine	Duan Jinfang, rural medicine

2013.03.08 Nanning Health School: in-depth interview

Mr Feng Zhaoli, teaching office	Mr Huang Yigang, rural medicine

2013.03.12 Longdong village (Xiyan Township, Shanglin County)
Mr Wei Zhongjian, village doctor: In-depth Interview

Focus Group Discussion with village residents:

Mr. TONG Shengguang	Mr. Pan Lansheng	Ms. Tan Lianxin
Ms. Meng Meilin	Mr. Wei Zhongquan	Mr. Su Jiangui
Ms. Shi Huayin		

2013.03.14 Wutang Central Township Hospital, Xingning County: In-depth interviews, site visit and job shadow
Mr Li Weifeng, Director
Mr Huang Zicheng, Deputy Director
Mr Shi Keliang, Deputy Director of the Hospital, Head of the Public Health Department
Mr Lu Wei, Principle physician, In-patient Department
Mr Wei Jingchen, Principle physician, Out-patient Department

2013.03.14 Yingguang Village (Wutang Central Township Hospital, Xingning County)
Mr Tan Dasong, Village doctor: In-depth interview

2013.04.09 Validation meeting with stakeholders
Director of nursing and rural medicine of Nanning Health School, Representative of ShuangTang Central Township Hospital, Representative of Health and Finance Bureau; ADB PPTA team: Claude Bodart, Terry Clement, Katrina Tsang, Zhang Mingwu, Jiao Feng.
2013.04.16 Final validation meeting with stakeholders
Deputy-director of Nanning Health Bureau Tan Yinguang, Deputy-principal of Nanning Health School Chen Yunying, Director of rural medicine in Huang Yigang, Deputy-director of WuTang Central Township Hospital Shi Keliang, Katrina Tsang, Jiao Feng.

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GZAR Ministry of Health and Agriculture. 2010. *GZAR Village Clinic Standardized Construction (2010-2011) Implementation Plan*. GZAR, China.

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Table 1. Central and General Township Hospital Comparison

	一般乡镇卫生院 General Township Hospital	中心乡镇卫生院 Central Township Hospital
建筑面积 **Building Area** 住院部 Inpatient Department	≥400 m^2	≥600 m^2
门诊部 Outpatient Department	≥400 m^2	≥600 m^2
公共卫生服务部 Public Health Service Department	≥400 m^2	≥500 m^2
行政后勤保障科室 Administrative Logistical Support Departments	≥120 m^2	≥160 m^2
功能 **Functions**	提供预防保健、基本医疗、健康教育、康复等综合性服务；受县级卫生行政部门委托承担辖区内公共卫生管理；负责对村级卫生机构技术指导和对乡村医生培训等 Provide integrated services in health prevention and promotion, basic clinical care, health education and rehabilitation etc; entrusted by the county level health administrative departments with the management of public	是一定区域范围内的预防、保健、医疗技术指导中心，除具有一般卫生院的功能外，还承担协助县级卫生机构开展对区域范围内一般卫生院的技术指导等工作。 A guidance center for the area's services in prevention, health care, and medical technology. In addition to the functions of the general hospitals, also committed to support the county-level health institutions to provide technical

	health in the area; responsible for village-level health institutions technical guidance and training of rural doctors etc.	guidance to general hospitals within the region.
科室设置 **Departments**	内科、外科、妇科、产科、儿科、中医民族医科、配药室、处置室、被服物资储藏室、医生办公室、护士站、公共卫生服务部 Medicine, surgery, gynecology, obstetrics, pediatrics, TCM national medical dispensary, disposal room, clothing materials pantry, doctor's office, nurses station, public health service department	除了一般卫生院的科室设置之外，增设手术室、产房、中医民族医病房、五官/口腔科、理疗康复科 In addition to the departments of general hospitals set additional operating room, delivery room, the Chinese ethnic medicine ward, facial / dental, physiotherapy rehabilitation
设备要求 **Facility Standards**	为常见病多发病提供基本诊断的基本设备，包括影像系统的DR，超声系统的彩超和高性能的黑白B超和实验室诊断的全自动生化分析仪、全自动血球计数仪、全自动尿分析仪等 For common diseases frequently occurring basic diagnostic equipment, including imaging systems DR, ultrasound systems, ultrasound and high-performance black-and-white B-ultrasound and	

	laboratory diagnosis of automatic biochemical analyzer, automatic blood cell counting instrument, automatic urinalysis instrument	
人员配置 **Staffing**	卫生技术人员编制比例不得低于编制总数的90%，卫生技术人员必须具备法定执业资格 The health technology staffs is not less than 90% of the total staffs，Health technicians must have legal qualifications	每床至少配备0.7名卫生技术人员，至少有3名医师、5名护士和相应的药剂、检验、放射等卫生技术人员，至少有1名具有主治医师以上职称的医师。 Each bed is equipped with at least 0.7 health technology workers, at least three doctors, five nurses and pharmacy, laboratory, radiology and other health workers, at least one of the titles with the attending physician or physician
	临床医师与护士、医技、药剂人员按1:1.2:0.3:0.1的比例配备。 Clinicians and nurses, medical technicians, pharmacists proportion of 1:1.2:0.3:0.1	
床位数 **Hospital Beds**	住院床位总数20张至99张，一般不超过100张 20-99 of the total number of	

	hospital beds, generally not more than 100	

（《广西壮族自治区乡镇卫生院规范化创建标准（试行）》，广西壮族自治区卫生厅办公室，2012年4月1日）

Table 2. Nanning Health School Statistics – Students

学生Students			2011年	2012年
全校师生Total of teachers and students	学生总数Total of students		8554	8499
	教师总数Total of teachers		234	238
	师生比pupil ratio		1:37	1:36
农村医学专业 Rural medicine specialty	学生总数Total of students		156（1.82%）	340（4.00%）
	性别Sexuality		男生Male	106（67.95%）
	来自农村 From rural	女生Female	50（32.05%）	204（60.00%）
		143（91.67%）	284（83.53%）	136（40.00%）
	来自贫困家庭 From Poverty family		29（18.59%）	140（41.18%）
	毕业后担任乡村医生人数		59（37.82%）	146（42.94%）
	教师总数Total of teachers		13	13
	师生比pupil ratio		1:12	1:26

Table 3. Nanning Health School Statistics – Teachers

教师Teachers			2011年	2012年
教师总数Total number of teachers			234	238
年龄Age	<30		41（17.52%）	48（20.17%）
	31-40		70（29.91%）	71（29.83%）
	41-50		78（33.33%）	79（33.19%）
	51-60		45（19.23%）	40（16.81%）
职称Title	初级Junior		55（23.50%）	59（24.79%）
	中级Middle		130（55.56%）	124（52.10%）
	副高Associate senior		49（20.94%）	55（23.11%）
教育学历背景 Education background	大专及以下college and below		17（7.26%）	21（8.82%）
	大学本科Bachelor		168（71.79%）	164（68.91%）
	硕士研究生Master		49（20.94%）	53（22.27%）
教师类型Type of teachers	公共基础课教师Basic courses		57（24.36%）	59（24.79%）
	专业课和实习指导教师 Technical courses		177（75.64%）	179（75.21%）
		其中实习指导教师 Trainers among	27（11.54%）	27（11.34%）
	“双师型”教师“Double qualified”		158（67.52%）	158（66.39%）
农村医学专业 Rural medicine specialty	教师数total		13（5.56%）	13（5.46%）
	其中女教师数Female		3（1.28%）	3（1.26%）
	其中少数民族教师数Minority		7（2.99%）	7（2.94%）
	其中来自农村教师数 From rural		8（3.42%）	8（3.36%）

Table 4. Nanning Health School Graduates and Employment (2012)

	总人数（人）The total number of people	毕业情况Graduation situation		就业情况Employment situation	
		人数（人）The number of people	率（%）Rate(%)	人数（人）The number of people	率（%）Rate(%)
全校学生Total students	3814	3216	84.3	3080	96.0
护理专业The nursing profession	2329	2109	90.5	2038	96.6
卫生保健专业 Health care professionals				312	96.0
乡医（学历班）Rural doctors (academic classes)	40	40	100.0	40	100.0

注：卫生保健专业和乡医（学历班）毕业生就业主要都是到乡镇卫生院和村卫生室。
Note: Graduate students of health care professionals and rural doctors (academic classes) are mainly employment in rural township hospitals and village clinics.

Table 5. Equipment procurement for establishing pilot rural health training bases

Item	Description	Number of Units
1.	Multifunctional Cardio-Pulmonary Resuscitation (CPR) Simulator	2
2.	Defibrillator	2
3.	Electronic sphygmomanometer	10
4.	Manual sphygmomanometer	10
5.	12-lead Electrocardiograph machine (ECG)	2
6.	Desktop Computer	10
7.	Projector	2
8.	Portable Screen for projector	2
9.	Laptop with DVD-ROM	2
10.	Digital Video Camcorder	2

Table 6. Assessment Checklist of Potential scalability of pilot project [158]

Questions related to potential scalability	Yes (+)	No (–)	More information/ action needed
1 Is input about the project being sought from a range of stakeholders (e.g. policy-makers, programme managers, providers, NGOs, beneficiaries)?			
Are individuals from the future implementing agency involved in the design and implementation of the pilot?			
Does the project have mechanisms for building ownership in the future implementing organization?			
2 Does the innovation address a persistent health or service-delivery problem?			
Is the innovation based on sound evidence and preferable to alternative approaches?			
Given the financial and human-resource requirements, is the innovation feasible in the local settings where it is to be implemented?			
Is the innovation consistent with existing national health policies, plans and priorities?			
3 Is the project being designed in light of agreed-upon stakeholder expectations for where and to what extent interventions are to be scaled-up?			
4 Has the project identified and taken into consideration community, cultural and gender factors that might constrain or support implementation of the innovation?			
Have the norms, values and operational culture of the implementing agency been taken into account in the design of the project?			
Have the opportunities and constraints of the political, policy, health-sector and other institutional factors been considered in designing the project?			
5 Has the package of interventions been kept as simple as possible without jeopardizing outcomes?			
6 Is the innovation being tested in the variety of sociocultural and geographic settings where it will be scaled-up?			
Is the innovation being tested in the type of service-delivery points and institutional settings in which it will be scaled-up?			

[158] World Health Organization and ExpandNet, *Beginning with the End in Mind: Planning Pilot Projects and Other Programmatic Research for Successful Scaling Up*

Questions related to potential scalability	Yes (+)	No (–)	More information/ action needed
7 Does the innovation being tested require human and financial resources that can reasonably be expected to be available during scale-up?			
Will the financing of the innovation be sustainable?			
Does the health system currently have the capacity to implement the innovation? If not, are there plans to test ways to increase health-systems capacity?			
8 Are appropriate steps being taken to assess and document health outcomes as well as the process of implementation?			
9 Is there provision for early and continuous engagement with donors and technical partners to build a broad base of financial support for scale-up?			
10 Are there plans to advocate for changes in policies, regulations and other health-systems components needed to institutionalize the innovation?			
11 Does the project design include mechanisms to review progress and incorporate new learning into the implementation process?			
Is there a plan to share findings and insights from the pilot project during implementation?			
12 Is there a shared understanding among key stakeholders about the importance of having adequate evidence related to the feasibility and outcomes of the innovation prior to scaling up?			

Table 7. Potential rural health education and training partnerships

编号 Number	机构名称Institutions or Agencies	推荐理由 Strengths	Course or area of training
1	广西医科大学 Guangxi Medical University	高校师资力量较强；距离近，方便联系 Good teachers in university; geographical proximity to enable sustained partnership	健康教育Health Education 社会医学与社区卫生服务 Social Medicine & Community Health Service 公共卫生理念 Public Health Idea 初级卫生保健服务Primary Health Care Services
2	中国医科大学 (沈阳) China Medical University (Shenyang)	全国唯一的国家级乡村医生教育机构 The only national rural doctors education institution	乡村医生培训 Training of Village Doctors 基本公共卫生服务Basic Public Health Service 基层医疗卫生服务Primary Clinical Services
3	广西自治区卫生厅农卫处 Rural Health Management Office of Health Department in GZAR	地方最权威的政策法规解读 Interpretation of local authority policies and regulations	相关政策法规解读 The Interpretation of the Relevant Policies and Regulations
4	广西自治区和南宁市疾病预防控制中心 Center for Disease Prevention and Control in Nanning and Guangxi	距离近，方便联系；基本公共卫生服务指导 Guidance in public health practices, skills and sciences; geographical proximity to enable	基本公共卫生服务规范要求 Basic Public Health Services Specifications

		sustained partnership	
5	广西民族大学 Guangxi University for Nationalities	距离近，方便联系；民族文化敏感性 Ethnic culture sensitivity; geographical proximity to enable sustained partnership	民族文化敏感性 National Cultural Sensitivity
6	云南健康与发展研究会 Yunnan Health and Development Research Association（YHDRA）	一个有多年农村社区工作经验的非政府组织；参与性健康工作理念；社区健康发展和社区动员 An experienced NGO with extensive experience in working with rural communities, participatory approaches, community health development and community mobilization	社区健康工作理念和社区动员 Community Health Work Idea and Community Mobilization 参与性健康工作理念 Participatory Health Work Idea 民族文化敏感性 National Cultural Sensitivity
7	Global Health through Education, Training and Service (GHETS) http://www.ghets.org/content/programs/	Focusing on education institutions to increase the number of trained medical professionals in the workforce.	
8	Australian Rural Health Education Network http://www.arhen.org.au/	Experienced in providing and coordinating rural and remote	Organizational and logistical arrangements, management of training

		placements for health students across Australia	

Table 8. Training Base Assessment and Selection Framework[159]

	SCORE
Patient care and continuity of care	
The care provided to each patient is planned, revised when indicated by a change in the patient's condition, and documented in the patient record.	
Medications are monitored for patient adherence, clinical appropriateness and effectiveness, and adverse medication effects.	
There is a process to appropriately refer patients to other providers, other health care settings, or another organization to meet their continuing care needs.	
Patient rights and responsibilities	
The organization is responsible for developing and implementing processes that support patients' and families' rights during care.	
Care is considerate and respectful of the patient's personal values and beliefs.	
Care is respectful of the patient's need for privacy.	
Children, disabled individuals, the elderly, and other populations at risk receive appropriate protection	
Patient information is confidential.	
The organization supports patients' and families' rights to participate in the care process.	
Patients and families receive adequate information about the illness, proposed treatment(s), and care providers so that they can participate in care decisions.	
Patients and, when appropriate, families are informed of their responsibilities in the care process.	
All patients are informed about their rights and responsibilities in a manner they can understand.	
Patient Record and Information Flow	
Confidentiality, security, and integrity of data and information are maintained.	
Records and information are protected against, tampering, and unauthorized access or use.	
Patient and Family Education	
Patient education is focused on patient and, when appropriate, family participation in care decisions and care processes.	
The organization provides patient and family education related to treatment and services provided by the organization as well as the patient's immediate and ongoing health needs.	
Education methods incorporate the patient's and family's values and preferences and allow sufficient interaction among the patient, family, and staff for learning to occur	

[159] Adapted from "The Joint Commission - Ambulatory Care Standards."http://www.jointcommission.org/

Improvement in Quality and Patient Safety	
Clinical practice guidelines and clinical pathways and other evidence-based recommendations are used to guide patient assessment and treatment and reduce unwanted variation.	
Infection Control and Facility Safety	
The infection prevention and control program is based on current scientific knowledge, accepted practice guidelines, and applicable law and regulation.	
The organization identifies the procedures and processes associated with the risk of infection and implements strategies to reduce infection risk.	
The organization plans and implements a program to manage the physical environment to support safe patient care.	
The organization's facility is designed to provide accessible, efficient, and safe clinical care in a secure and supportive environment.	
The organization develops and implements a plan to eliminate smoking by staff and patients within the facility.	
The organization has a plan for the inventory, handling, storage, and use of hazardous materials and the control and disposal of hazardous materials and waste.	
Human Resource Management	
New staff orientation provides initial job training and assessment of capability to perform job responsibilities.	
Ongoing in-service or other education and training maintain and improve staff competence.	
The competence to carry out job responsibilities is continually assessed, demonstrated, maintained, and improved.	
Health professional training and education are guided by policies that ensure adequate supervision.	
COMMENTS & NOTES	

TA 8158-PRC: Project Preparatory Technical Assistance

COMPETENCY BASED CURRICULUM DEVELOPMENT

Author: Peter Hübner

CONTENT

LIST OF DIAGRAMS AND TABLES

LIST OF ACRONYMNS

ADB	Asian Development Bank
AFTA	ASEAN Free Trade Area
ASEAN	Association of Southeast Asian Nations
BOE	Bureau of Education
BOH	Bureau of Health
CBS	Competency Based Standards
CIVTE	Central Institute for Vocational Training and Education, Beijing
CPD	Continuing Professional Development
DMF	Design and Monitoring Framework
ERDP	Education Reform and Development Plan (2010–2020)
ETF	European Training Foundation
GAP	Gender Action Plan
GZAR	Guangxi Zhuang Autonomous Region
HRD	Human Resource Development
IAG-TVET	Inter-Agency Working Group on TVET Indicators
ILO	International Labour Organization
M&E	Monitoring and Evaluation
MHRSS	Ministry of Human Resources and Social Security
MOU	Memorandum of Understanding
NEB	Nanning Education Bureau
NHB	Nanning Health Bureau
NMG	Nanning Municipal Government
NNDRC	Nanning Municipal Government Development and Reform Committee
OECD	Organization for Economic Co-operation and Development
OST	Overseas Study Tours
PAM	Project Administration Manual
PMO	Project Management Office
PPP	Public Private Partnership
PPTA	Project Preparatory Technical Assistance
PRC	People's Republic of China
SEAMEO	Southeast Asian Ministers of Education Organization
SES	Socio-economic Status
SVS	Secondary Vocational Schools
TFYP	Twelfth Five-Year Plan (2011–2015)
TVC	Tertiary Vocational Colleges
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
WB	World Bank

ACKNOWLEDGEMENTS

The development of this technical report has drawn on a review of documents, interviews, published literature as cited, and data gathered, analyzed and summarized by the consultants of the PPTA team, and data supplied by the PMO. PPTA team derived and shared data is not attributed to specific consultants in this report. However, the collaborative spirit in which data was shared by national and international consultants is gratefully acknowledged.

EXECUTIVE SUMMARY

1. The aim of the project is help improve the capacity and effectiveness of technical and vocational education and training (TVET) focused on social services in Nanning. The Project will support improvement of Nanning No.4 Vocational Secondary School and Nanning Health School, to create a cadre of qualified kindergarten teachers and nurses to address current skilled worker shortages in these occupations and inadequate extension of social services in this fast growing region.

2. The purpose of this technical report is to review curriculum development in the project area, identifying strengths and weakness of existing curriculum development, focusing on challenges under the existing situation in the project area with curriculum, including the interrelated topics of teaching and learning approach, teacher capacity and training, course content and relevance and assessment approach and relevance. The report will identify proposed project interventions to contribute to the overall aim of the project.

3. The sub- component focuses on the rationale for the development of a competency based curriculum through a review of the linkages between education, training and economic development, and the association between government, private enterprise and education in the delivery of nationally an internationally competitive programs to contribute to economic and social objectives in the Nanning and GZAR.

4. The People's Republic of China's (PRC) National Medium- and Long-term Education Reform and Development Plan (2010–2020) has identified a number of shortcomings within the TVET sector. These include outdated curricula, which are inflexible and impose a heavy burden on learning. Reforms proposed in the Plan focus on quality improvement in curriculum development and teaching, and on building strong school and industry partnerships to promote competency-based curriculum (CBC) development. CBC development is a major initiative for ensuring quality and professional development for teachers. It is one of the major actions in the education sector to help to achieve Education for All (EFA).

5. Many of the courses currently for nursing students at NHS are not well-linked to competencies and knowledge that will be important in future jobs. Some professional fundamental courses are overlooked, and several competencies, such as interpersonal and communication skills, practical and experiential teaching, and clinical exposure are lacking. Much of the teaching takes place in large classes and is teacher centered and lecture based. At the NVTS, the kindergarten program has many similar issues with the curriculum, which lacks core courses in areas such as student assessment and special education and overemphasizes practical skills such as dancing and singing over skills such as pedagogy, child development, curriculum planning and class management.

6. The project will develop and implement CBC development for both schools. This will enhance TVET quality and training capacity in NHS and NVTS through introduction of CBC in all its faculties and departments. Development and implementation of a CBC requires major changes in education and training practices. It entails the development of CBC framework and associated student-centered active learning and authentic assessment. The project will support the development and implementation of CBC framework, the associated assessment instruments and the training packages to guide TVET provision in the two target schools.

7. This Report starts by identifying the scope of this sub-component. The following sections provide a situational analysis of the curriculum and associated factors in the two project schools. The is then contextualized by a review of the relevant policy context within which curriculum development occurs. It analyses the strengths and weaknesses of current practice in these areas and reviews relevant international good practice and the rationale for Competency Based Curriculum development. The Report recommends intervention strategies, activities and resources for implementation of this sub-component.

I. INTRODUCTION

A. BACKGROUND OF SUB COMPONENT

1. Project and Sub Component Rationale

8. This Project has been designed to help improve the capacity and effectiveness of technical and vocational education and training (TVET) focussed on social services in Nanning. The Project will support improvement of Nanning No.4 Vocational Secondary School and Nanning Health School, to create a cadre of qualified kindergarten teachers and nurses to address current skilled worker shortages in these occupations and inadequate extension of social services in this fast growing region. The proposed project will be only the second[160] Asian Development Bank (ADB)-financed TVET investment project in the People's Republic of China (PRC), and will play a demonstration role for the sector and provinces seeking to provide quality public social services.

9. Strengthening TVET is a priority under the PRC Government's Twelfth Five-Year Plan. The Plan outlines measures to establish '*a sound and sustainable basic public service system*', with a focus on improvement of public education and medical care. The National Medium- and Long-term Education Reform and Development Plan (2010–2020) calls for pre-school education to be developed so that by 2020, one-year preschool will become the norm, two-years universalized, and three-years popularized.[161] The priorities in the National Health Care Reform include strengthening primary health care services and the grassroots health workforce. Thus, development of TVET for preschool education and health is urgently needed to meet these goals.[162]

10. Nanning is the capital city of Guangxi Zhuang Autonomous Region (GZAR), one of the 12 less-developed provinces and autonomous regions in the western part of the PRC and a gateway to the Pan-Beibu Gulf and Association of Southeast Asian Nations (ASEAN) regions. The development of Nanning as a regional urban centre has led to rapid urbanization[163] and an annual growth rate of 15.5 per cent. Industrialization has created a rising demand for skilled workers and extension of social services to provide balanced access to such services and promote social development in rural and urban areas. Nanning Municipal Government Objectives for the TVET sector through this Project respond to the National Plan's directions and seek to develop nationally and internationally competitive facilities and programs at both schools to support economic and social development in Nanning and GZAR.

11. The Three-Year Action Plan for Preschool Education Development in Guangxi Zhuang Autonomous Region (2011–2013) proposed to build, renovate, or expand 6,628 kindergarten schools to increase enrolment to 1.33 million children and will need to employ an additional 21,000 new teachers.[164] Currently, there is a severe shortage of qualified teachers, kindergartens, and medical personnel.[165] In 2011, there were only 600 new pre-school teachers graduated in the province. Increasing the numbers and providing assessment, retraining, and certification to existing pre-school teachers are all urgent needs. The Nanning Municipal Government (NMG) must build up the public social service system, particularly in health services provision, to respond to increased demand.[166] In 2010, the PRC national average was 7.6 health personnel per 1,000 urban residents but GZAR's average is only 3.6 health personnel per 1,000 residents.[167] The Twelfth Five-Year Plan also responds to the challenge of an aging society by aiming to create improved elderly care and qualified personnel.[168] There is an urgent need to expand the health services with well-trained personnel, including in nursing rural health care and elderly care nursing.

12. The project supports the PRC's Twelfth Five-Year Plan (2011–2015) goals of reform of TVET and expansion of public services. The project will contribute to creation of a qualified labour force and improved access to social services. Over 90 per cent of the students in the two Project TVET schools are female and a high proportion from rural areas. The project aligns with the PRC's country partnership strategy of ADB[169] and conforms to ADB's Education Policy and sector operations plan.

13. This sub component focuses on the overarching issue of curriculum development across the two TVET Project Schools. As noted above the Concept Paper for this Project documents the requirement to help improve the capacity and effectiveness of technical and vocational education and training (TVET) focussed on social services in Nanning. Competency Based Curriculum development is a major initiative in ensuring quality and professional development for teachers and is one of the major actions in the education sector to help achieve Education for All (EFA). The Project will support improvement of Nanning No. 4 Vocational Secondary School and Nanning Health School, to create a cadre of qualified kindergarten teachers and nurses to address current skilled worker shortages in these occupations and inadequate extension of social services in this fast growing region. The proposed project will be only the second[170] Asian Development Bank (ADB)-financed TVET investment project in the People's Republic of China (PRC), and will play a demonstration role for the sector and provinces seeking to provide quality public social services.

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17. **Strategic fit.** The project supports the PRC's Twelfth Five-Year Plan (2011–2015) goals of reform of TVET and expansion of public services. The project will contribute to creation of a qualified labour force and improved access to social services. Over 90 per cent of the students in the two Project TVET schools are female and a high proportion from

rural areas. The project aligns with the PRC's country partnership strategy of ADB[179] and conforms to ADB's Education Policy and sector operations plan.

18. **Special features.** The project has the following demonstration features: (i) a model school for pre-school teacher training that will support teacher development, student training, and curriculum improvement; (ii) development of rural health training centres to make the training curriculum for nurses and rural doctors more relevant to rural requirements. The centres will train students during their internship or refresher courses; and (iii) development of a curriculum for elderly care. To anticipate the growing elderly care industry and the need for nurses with specific skills, the project will assist in developing an elderly care curriculum in the Health TVET School.

B. SCOPE OF SUB COMPONENT

19. This report focuses on challenges under the existing situation in the project area with curriculum, including the interrelated topics of teaching and learning approach, teacher capacity and training, curse content and relevance and assessment approach and relevance.

20. The sub- component focuses on the rationale for the development of a competency based curriculum through a review of the linkages between education, training and economic development, and the association between government, private enterprise and education in the delivery of nationally an internationally competitive programs to contribute to economic and social objectives in the Nanning and GZAR.

21. It is important to note that CBC is a concept built on CBS. The latter are industry-determined specifications of performance that set out the skills, knowledge and attitudes required to operate effectively in a specific industry or profession. One of the primary features of CBC is that it is job specific and is determined within a context of the industry or the profession requirements. That is it needs to be set within the working environment within which it will be implemented.

22. Competency-based education and training is one of the dominant approaches in TVET globally. Competency based training system aims at trying to make TVET much more relevant to meeting the needs of industry and user agencies. Thus it is not surprising that issues concerning CBC have raised a number of questions between school's teaching staff and the consultants. This promoted much discussion and debate throughout the project design phase. A position was developed: namely competency based approach to nursing education (including elderly care), preschool education and rural doctor education is an indisputable requirement. However, the format of the CBC and CBS must be viewed within a context of the social, economic and political agenda of the PRC. For this reason it is important to analyze the existing national and other education plans.

23. The People's Republic of China's (PRC) National Medium- and Long-term Education Reform and Development Plan (2010–2020) has identified a number of shortcomings within the TVET sector. These include outdated curricula, which are inflexible and impose a heavy burden on learning. Reforms proposed in the Plan focus on quality improvement in curriculum development and teaching, and on building strong school and industry partnerships to promote competency-based curriculum (CBC) development. CBC development is a major initiative for ensuring quality and professional development for teachers. It is one of the major actions in the education sector to help to achieve Education for All (EFA).

24. The Nanning Municipal Government's objectives for the TVET sector through this Project with a focus on pre-school teacher training at Nanning No.4 Vocational School and nurse and rural health care training at Nanning Health School respond to the National Plan's directions and seek to develop nationally and internationally competitive facilities and programs at both schools to support economic and social development in Nanning and GZAR.

II. SITUATIONAL ANALYSIS OF CURRICULUM DEVELOPMENT IN TVET SUB SECTOR

25. The situational analysis of the TVET sub sector in relation to curriculum development for quality education will focus first on the operational context of the TVET sub-sector, and lessons learned from stakeholder consultations at the micro level relevant to the two target schools NNHS, and NNVS in Nanning, People's Republic of China (PRC). The second part will analyze the policy context, and potential and limitations of the TVET sub Sector at a Macro and Meso level drawing on the Sub-Sector analysis, and relevant documents[180] as is relevant to curriculum development and the implications for the proposed project.

A. SITUATIONAL ANALYSIS OF CURRICULUM DEVELOPMENT AND IMPLEMENTATION IN THE PROJECT AREA

26. This section reviews the existing situation in the project area, specifically data collected by the PPTA team at Nanning No.4 Vocational School (NNVS) and Nanning Health Schhol (NNHS).

27. Nanning No. 4 Vocational and Technical School (NNVS) was founded in 1965 and is a full-time public (government) school with three campuses: Zhuxi, Tanluo and Yongning campuses. In addition to pre-school teacher training, the School provides a total of 20 specialties including automotive, garment manufacture, rail transit and sport (basketball) as well as others. The School now has a total of 7,799 students, including 5,321 full-time students and 2,478 adult part-time students. There are 312 professional teachers in the school, including 17 teachers holding a postgraduate certificate, 218 holding an undergraduate certificate and 12 holding an associate degree .

28. Nanning Health School (NNHS) was established in 1972 as a secondary TVET. It provides training of health care workers, including nurses and nursing care, midwifery, rural health care and training in the use of various medical techniques and technologies including medical laboratory science and medical imaging technology, as well a traditional Chinese practitioners. It is a demonstration school nationally for the reform and development of secondary vocational education development. The Nursing Care course is certified by the Guangxi Zhuang Autonomous Region (GZAR) Education Department as a provincial-level demonstration course.

[180] This Technical Report only focuses on the impacts on curriculum in the TVET sector, and therefore only draws on policy, plans, and practice that is of direct relevance to this subcomponent. Fuller details of both Government Policy, plans in Education sector, and TVET sub-sector can be found in document "Sub-Sector Assessment". The reflection on curriculum requirements and development in the two project schools and Nanning more generally is also limited to this sub component only and should be read in conjunction with the full PPTA documentation

29. The following subsections identify particular issues identified within the schools of relevance to CBC quality and development. For this purpose the following basic CBC development model has been used:

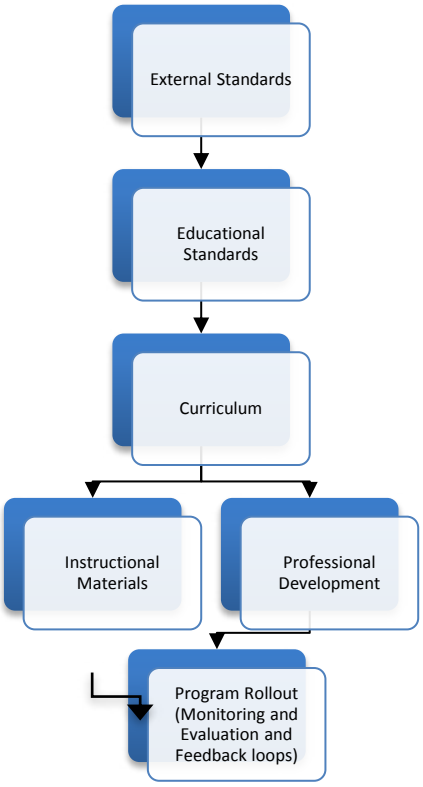

Figure 1: Proposed Competency Based Curriculum Development Model

1. Building strong school and industry partnerships

30. Currently, within the two Project TVET schools, school-industry partnerships are relatively weak and limited to public sector enterprises. Limited industry involvement in the development, validation, implementation and evaluation of training programs result in a lack of industry relevant standards to guide curriculum, teaching, learning and assessment.

31. Nanning No.4 School is keen to strengthen and establish such links both nationally and internationally to learn about curriculum development and exemplary provision of pre-school teacher training for its program improvement. The School has established industry partnerships with 8 public kindergartens in GZAR that comprise its 'designated training base', and wirh three public infant nursing homes that also provide internships and staff development opportunities. The

partnerships with kindergartens have so far been limited to partner provision of observation opportunities and internships for students, jobs for selected graduates and staff development opportunities. However, the School would like to develop its capacity to provide in-service training/professional development for pre-school teachers, in particular for its partner kindergartens. However, this requires the School to be accredited to provide post-secondary level training, accreditation that it currently does not have. Respondents emphasized that one of their expectations of the ADB project outcomes is a sufficient increase in the quality of their pre-school teacher training provision for the School to be able to gain accreditation to provide in-service training at post-secondary level in the future.

32. Nanning Health School also identified issues with school industry partnerships, which need to be strengthened and extended. The establishment of industry expert and enterprise practitioner participation in and input to the entire education and training process (including into curriculum, teaching-learning, assessment and work-placement);

33. The result is relatively poor quality courses with inadequate industry relevance and inadequate focus on occupational requirements, resulting in not only a lack of specific technical skills but also more generic employability skills. There is a critical need to increase TVET responsiveness to labour market needs and occupational requirements. This includes addressing the current lack of systematic processes for sourcing relevant and accurate labour market information for identifying training needs. The Project will strengthen industry advisory groups and develop frameworks and mechanisms for optimizing industry expert and enterprise advice and input at all stages of the training program cycle.

34. Networking and partnerships with others who are exploring the sustainability of CBC, nationally, regionally, and internationally, such as technical and further education institutions in Australia, community colleges in US, Canada, etc.

35. Collaborations between Nanning Health School and tertiary education and training providers take a range of forms, with articulation agreements with Guangxi Medical University, Guangxi College of Traditional Chinese Medicine and the Guilin Medical College. External personnel from relevant universities and colleges give guest lectures. There are also examples of collaborators in program delivery, with a number of health institutes (the Health Management Institute of Guangxi, Guangxi College of Traditional Chinese Medicine, Liuzhou Higher Medical College, the Adult Education Institute of Guangxi Medical University, and the Medicine School of Shanghai) There was no clear examples of linkages with other TVET providers in practice.

36. There are a range of associations with [potential employers (primarily hospitals) based on teacher and leader training, teacher workplace placements, information sharing, observation tours, curriculum sharing and some research collaboration. Hospitals provide access for School staff to become aware of new techniques and technologies that have been introduced into hospital practice and to explore how these might

be introduced into the School's simulated teaching environment to make the School's teaching more relevant to industry practice and more up-to-date. These partnerships are longstanding and valuable to the School and offer potential for strengthening and extending.

37. Currently, within these two Project TVET schools, TVET school-industry partnerships are relatively weak and limited to public sector enterprises. Limited industry involvement in the development, validation, implementation and evaluation of training programs result in a lack of industry relevant standards to guide curriculum, teaching, learning and assessment. The result is relatively poor quality courses with inadequate industry relevance and inadequate focus on occupational requirements, resulting in not only a lack of specific technical skills but also more generic employability skills. There is a critical need to increase TVET responsiveness to labor market needs and occupational requirements. This includes addressing the current lack of systematic processes for sourcing relevant and accurate labor market information for identifying training needs. The Project will strengthen industry advisory groups and develop frameworks and mechanisms for optimizing industry expert and enterprise advice and input at all stages of the training program cycle.

38. The National Plan also strongly promotes international exchanges and cooperation in education, including by vocational schools, to assimilate '*advanced concepts and experience in education*' drawn from international contexts (p.34). In particular, it highlights cooperation with international institutions to: build research capacity and facilitate engagement in joint research projects; facilitate student and teacher exchanges; enable collaborative teaching and research projects including 'demonstration schools'; and develop mutual recognition of academic credits and joint degrees. Nanning No.4 Vocational and Nanning Health School's partnerships with other relevant education and training providers also need strengthening, provincially, nationally within the ASEAN region and more widely internationally to facilitate knowledge and curriculum sharing, teacher and student exchanges, training program benchmarking and alignment with national and international good practice and development of joint research activities. This Project will facilitate the broadening and strengthening of partnerships with PRC national TVET schools/tertiary colleges and establishment of a partnership program with international vocational colleges and institutes, with specific focus on the ASEAN region. In particular, the Project will support the two Project TVET Schools in working with identified international good practice TVET and other education and training institutions to: establish mutually beneficial goals of each partnership; identify priority capacity institutional challenges to address and outcomes to work towards together; implement the collaborative activities, evaluate outcomes and disseminate the learning from these activities provincially, nationally and internationally.

39. The importance of career development and employability skills in secondary TVET is highlighted in the *Outline of China's National Plan for Medium and Long-term Education Reform and Development (2010-*

2020)[181] including in the statement. '*Vocational education should … cultivate work ethics, occupational skills, employability and career-starting abilities in students*' (p.17). The critical importance of incorporating employability skills in young people's training to promote career development is highlighted also by the International Labour Organisation (ILO) which describes employability as encompassing '… *the skills, knowledge and competencies that enhance a young person's ability to gain and retain a job, progress at work and cope with change, secure another job if she/he so wishes or has been laid off, and enter more easily into the labour market at different periods of the life cycle'*[182]. Effective workplace-based training facilitates these skills and also promotes two-way recruitment benefiting both the employer (internship provider) and the intern.

40. Career development for students needs strengthening within the two Project TVET schools. The weakness in current career development practice is inextricably linked with both the weak industry-enterprise partnerships resulting in limited industry/enterprise involvement in training program development and delivery and the limited, outdated or entire lack of workplace experience of teachers in these Schools.

2. Responsiveness to Industry and Enterprise Requirements

41. A review of industry partnerships in the region identified limited industry involvement in the development, validation, implementation and evaluation of training programs result in a lack of industry relevant standards to guide curriculum, teaching, learning and assessment.

42. In Nanning No.4 School respondents reported an identified gap between what is taught through the School's classroom teaching and the actual work to be undertaken by graduates in pre-school teaching contexts. This is a result of a range of factors including

    (i) limitations in the curriculum, teaching, learning and assessment materials including lack of industry relevance due to limited industry expert/enterprise practitioner input to the program's development;
    (ii) practical activities within the taught program being primarily focused on development of musical instrument, dancing, singing, painting and drawing skills rather than on pedagogical practice in kindergarten workplaces;
    (iii) lack of pre-school teacher-trainers' training in, knowledge of, and work experience within pre-school teaching contexts.

43. There is some exposure to workplace practice including observations in a kindergarten setting in students first two years, and substantial time in their final year (one month in semester 5 and 6 months in

semester 6 of the program. The School undertakes no training of workplace supervisors. In essence they operate independently therefore fro the school curriculum. This is problematic in terms of making an explicit link between the theory and curriculum studied within the classroom environment and workplace experience.

44. The Nanning Health School has introduced reforms to the program to increase Nursing students' practical skill development through laboratory work and practice in simulated hospital environments. It also organises opportunities for observation of hospital based nursing practice during the first two years. Such activities comprise 30 per cent of the classroom teaching time, with an estimate 60 precent of the overall nursing program focused on practice.

45. Rural health worker program also has an internship component of 40 weeks duration. However, again placement staff supervises this and although there are procedures in place to try and ensure the effectiveness of the internship placement for the student, there appears little integration of the theory with the work placement.

46. There are a few outcomes from these factors. The first of which is the need for quality improvement in curriculum development and teaching, to be addressed in a following section, and the second is the clear need to link competencies and knowledge required both theoretically and practical (skills and knowledge) for future job requirements.

3. Relevance of Course Offerings

47. Key competencies – particularly soft skills such as interpersonal and communication skills, practical and experiential teaching, and clinical exposure are lacking. Soft skills widely required as essential competencies include the generic skills of :

(i) creative thinking,
(ii) communication skills,
(iii) problem solving skills,
(iv) lifelong learning,
(v) entrepreneurial skills,
(vi) interpersonal skills, and
(vii) team work and leadership.

48. In the Nanning No.4 School there is no direct focus on the development of "employability" skills of the students. There are minimal offerings in communication for internship placement, and interpersonal relation and communication skills for graduating students. These are not integrated into the curriculum more broadly.

49. The Nursing program at the Nanning Health School has limited generic employability skills, limited to an emphasis on team-work skills, and the offering of a course on psychology that focuses on communication skills, in particular with patients and relatives.

50. Kindergarten program also lack core courses in areas of student assessment, and special education, with too high an emphasis on practical skills over fundamental skills such as pedagogy, child development, curriculum planning and class management

51. Overall there is a lack of professional fundamental courses, particularly in the soft skills. There is a need for the development of new courses: new courses to address changes in curriculum reform and emerging changes and good practices in industry. The project will develop content and curriculum for the following new courses:

    (i) NHS: interpersonal communication, nursing occupational risk management, and elderly dental care; and
    (ii) NVTS: ethnic minority culture for kindergarten, kindergarten student assessment methods, addressing kindergarten education for children with special needs, early childhood education and development (o-3 years), and safety and security in kindergarten environments.

52. In a review of the Elder Care specialty at Nanning Health School, nurses surveyed stated that to meet the demands of their daily work, most important areas of training are: knowledge of humanitarian care to the elder people, psychological care, safety protection, rehabilitation skills, and disease prevention. Among the courses they had in the school, they believe that the most useful ones were: basic nursing skills, activities of daily living (ADL) skills, mental health care, geriatric management, psychological care, rehab care, and communication skills. 11 of sample believe that: the current curriculum need not be simplified or condensed and that biochemistry can be condensed or simplified. 38 respondents wished to receive training in practical elderly care skills. Suggested curriculum reform would include an improved knowledge of basic theories, increase in practical application skills, increased knowledge of professional ethics, and a knowledge of how to use social resources. The issue for the elder care specialty within the cursing curriculum is that it is extremely limited and not compulsory. There is a favorable climate for change in relation to elder care and therefore curriculum development in this area is likely to be successful. In this context there was also the identification of need for learner centered methodology skills, and the development of module and learner centered learning resources.

4. Teaching and Learning Approach

53. A review of teacher training and capacity sub-component identified issues with the current standard of teacher training and their capacity for effective teaching and learning. Teaching and learning at Nanning No. 4 School is complicated by the fact that it had transformed from a primary school teacher training TVET school with minimal focus on pre-school teacher education, to a complete focus on pre-school education. The implications for the staff are substantial in the need to acquire new skills. The kindergarten-teaching program was also noted as being far too theoretical, relying mainly on lectures, and in need of new

approaches to teacher training and teaching and learning. The curriculum of the kindergarten program was identified as being entirely teacher focused, tended to bring in education contents of a primary school teacher education curriculum. Curriculum development is a core need, appropriate to the requirements of kindergarten teaching, both generally, and of specific cultural relevance to the area.

54. The Nanning Health School is starting from a better place, with some good examples of teaching practice. The Director of Nursing explained that they utilize a nurse task oriented teaching and learning approach (which bears substantial similarities to competency based training and education). However the emergence of new approaches to teaching and learning are hampered by the fact that there were only a few teachers able to tech and develop materials that were more task oriented and therefore this was quite a slow change. However, on the whole their staff needs substantial further training, in particular in relation to curriculum development. There is a still a strong tendency towards traditional teaching methods so a different training approach is warranted, yet there is willingness to engage with new approaches.

55. Potential for CBC to contribute to lifelong learning and educational pathways, for example Nanning No. 4 School has an agreement with Guangxi Normal University (Guilin) provides for 10 per cent of the Schools' most capable graduates, as identified by the School, to gain direct entry into the tertiary program at the University. A similar cooperation agreement is in place with Guangxi Education Institute in Nanning.

56. The Nanning No.4 Vocational School Implementation Plan (2013)[183], identified the need to improve the quality of preschool teacher training curriculum to include teaching learning methods, assessment and content. The quality of preschool teacher training needs to integrate in-service, pre-service and CPD short courses.

57. Bigger picture issues for educational leadership and management include a need to Increase the number of its teaching staff to meet the greater number of preschool teachers to be trained, requiring the training of new teaching staff to meet the new educational quality requirements of the School. There was also an identified need to improve the cooperation between the school and kindergartens for better integration of school based learning with on the job learning, which should include joint assessment of student teachers.

5. Human Resource Capacity, Training and CPD

58. The Teaching and training are no longer limited to teaching and learning provision and the role of teachers and trainers has extended beyond teaching and learning provision and includes curriculum and teaching innovation, networking and partnership negotiation with industry and other education and training providers, career and student

[183] Nanning No.4 Vocational School (2013) Implementation Plan of the Capacity Promoting Project of Nanning No.4 Vocational and Technical School.

support counseling, evaluation, organization and policy and practice research.

59. The sub-component focusing on teacher training for pre-school education and training clearly identifies the requirement for the upgrading of all the current teachers in both schools in learner-centered methodological skills as a priority. This report recommends that a learner-centered approach to the methodology training is used to increase teachers' methodology skills so that the teaching and learning in both schools becomes more task-based, learner centered, communicative, efficient and effective, so that teachers will be able to conduct structured lessons using a range of participatory techniques; plan and deliver lessons to students based on relevant and appropriate materials; facilitate effective teaching and learning using a range of classroom management techniques; reflect and give feedback on their own and other's teaching and learning.

60. CPD is essential to assist teachers and trainers to effectively take on these broader roles and to become networking partners with enterprises and national and international TVET colleagues, innovators and researchers. The assessment of the training activities will utilize a competency based framework providing a clear link to the curriculum development requirements of both schools and more generally.

61. The institutionalization of CBC, essential for the sustainability of the initiative will be heavily dependent on staff development, including CPD of teachers and trainers, and a clear commitment to ongoing life long learning.

62. In summary, many of the courses currently for nursing students at NHS are not well-linked to competencies and knowledge that will be important in future jobs. Some professional fundamental courses are overlooked, and several competencies, such as interpersonal and communication skills, practical and experiential teaching, and clinical exposure are lacking. Much of the teaching takes place in large classes and is teacher centered and lecture based. At the NVTS, the kindergarten program has many similar issues with the curriculum, which lacks core courses in areas such as student assessment and special education and overemphasizes practical skills such as dancing and singing over skills such as pedagogy, child development, curriculum planning and class management.

63. A review of the existing curriculum issues and opportunities in both schools, and to meet the requirements of the project indicates the following:

    (i) Existing curriculum is not well linked to the competencies and knowledge required for existing and future workforce requirements in the social sector (as the focus of this report) in particular the health and education sectors.
    (ii) Curricula needs to be developed for respective disciplines as a whole, and it needs to be based on job function.
    (iii) Curriculum development needs to cross a number of levels and integrate employability skills and knowledge with technical skills and knowledge.

(iv) There is strong need to develop soft skills.

64. The proposed project will support NHS and NVTS in developing municipal level curriculum standards. There needs to be Institutionalization of CBC at school and program levels to ensure the ongoing quality and support necessary for the major changes identified as necessary in education and training processes.

65. The CBC will (i) cover existing and strengthened discipline-occupational specific competencies (knowledge, skills, and abilities); (ii) introduce and incorporate discipline-occupational methods competencies (the know-how, creativity, problem solving); (iii) social-communicative competencies (team work and leadership, reporting, presentations); (iv) self-development competencies (self-realization in personal and professional life, lifelong learning, entrepreneurialism, community involvement. In broad terms this can be depicted as follows

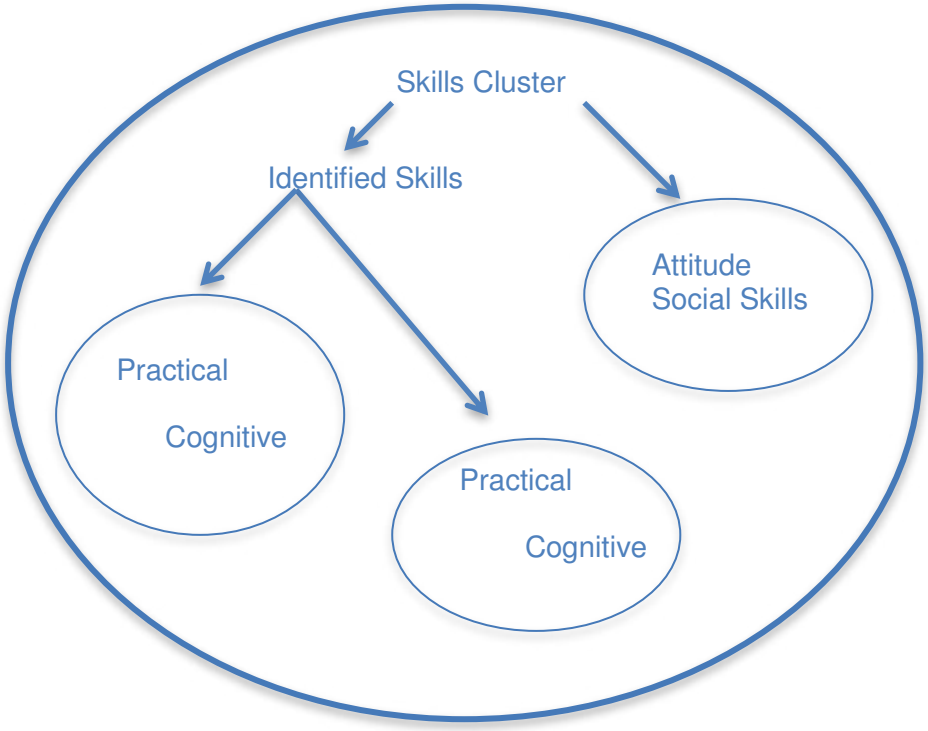

Figure 2: Concept of Competency

66. The concept of competency needs to be refined through a framework. This is, CBC needs to be set within a framework consisting of curriculum framework includes two components: (a) core employability skills, which have to be integrated throughout the program and course sequence, and (b) the technical skill standards that reflect the occupational knowledge, skills and abilities required for performance of discipline or occupationally specific activities.

B. POLICY ANALYSIS OF SECTOR/SUB SECTOR

67. The rapid changes in the economic and social context of the PRC have impacted significantly the position, role and demands on the TVET sub-sector. As is the case internationally, the PRC's Government identifies TVET as a catalyst for social equity and economic growth. There has been a significant shift to a more urbanized society, (in 2011 for the first time the urban population exceeded the rural population by 2%). The population growth rate of 1% per annum (1990 – 2011) is slowing, but the share of people over 60 will increase from 12.5% in 2010 to 20% in 2020, and will double from todays 178 million by 2030. The economy is the second largest and fasted growing in the world, and is in transition from export led to domestic demand driven economy. The high demand for TVET graduates is demonstrated by their existing high employment rate of over 95%. TVET graduates are able to find their jobs within 6 months of graduation. An approaching Lewis Turning Point, increased labor costs, a potential skilled labor shortage, and a political and economic imperative to ensure imbalances in PRCs economic growth to ensure social harmony, all are core drivers in the current and future strategic direction of the TVET sub-sector.

68. In summary there is a strong labor market shift, away from labor intensive rural employment, and low skilled rural population, to a technology and knowledge intensive labor force. This will include a rapidly growing requirement for human resources across the social sector, including elderly care, health, and education amoungst others. TVET will need to increase the supply of a highly skilled workforce that meets industry and enterprise demands, and to achieve broader gains in economic and social priorities of the PRC Government.

69. The policy environment and resulting implications for curriculum development for this project operate within the context of the People's Republic of China's (PRC) Twelfth Five Year Plan which outlines measures to establish a "*sound and sustainable basic public service system*" with a focus on improvement of public education and medical care. The PRC Government National Medium and long Term Education Reform and Development Plan (2010-2020) identified TVET as a key target for educational expansion to develop a skilled workforce, central to addressing an existing and growing shortage of skilled workers in the PRC. This is predicated on making the TVET system more responsive to the labor market needs and strengthening linkages between the TVET and private sector. Drivers of this expansion in the TVET system are recognized as twofold in the National Plan 1) social, economic and civil purposes, (being a major channel through which to boost economic growth, promote employment, improve people's livelihood and address issues pertinent to agriculture, rural areas and farmers), and 2) partly because it is a key link in mitigating structural conflicts between labor supply and demand in a changing market environment.

70. Aside from the specific focus on growth of the TVET sub-sector, other project and sub component relevant policy reforms include the regulatory requirement for TVET training for employment in technical

occupations, access and equity in TVET, and decentralization providing context for locally relevant, equitable, and responsive TVET institutions, quality improvement, school-industry partnerships and finally and most importantly, an increasing emphasis on modernizing and modularizing curricula and promoting and developing the use of modern teaching methods and educational technologies. The Three Year Action Plan (20010-2012) also focused highly on quality improvement with graduate employability, life long learning capacity, and skills transferability

71. There are a number of core issues identified through government policy and planning for the TVET sub-sector. The National Medium- and Long-term Education Reform and Development Plan (2010–2020) identified a number of shortcomings within the TVET sector. These include outdated curricula, which are inflexible and impose a heavy burden on learning. The image of TVET, which is culturally seen as inferior to other education options, is also problematic. The issue of public perceptions, the "image problem" of TVET is an international phenomenon[184] (Kingombe, 2012), which China is not immune to. The impetus to change the perception of TVET as a fall back option for those who do not succeed in more academic aspirations is strengthened by the changing role of work, the labor market and links to evolving national and international market priorities. There is a clear need for appropriately skilled employable graduates with the capacity for life long learning and an associated requirement for quality improvement.

72. In response to a number of issues highlighted with the TVET sub-sector The Three Year Action Plan advocates a number of key reforms:

(i) Governance Reforms: including a sub-sector that is government oriented, industry guided, enterprise involved and school delivered,
(ii) Training Delivery Reforms: this focuses on a shift from traditional school based delivery to a broader delivery platform, like work based delivery, enterprise guided delivery and workshops, including life long learning in multiple stages.
(iii) Teaching- Learning methods reforms: emphasis on a shift from teacher centered to learner centered teaching and learning methods, including problem based learning, project based, group learning, peer learning and so on, and an integration of theory and practice,
(iv) Assessment and Evaluation Reforms: reforms in assessment and evaluation in response to the changes above and of relevance to this sub component include the development and implementation of both internal and external, especially employer based student assessment

[184] Kingombe, C. (2012) Lessons for Developing Countries from Experience with Technical and Vocational Education and Training, Working Paper 11/1017, UK, International Growth Centre. http://www.theigc.org/sites/default/files/christian_kingombe_paper.pdf

73. A further area of focus at the policy level is in cooperation and partnership. The globalization of economies and the international flow of labor force are now putting increased priorities on the effectiveness, quality, skills recognition and employability of TVET graduates across economic regions. For those and other reasons TVET is an important part of PRC's whole education system. It is an important channel to improve advancement of economy, society and employment in PRC. Industry partnerships are recognized in the National Plan for Medium and Long Term Education Reform and Development (2010-2020). Currently employers and industry contribute to TVET mostly through (i) development of vocational standards at the national level, (ii) development of curricula, syllabus and course content at the provincial and institutional levels, and (ii) providing training places for internships for vocational institutions. There is little contribution of employers or industry at national level.

74. The sub-sector review identified that Industries and enterprises within more competitive environments require workers who can readily acquire and demonstrate skills needed for new technologies, processes, products and quality standards. Workers need to have both general and more defined skill sets and the capacity to adapt these skill sets in the view of new social and industrial demands. There is a lack of 'soft skills' within TVET curricular. A lack of effective engagement between industry, and enterprises and curricula underpins a poor link to the competencies and knowledge required for existing and future jobs. There is little evidence that TVET institutions use industry surveys to identify job functions and that these are used as benchmarks for curriculum and standards development.

C. TVET PRIORITIES AND CONTEXT IN GUANGXI AND NANNING

75. Nanning is the capital of GZAR, which is one of the 12 less developed provinces and autonomous regions in the western part of the PRC and a gateway to the Pan-Beibu Gulf and ASEAN regions. Nanning Municipality had at year-end 2011 a population of 7.12 million (3.40 million female and 3.72 million male). Projection is that population growth will be around 12.4 % per year. In comparison to national trends the percentage of GZAR's urban population in 2011 was 41.8%. The urbanization rate brought about by migration from rural to urban areas will require suitable education structure including preschool and kindergarten facilities. Nanning as the capital of The development of Nanning as a regional urban center has led to rapid urbanization and an annual growth rate of 15.5%. Industrialization has created a rising demand for skilled workers and extension of social services to provide balanced access and social development in rural and urban areas.

76. On a sector basis figures the ratio of service sector is rising. However the percentage of service sector in Nanning, i.e., 32.6% in 2010, is much lower than the national average of 43%. On the other hand, the ratio of the primary industry (agriculture) in Nanning in 2010 was 50.1% or five times higher than the national average of 10%. This implies that Nanning has a huge potential for economic development and structural change in the secondary and tertiary sectors.

77. In 2011 Nanning had 1080 kindergartens with a total enrolment of 198,000 pupils. There were 1504 primary schools with 94,000 new student enrolments in regular primary schools, and total enrolment of 531,000 pupils. The pupil to teacher ratio in regular primary schools is 18.68 to 1. There were 346 regular secondary schools with 128,000 new enrolments and student teacher ratio of 16.61 to 1.

78. In 2011 Nanning had 2,324 health institutions of which 201 were hospitals. Totally there were 28,821 beds available including 26,945 hospital beds. The health industry employed 53,175 persons. This includes 40,696 medical and technical personnel 15,398 certified physicians and certified assistant physicians 15,945 senior nurses.

79. To respond to the aging population rural health care and pre-school education demand Nanning Municipality will 2022 need to achieve (i) a net enrolment rate of 70% for 3-year preschools and 90% for 1-year preschool. Currently, the corresponding figures (2011) are 54% for 3-year preschool and 74% 1-year preschool, and a ration of rural doctors / 1,000 people will be 2.10 and the ratio of licensed nurses / 1,000 people will be 3.14. Corresponding figures for 2011 are 1.74 rural doctors and 1.39 licensed nurses.

80. Given the above socio-economic context in Nanning it is evident that there will be growing social and economic pressure to intensify efforts in advancing TVET provisions especially in the light of demographic changes, urbanization, industrialization and labor market demands. Thus there is a need for the relevant authorities to take action to achieve sustainable development of the TVET sector to strengthen the skill base and to meet demands for qualified human resources in accordance with the priorities in the government's 12th Five-Year Plan.

81. The demand for skilled labour in the health and eduation sectors is expected to increase significantly. In Nanning alone, annual employment in health and education sectors increased by almost 7% from 2010 to 2011 while, on the average covering the period 2006-2011, wages increased by as much as 15.53% and 12.57% for the education and health sectors, respectively. The relatively faster annual growth rate in wages compared with the rate of growth in employment reflects the increasing demand for skilled labor in these two sectors.

82. Given that Guangxi's health care sector is still understaffed, it is expected that a significant gap between demand and supply will remain in the short-term. In the education sector there was a significant increase in new admissions (9,501 students) and 5,522 graduates (i.e., 2,159 graduates and 3,363 expecting to graduate in 2010), the number is likewise deemed too small to meet demand. The high demand for TVET graduates is demonstrated by their high employment rate of over 95%. TVET graduates are able to find their jobs within 6 months of graduation.

83. Specifically in the TVET sector in Nanning the student/teacher ratio is by international standards very high. The TVET is one education sub-sector that is more teacher/students ratio intensive than other sub-sectors such as primary, general secondary and higher education. It fluctuated from 29.18 students per teacher in 2005 to 38.17 students

per teacher in 2011. In 2011 when there were 5339 teachers and 203,800 students enrolled in TVET institutions the students/teacher ratio was 1:38.17. In developed countries the ration ranges between 1:18 and 1:10 depending on specializations.

84. The political economy analysis shows that the government recognizes TVET system as a critical factor for economic development. This is evident from the above stated government policies, plans and strategies at various levels which have been put in place to strengthen TVET system. It is also evident from the discussions with major stakeholders and observations at institutional levels. Accordingly the TVET system in PCR is becoming increasingly responsive to economic and social needs, including industry and employer demands and delivery quality improvements. This is further evidenced by the strong employment figures of TVET graduates.

85. To a large extent there was and still is a focus on needs analyses as a tool to determine the TVET system relevance. This is a one-sided view as there are differences, as international experience has shown, that learners' needs are only part of the full story. There is a need to take into consideration the demand side, i.e. the technical and employability skills, competencies and knowledge required by employers.

86. A 'needs-demands' responsive TVET system is required in PRC if it wishes to become regionally and internationally economically relevant. This has to be supported by: (i) the availability of a highly skilled labor force, where individuals have the necessary capacity to contribute to economic well-being of enterprises; (ii) a strong and reliable labor market information available to employers and employees alike; (iii) employer participation in TVET at all levels ranging from national TVET policy formulation to provincial level policy interpretation, to municipal level policy implementation, to institutional level curriculum development, delivery modes, assessment and management; (iv) flexible skills development and skills supply.

87. At national level occupational standards tend to be outdated and do not reflect quality norms expected in developed countries. Thus it follows that much of the occupational testing is equally outdated and the reliability and validity of competency tests and assessments has to be questioned. This in turn leads to reduced productivity. With reference to validity and reliability of competency tests and assessments it is interesting to observe that the pass rates such as 95% and above in NNVS and NNHS, as in many other TVET schools and occupations are prevailing. This from an international perspective raises questions about the standards for success. Due to absence of needs-demands established occupational standards it is difficult to ascertain how well qualified the labor force is in comparison to labor market demands and international benchmarks.

D. INFORMATION SUMMARY – QUALITY EDUCATION, CURRICULUM SITUATION AND COMPETENCY BASED CURRICULUM DEVELOPMENT

88. Quality is defined as 'fitness for purpose'[185]. Thus, for example the quality of graduates in TVET is determined how well they fit the employment demands, and quality of a curriculum or teaching and learning is measured how well these prepare students for the world of work and members of the society.

89. A range of indicators is generally applied for determining TVET quality. These include industry and employers participation and acceptance of curriculum and standards, up to date curriculum teaching-learning and assessment, entry levels for students, qualifications and industrial experiences of teaching staff, suitable and relevant plant and equipment, supporting educational leadership, and monitoring and evaluation procedures at classroom, institutional and systemic levels. It has been acknowledged by stakeholders that there is a need to improve the quality of education and training including outcomes.

90. There is little evidence that economic and social changes in PRC are being taken into consideration sufficiently in relation to increasingly complex demands on the TVET system and its impact on stakeholder. TVET institutions show an inadequate commitment to effectiveness of education and training provisions within a framework of a culturally and socially heterogeneous environment. There is evidence that their response is insufficient to meet the needs of disadvantaged pupils and pupils with learning or behavioural problems. Further their commitment and access to new technologies and opportunities to keep pace with rapidly developing fields of knowledge and approaches to student assessment are weak.

91. To increase the capacity of TVET there for there is a need for the development and implementation of CBC framework, the associated assessment instruments, and training packages required to guide the TVET provision in the two target schools. There is a parallel need to establish mechanisms to support industry partnerships, partnerships and communication with national and international entities that wil provide for benchmarking and sharing and exchange of ideas and information.

92. Teaching-learning methods in TVET sub-sector are generally lacking quality. One of the reasons is that the teaching-learning methods remain couched in 'teacher centered' teaching and in rote learning. This is to some extent governed by the curriculum and by assessment methods. An analysis of teaching-learning methods in secondary TVET schools reinforced the claims that ' … the relative traditional teaching methods lead to an adverse impact on teaching-learning effectiveness. The project schools (NNHS and NNVS) have also acknowledged that 'the training of teaching method is insufficient'.

93. Currently, in TVET there appears to be insufficient emphases on the need for a paradigm shift in teaching-learning methods. TVET

[185] European University Association

teachers appear to be reluctant to change their belief system from one that is primarily teacher centered to one that is learner centered. One of the problems is that there is a lack of extensive amount of professional development including institutionalized CPD for teachers and educational leaders in the field of contemporary learner centered teaching-learning methods. This includes a lack of significant intervention of knowledge development in curriculum areas.

94. In order to overcome these weaknesses TVET teachers need to become members of learning communities. At one level this means working with one's peers in the school to improve educational attainments of learners at another level this requires an outward looking working relations with others in provincial, national, regional and international arenas. Introduction of contemporary teaching-learning methods, which allow for student-centered, open, flexible and independent learning is imperative, if the quality of TVET graduates is to improve, is important.

95. In relation to assessment and competency based assessment, students undertaking courses leading to occupational licenses in TVET institutions under the control MOE are required take relevant national tests administered by the MHRSS. Students are required to pass examinations leading to certification attesting to a successfully completion of the school's or college's course requirements of the school or college and that they passed the relevant national occupational qualification administered by MOHRSS. In effect they gain a 'double certification' one being the academic and the other the professional licensing qualification. It should be note that about 90% of the MOE students pass the MOHRSS occupational tests. By international standards this is a very high success rate and raises question about the validity and reliability of the administered tests and examinations.

96. To reiterate, TVET academic qualifications in secondary vocational schools and colleges are obtained on basis of successful completion of all course requirements. This includes all relevant tests and examination. In absence of MOE test and examination standards each school or college sets their own assessment methods including tests and examination criteria. More often than not, teachers set their own tests and examinations. The exception to this, are tests set at national or provincial levels for 'core' subjects like mathematics, language, moral education and physical education. There is no evidence of moderation or comparison of results between schools or colleges at municipal, provincial or national levels. This in itself is not a problem, the issue is the, by international standards, unusually high pass rate, which seems to be accepted without questions.

97. Given an absence of national standards and a TVET curriculum framework, similar to Australia, Germany, the European Union and many developed and developing countries, question of quality must be raised. If every school or college can 'invent' its own tests and examinations to determine students' achievements, there is no common quality basis for determining students' performance and their level of competency.

1. Employer satisfaction

98. There is little evidence of systematic surveys to ascertain how far employers are satisfied with the performance of graduates from TVET institutions. Without such data and feedback there is little, if any strategy and mechanism in place to ensure relevance of courses vis-à-vis industry demands. Notwithstanding this phenomenon, it seems that there is no deep-seated employer dissatisfaction with the skills and competencies that graduates from the project target schools bring into the employment environment. The main criticism is the aforesaid lack of 'soft skills' and personal traits. Industry and employers are cognizant of the fact and accept it as a given that new graduates cannot be trained fully for the world of work, but need further on-job training in 'hard skills' areas, when entering employment.

E. RATIONALE FOR CBC

99. Reviews of the National Policy and Planning context, the social and economic drivers of change and reform, and the local context of the TVET sub-sector in Nanning clearly demonstrate both the relevance of TVET and existing shortcomings of the TVET sub-sector. There is a clear requirement to adopt a demand driven focus in providing a contemporary, relevant and quality based education system in TVET to meet growing and changing demand for skilled graduates, who "posses the attributes necessary for job performance at an appropriate standard" (Gonczi, 1999) for the workforce requirement of the future.

100. The relationship between education and training and the workforce has gained major traction over the past few years and the importance of competency based training and education, in particular in the TVET sub-sector is widely acknowledged. The economic importance of education, and the

101. The link between economic and social importance of education, quality education and the concepts of competencies, CBC is a major initiative for ensuring quality and professional development for teachers

102. There are of course diverse understandings of the notion of competence. Gonszci and Hagger[186] note the potential benefits of interpreting and implementing a competency model of education and training based on an integrated view. The integrated model of competency merges both a tasks oriented focus with a attributes oriented focus or "knowledge, abilities, skills, and attitudes displayed in the context of a carefully chosen set of realistic professional tasks which are of an appropriate level of generality" (Ibid:405).

[186] Gonczi A and Hager P (2010), The Competency Model. In: Penelope Peterson, Eva Baker, Barry McGaw, (Editors), International Encyclopedia of Education. volume 8, pp. 403-410. Oxford: Elsevier.

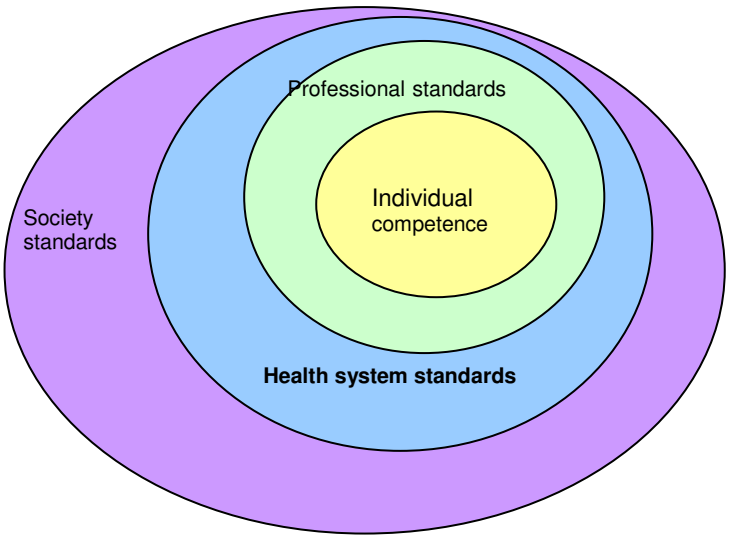

Figure 3: An integrated conception of competence[187]

103. CBC has a number of advantages. The most obvious advantage and significant underpinning of the widespread move to Competency based approach is the link between education systems, society and the economy, as noted earlier. However CBC also has the potential to provide clear linkages and pathways across educational levels . It promotes a very demand driven educational system which is highly appropriate for TVET sector. The very nature of competency based approaches promotes a much more authentic learning experience and learner or student centered learning approach.

104. The above factors all have the capacity in the longer term not only to provide significant social and economic benefits (in the case of this proposed project which has significant social aims) but also has the potential for certain of the above factors to contribute to more positive perception of TVET, through pathways to higher education, individual livelihood improvements, and better student outcomes. CBC provides for broad general skills essential to success in life beyond school. These include communication, adaptability, flexibility, problem solving, and the use of information technologies – all of which contribute to better outcomes at an individual level,

1. CBC links strongly to a process of life-long learning

105. While TVET has a direct role in supporting the skill needs of industry and employment and career needs and opportunities of workers, it is also located within wider national education and training system that has social and civic as well as economic purposes. TVET, by

[187] Source Dr Amanda Torr, A complex view of professional competence, https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC4QFjAA&url=http%3A%2F%2Fvital.new.voced.edu.au%2Fvital%2Faccess%2Fservices%2FDownload%2Fngv%3A38681%2FSOURCE25&ei=zclTUp3UIePmiAeq04GIDQ&usg=AFQjCNH6rb9-BRWzSYxrSjHXZiEeCAXbqA&sig2=kJ2lzTIHjukfh30OECGz8A&bvm=bv.53537100,d.aGc

contributing to the general knowledge and skills of individuals, makes an important contribution to these needs.

106. The adoption of competency based models for education and training, in particular in the TVET sector is widespread internationally. This mode of training has been successful in a number of countries like Singapore, Australia and New Zealand, to mention a few. The replication of the CBT in the Asia-Pacific region is widespread with some technical assistance. Gonczi and Hagger [188]looked at the adoption of competency models internationally and noted the substantial diversity in various initiatives which they argue reflect both differences of purpose and somewhat different understandings of competence.

107. The Vocational Education and Training (VET) sector in Australia introduced competency based education and training in the early 1990s which uses quite an integrated model of competence which tends to differentiate competency standards from course curricula, leaving the training providers to develop their own curricula. The somewhat "atomized" UK system of National Vocational Qualifications are tasks oriented and therefore quite narrowly focused. New Zealand and Scotland in comparison directly equate competency standards with units of curriculum. Gonczi and Haggard also reflect on the increasing globilisation of the world economy and the impact of this on countries of Latin America in particular Mexico, Costa Rica, Ecudor and Chile. All of these have introduced competency based approaches to TVET over the last decade or more. The development of competency based approaches in in Mexico have been of particular significance in Latin America – and *El Colegio Nacional de Educacion Professional Tecnica* (CONALEP) specifically developed competency based curriculum to meet national labor priorities and standards (a government led initiative) and is an oft cited example.

2. Implication for project design and delivery

108. To a large extent there was and still is a focus on needs analyses as a tool to determine the TVET system relevance. This is a one-sided view as there are differences, as international experience has shown, that learners' needs are only part of the full story. There is a need to take into consideration the demand side, i.e. the technical and employability skills, competencies and knowledge required by employers.

109. A 'needs-demands' responsive TVET system is required in PRC if it wishes to become regionally and internationally economically relevant. This has to be supported by: (i) the availability of a highly skilled labor force, where individuals have the necessary capacity to contribute to economic well-being of enterprises; (ii) a strong and reliable labor market information available to employers and employees alike; (iii) employer participation in TVET at all levels ranging from national TVET policy formulation to provincial level policy interpretation, to municipal

[188] v Gonczi A and Hager P (2010), The Competency Model. In: Penelope Peterson, Eva Baker, Barry McGaw, (Editors), International Encyclopedia of Education. volume 8, pp. 403-410. Oxford: Elsevier.

level policy implementation, to institutional level curriculum development, delivery modes, assessment and management; (iv) flexible skills development and skills supply.

110. “Competency-based training provides several advantages over timebased training, including greater learning effectiveness and use of time. Its requirements must be analyzed and addressed, including development, teacher training, equipment, and publicity and/or awareness-raising. Virtually all ADB projects have provided for the development of competency-based curricula, but sometimes without sufficient analysis of its feasibility. Good examples are the recent projects for Bangladesh and Maldives, for Competency Based Curriculum (CBC) (ADB, 2009; p56)”

111. Government policy and plans, in conjunction with socio-economic drivers of growth in TVET sub sector, clearly identify the need for increasing numbers of quality TVET graduates with a range of transferable skills directly relevant to the existing and future labour market needs, that contribute to both societal development and the advancement of an individuals livelihood opportunities.

112. The afore mentioned The National Medium and Long-term Education Reform and Development Plan (2010–2020), states that PRC’s curriculum at primary, secondary and TVET level is mostly outdated. One of the weaknesses of TVET curriculum in PRC is its characteristic, namely a lack of a historic perspective. New concepts are ‘solemnly’ proclaimed when in fact they represent minor modifications of early approaches, and conversely, an anachronistic dogmas and doctrines maintain a currency and uncritical acceptance of their present educational merits, that lagging far beyond international ‘best practice’.

113. There is to a significant extent a lack of inclusion of ‘soft skills’ within the existing TVET curriculum. Employers acknowledged that soft skills are becoming increasingly important and significant in TVET sub-sector. Like in many other countries, employers in PRC prefer employees who have a variety of skills, personal attributes, as well as technical skills. Thus industry considers employability skills as an essential requirement for recruitment. International experience shows that ‘hard skills’ contribute to only 15% of one’s success while the remaining 85% is made by ‘soft skills’. This is the era when employers want to hire, retain and promote persons who are self-directed, dependable, ethical, having effective communication skills, willing to work and learn and having positive attitude.

114. Whilst, TVET institutions in PRC are trying to improve their curriculum as to match international standards, the understanding and perhaps the political will to implement changes is not readily evident. There are internationally generally acceptable standards in TVET such as CBC practices and principles, which have been pioneered and implemented in Australian and German TVET systems. These are being adopted and used in many developing countries in Asia such as Vietnam, Cambodia, Laos and Indonesia, and more recently in African developing countries.

115. TVET Curriculum reform approaches in the two project schools (NNHS and NNVS) are to a large extend inward looking. There is little evidence that either the leadership or those responsible for curriculum development and implementation have been exposed to or have embraced international or even national 'best practice'. An ADB staff consultant observed during the initial project evaluation that TVET in Nanning is 'insular' and that the very notion of an integrated curriculum, incorporating theory and praxis, the dual learner centred teaching-learning process, such as the German dual TVET system, is to a large extent non-existent.

116. Given the above-cited situation, the prospect for developing, institutionalizing and implementing an integrated CBC at systemic and institutional levels does not seem too encouraging. However, research in the area of TVET integrated CBC as well as in learner-centered active based teaching-learning methods based on contemporary cognitive science suggests that some form of an integrated TVET curriculum is likely to emerge. This being true, the topic of integrated CBC may be destined to receive much attention in TVET.

III. RECOMMENDATIONS FOR CBC IN THE PROPOSED PROJECT

117. The project will develop and implement CBC development for both schools. This will enhance TVET quality and training capacity in NHS and NVTS through introduction of CBC in all its faculties and departments.

A. STRATEGIES

118. Development and implementation of a CBC requires major changes in education and training practices. It entails the development of CBC framework and associated student-centered active learning and authentic assessment. The project will support the development and implementation of CBC framework, the associated assessment instruments and the training packages to guide TVET provision in the two target schools.

119. The framework will strengthen generic non-discipline specific CBC development and implementation in both target schools and will be used as a framework for specific kindergarten teacher training at NVTS and for nurse training, elderly care training and rural doctor training at NHS. The framework will be used for improving and strengthening the curriculum in other majors in both institutions and can serve as a model at provincial and national levels, respectively.

120. Development and implementation of CBC in this project will (i) be used as a platform for innovation, by integrating theory and praxis, enhancing classroom based and institutional research, and promoting learner centered teaching-learning and 'authentic' assessment, in order to bring about innovative pedagogies; and (ii) lead to highly skilled and

employable graduates. Based on international experiences and best practices, the development of model CBC requires a paradigm shift.

121. The curricula will be (i) developed for the respective disciplines as a whole, (ii) based upon job functions, and (iii) developed across a number of levels and integrate employability skills and knowledge with technical skills and knowledge. In addition to the technical knowledge, skills and abilities, the curriculum will also include 'soft skills', such as (i) creative thinking, (ii) communication skills, (iii) problem solving skills, (iv) lifelong learning, (v) entrepreneurial skills, (vi) interpersonal skills, and (vii) team work and leadership. The CBC will (i) cover existing and strengthened discipline-occupational specific competencies (knowledge, skills, and abilities); (ii) introduce and incorporate discipline-occupational methods competencies (the know-how, creativity, problem solving); (iii) social-communicative competencies (team work and leadership, reporting, presentations); (iv) self-development competencies (self-realization in personal and professional life, lifelong learning, entrepreneurialism, community involvement.

122. The curriculum development process will be led by the Vice-Principal responsible for curriculum of the respective school. Strengthening the curriculum by formulating it as an integrated theory-praxis, CBC will be a catalyst for improving the quality of relevant TVET provisions and can be used as a blueprint for improving the relevance of TVET programs in Nanning and throughout and beyond GZAR. Instructors from both project schools will have access to intensive curriculum development training and in turn, will assist in training others across the system. The lessons learned from this curriculum development process will be disseminated to the GZAR TVET system as a whole.

B. ACTIVITIES

123. Working groups. The project will set up two working groups, one for the kindergarten teacher training program at NVTS and another one at NHS for nurse training. Each working group will include membership from the relevant industry advisory groups, industry practitioners, enterprises, NEB, representatives of school (students, teachers, leaders, and administrators), and project consultants in the two disciplines (kindergarten teaching and nursing).

124. Development of framework curriculum and core standards. With support of project consultants, each working group will undertake an occupational/functional analysis of tasks and will identify industry competency standards, to be validated by industry. In collaboration with the projects consultants, a review committee will review and validate the curriculum framework. Such curriculum framework is important as a blueprint for other TVET institutions offering courses or programs in the same industry area. The core standards embedded in the curriculum framework describe detailed processes that TVET institutions should follow throughout the curriculum development or curriculum strengthening processes. Core standards concentrate on areas, such as pedagogy and assessment, and not on content.

125. Develop core descriptors for employability skills to be contextualized across technical curricula. Employers increasingly require generic employability skills, which are at least as important, and in some cases more important, than technical skills and knowledge. Industry surveys internationally find that the most important skills and knowledge required by employers are generic skills related to 'how to work', for example: team work, communication skills, self-discipline, following instructions, applying technology, and numeracy. There is much evidence based on international research to show that these competencies are best learned in context rather than in the abstract. Yet in many TVET institutions in the PRC, they continue to be taught at the theoretical and at times abstract levels, and not connected to work practice. Both project TVET institutions indicated that they undertook industry surveys as part of curriculum development. However, these surveys focus mainly on technical skills or theoretical knowledge rather than core competencies. Therefore, curriculum reflects the tasks but not the integration of core skills and knowledge. Employability skills are critical crosscutting skills which are particularly important in the fast changing health sector. The project consultants, together with the working groups, will identify descriptors of employability skills and will ensure their inclusion in the revised curriculum.

126. Develop effectiveness and efficiency measures to assess the quality of the strengthened curriculum. The working group, together with the project consultants, will develop qualitative and quantitative measures to assess the quality of the strengthened curricula developed within the new curriculum framework. Assessment standards will include a focus on 'soft skills'. An assessment framework will be created with support from the consultants. Teachers will be trained to become proficient in CBC TVET assessment strategies and processes.

127. Improved curriculum template and guidelines development. The project will support NHS and NVTS in developing municipal level curriculum standards, a template, and guidelines on CBC development. The purpose of this template can be used as a platform to compare curricula across providers and across courses and leads to greater consistency in identifying the skills, knowledge, and attributes that graduates can apply when employed (see for example Bologna Process as an international 'best practice'). Based on the developed template, the project consultants and the respective working group will develop a guidebook for using the template.

128. Competency-based curriculum teaching: learning materials development. The project will develop generic training delivery strategies and interactive learner-centered teaching and learning materials, with an emphasis upon the practical application of skills, knowledge, and attitudes. Teaching and learning materials will be developed for the two demonstration majors, and will be formalized in consultation with the relevant working groups. The project will review training materials to identify opportunities to remove gender stereotypes. The project will also identify how information and communication technology for TVET, including training simulation software can be integrated into the curriculum. The project will provide for the cost of the teaching and learning materials, consultant and local experts, consultation workshops, and printing of the materials.

129. Curriculum and content development in selected new courses. Both schools will create new courses to address changes in curriculum reform and emerging changes and good practices in industry. The project will develop content and curriculum for the following new courses: (i) NHS: interpersonal communication, nursing occupational risk management, and elderly dental care; and (ii) NVTS: ethnic minority culture for kindergarten, kindergarten student assessment methods, addressing kindergarten education for children with special needs, early childhood education and development (o-3 years), and safety and security in kindergarten environments.

130. Competency-based curriculum training. Based on the above, project consultants on curriculum and training, in collaboration with NHS and NVTS, respectively, will design a training program on CBC development. The schools will review and validate the training module and the Teacher Training Divisions will organize the training delivery with the assistance of project consultants. The first group of trainees will be teachers/instructors from the two project TVET institutions responsible for CBC development. Subsequently this training can be delivered to non-project schools at their own cost.

131. Gender equity. The CBC strategies shall address gender equality and gender stereotypes and ensure that equity and participation are embedded in all aspects of CBC and associated teaching-learning methods and assessment methods.

C. SUSTAINABILITY

132. Sustainability will be achieved through the following approach:

(i) Institutionalization of CBC at school and program levels.
(ii) Networking and partnerships with others who are exploring the sustainability of CBC, nationally, regionally, and internationally, such as technical and further education institutions in Australia, community colleges in US, Canada, etc.

D. DISSEMINATION

133. Dissemination to be achieved through:

(i) Presentation of findings and lessons learned in the development and implementation of CBC in NHS and NVS and their respective programs at conferences.
(ii) Involvement of staff from NHS and NVS in curriculum development at other similar institutions.
(iii) Joint resource development for CBC implementation with other similar institutions in the municipality and beyond.
(iv) Conducting workshops for staff at other secondary vocational schools in Nanning and GZAR.

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ANNEXES

Annex 1. List of People/Institutions Consulted

The PPTA Team consulted the following people and Institutions and data from these consultations is drawn upon throughout this report.

Nanning No.4 School

Principal:	Ms Yang Xiaoling,
Vice Principals :	Mr. Chen Jianzi,
	Mr. Chen Shujian,
	Mr.Liang Qingkai,
	Mr.Liu Haidong,
	Mr. Zhou Shiyi
Director of the Office:	HUANG Xu
Chief of instruction section:	Liang Lai Ping
Deputy Chief of instruction:	Tan Zhiyi,
	Wei Dan
Chief of Student Branch:	Huang Yuanzhi
Deputy Chief of Student Branch:	Tan Hongbo
Chief of General Services Section:	Ningxiang Xing
Deputy Chief of General Services:	Bi Lele
Director of Enrollment and Employment Office:	Zhu Zhaoyi
Chief of Training Section:	Zhong Li Ming
Director of Teachers department:	Wei Jianhui
Deputy Director of Teachers department:	Deng Tingbo
Group Party Secretary:	Li Guifeng

Nanning Health School

Principal	Zheng Changsheng
Vice-Principal	Chen Yunying
Vice-Principal	Yang Lixing
Director of school PMO	Zheng Changsheng
Head of Teaching Division	Li Shaoming,

Nanning Development and Reform Commission

Project Director:	Huang Fulai
Section Chief:	Huang Liling
Staff Member:	Wu Chan
Staff Member:	Jiang Tingyu

Education Bureau, Nanning

Director of VEAE Division:	Mr Liao
Director Finance division:	Mr Yang
Director basic education Division:	Mr Zhou
Director Policy and Regulation Division	Ms Su

Shuangqiao Central Township Hospital (Wuming County):

Director of hospital	Mr Pan Zhenpeng,
Deputy director of hospital	Mr Meng Daohe,
Deputy director	Mr Li Yongqiang,
Deputy director of county health bureau	Mr Li Zejian,
Head of medical unit, county health bureau	Mr Lin weipeng,

Pinglu Village Clinic

Village doctor Mr Huang Tian,

Wuming County Hospital: Meeting

Deputy director of the hospital	Mr Pan Daiqing,
Deputy director of the hospital	Ms Lu Wosong,

TA 8158-PRC: Project Preparatory Technical Assistance

POVERTY AND SOCIAL ASSESSMENT, PSA

Author: B Olsen

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I. INTRODUCTION

1. This report is part of the Interim Report for the TVET PPTA and reflects the findings, reflections and conclusions and recommendations from the consultants working with the poverty, social, gender and ethnic minority issues. .

2. The Guangxi Nanning Vocational Education Development Project, (Technical and Vocational Education and Training in Nanning, TVET) aims at improving the capacity and effectiveness of social services focused technical and vocational education. It is aiming at improvement of No 4 Secondary School and Nanning Health School, thereby creating a group of qualified kindergarten teachers and nurses to address current skilled workers shortages and inadequate extension of social services.

3. Rapid improvement reflects the rapid transformation and development of the Guangzi Zhuang Autonomous Region (GZAR) with a rapid urbanization and industrialization. Over 90% of the students in the TVET schools are female and from rural areas.

4. The total resident population of Nanning City in 2010 was 7.07 million. Within it, female residents account for 48%. The sex ratio declined from 112.3 in 2000 census to the current 107.69 (population of females as 100). The registered urban unemployment rate is 3.7%. It is believed that there is a substantial number of migrant labor in the Nanning City, engaged in construction work. However, there are no figures available to support this observation, although it is quite clear from interviews in rural areas that this is the case.

5. Population in the age group of 0-14 accounted for 18.14 percent of the total population; the age group of 60 and over accounted for 12.86 percent, up by 2.30%, of which population in the age group of 65 and over accounted for 8.87 percent, up by 1.78% as compared with the 2000 population census. The change in the age composition of population reflected the accelerated process of population aging.

6. Han population accounted for 46.91% while ethnic minorities for 53.09%, of which, Zhuang Nationality for 50.9%. The ethnic minority terminology is used in China, rather than “indigenous people.”

7. The city of Nanning, whose Chinese name means "Southern Peace", is the capital of Guangxi Zhuang Autonomous Region, or Guangxi Province, for short. Nanning is located almost in the center of the province, slightly more southerly (nearer the coast - and the Gulf of Tonkin/ the South China Sea), and the city is almost perfectly centered, east to west, in Guangxi Province, which borders Vietnam to the southwest. The Chinese island of Hainan lies almost due south across the Gulf of Tonkin. Nanning is situated in a low-lying but hilly valley, surrounded by mountains. The southern part of the city is in fact built on the lower slopes of Mount Qingxiu.

8. Nanning has also been known in former times as Yong City due to its location on the northern bank of the Yong River, the principal southern tributary of the Xi River, the latter of which passes through the Guangxi Province city of Wuzhou before entering into Guangdong Province to

the southeast, where it eventually empties into the Pearl River Estuary (note that "xi" means "west" while "dong" means "east", and therefore Guangdong Province lies east of Guangxi Province). The Xi River is second only in terms of volume of flow to the mighty Yangtze River.

9. Nanning is home to some 30 ethnic minority groups. It is also the center of Zhuang ethnic minority culture, with over 90% of China's Zhuang ethnic minority living in Guangxi Province. Nanning is filled with the ethnic flavors of the Zhuang people during the Folk Song & Folk Arts Festival, which takes place in late October or early November each year, depending on the lunar calendar.

10. The province's other main minority groups include the Dong and the Miao, the Gin (a Vietnamese ethnic group), the Hui, the Shui, the Yao and the Yi (aka Lolo). In addition, Nanning does also have a small Christian enclave, though these are not of ethnic origin - a vestige, perhaps, of the Taiping Rebellion (1850 to 1864 - see the next paragraph). Not surprisingly, Nanning has several ethnic minority villages where the visitor can enjoy firsthand the music, dance, art - and fireworks - of the local minorities, especially during the ethnic festivals. Each of the minority groups represented here celebrates its own festival, where ritual dances and traditional ceremonies and competitions take place. In addition, the city has an Institute of Nationalities, or ethnic culture museum, that profiles the history and culture of each of the ethnic minority groups represented here.

11. One such ethnic minority village, Jintian Village, is the site where the Taiping Rebellion originated, which, at its height, numbered over 30 million revolutionaries who attempted to institute pervasive social reforms under the guise of a hybrid Christian rule (called the Taiping Heavenly Kingdom). Even Mao Zedung acknowledged the Taiping Rebellion as a legitimate attempt to rid the Chinese people of a corrupt, repressive feudal system. The Taiping Rebellion was the largest, most extensive uprising in Chinese History prior to the communist uprising that would eventually lead to the creation of the PRC.

II. RATIONALE

12. The proposed project will help improve the capacity and effectiveness of social services focused technical and vocational education and training (TVET) in Nanning. It will support improvement of No. 4 Vocational Secondary School and Nanning Health School, thereby creating a cadre of qualified kindergarten teachers and nurses to address current skilled worker shortages and inadequate extension of social services. The proposed project will be only the second Asian Development Bank (ADB)-financed TVET investment project in the People's Republic of China (PRC), and will play a demonstration role for the sector and provinces seeking to provide quality public social services.

13. Strengthening TVET is a priority under the PRC Government's Twelfth Five-Year Plan. The plan outlines measures to establish "a sound and sustainable basic public service system", with a focus on public education and medical care. The National Medium- and Long-term Education Reform and Development Plan (2010–2020) calls for preschool education to be developed so that by 2020, one-year preschool will become the norm, two-years universalized, and three-years popularized. The priorities in the National Health Care Reform include strengthening primary health care services and the grassroots health workforce. Thus, development of TVET for preschool education and health is urgently needed to meet these goals.

14. Nanning is the capital city of Guangxi Zhuang Autonomous Region (GZAR), one of the 12 less-developed provinces and autonomous regions in the western part of the PRC and a gateway to the Pan-Beibu Gulf and Association of Southeast Asian Nations (ASEAN) regions. The development of Nanning as a regional urban center has led to rapid urbanization and an annual growth rate of 15.5%. Industrialization has created a rising demand for skilled workers and extension of social services to provide balanced access and social development in rural and urban areas.

III. METHODOLOGY

15. A number of different methods have been considered for providing the information and data required for the poverty, ethnic minority, social and gender issues, given the resources allocated for this particular work. Methods considered have been formal surveys; focus group discussions and stakeholder interviews; review of documents and research; and interviews with concerned institutions.

A. FORMAL SURVEYS

16. Surveys have a number of restrictions if the statistical advantages of the survey are to be achieved. It is also a rather costly method of collecting data, the value, reliability and validity of which very often is doubtful. The first question to ask is why there should be a survey in the first place, and if so, whom are we going to engage? Ideally, a survey would be based upon a sample, and probably also be stratified so the sample would be representative of the whole population. This is however not possible in this context. One option to address this in the context of the proposed Project is to identify a specific community or village, which could be representative for the potential clients and endusers of the services of the institutions concerned. In this village/Community, a sample would ensure that at least within this community, we will achieve reasonable representative results. This issue will be further considered and discussed.

17. It has been deemed unnecessary to carry out a formal survey, as the results are not in proportion to the efforts involved. Rather, village/community meetings will be conducted to gather information and discuss the issues at hand, using the Focus Group Discussions approach. Criteria used for selection of village will be based upon poverty, gender and ethnic minority issues and origins of existing students.

B. DESK STUDY

18. The following documents have been reviewed:

    1. Statistics Yearbooks for Nanning Municipality of last three years
    2. 6th National population census data
    3. Various policies/requirement about health training, vocational training

19. Data of teachers and students of two schools, FSR for two schools, Preferential policies for vocational training of ethnic minorities or in the ethnic minority area.

20. Pertinent data and reports provided by various departments, including municipal Women's Federation, Poverty Relief Office, Education Bureau, Health Bureau.

C. FOCUS GROUP DISCUSSION, STAKEHOLDER INTERVIEWS, AND QUESTIONNAIRES

21. Focus Group Discussions, FGD, aims at interviewing and discussing with a group of people, e.g. villagers, and focus on particular issues, normally prepared as checklists. However, the FGD are also important venues for facilitating the villagers, as in this example, to put forward their views and also to set the agenda and raise issues which originally were not included in the Checklists. The FGD is similar to what sometimes is referred to as Stakeholder interviews, in which the participants are interviewed more in their capacity of stakeholders.

22. The following categories have been interviewed, together with other specialists: Teachers groups in two schools respectively, from different subjects (pre-school, nursing, and rural doctor); Students groups in two schools respectively, from different subjects as above; Nurses groups respectively in the hospitals at county and township level; and villager groups in poor and EM area.

23. Interviews with institutions have been conducted including various bureaus at the municipal level: Education Bureau, Health Bureau, Women's Federation, Poverty Relief Office, Ethnic Affairs Commission and Civil Affairs Bureau. Also employers like hospitals and clinics, and kindergartens have been interviewed..

24. In cooperation with other specialists, totally 83 questionnaires have been administered and answered by by kindergarten teachers, 53 by kindergarten directors, 50 by nurses, and 30 by hospital or clinic directors. Based on the questionnaires, the status of kindergartens and hospital or clinics have been established, as well as their demands and opinions for the teachers' training, and curriculum development. Besides, 15 elder people, 15 staff of elderly nursing institution, 38 nurses, 8 students and 40 teachers were questioned especially about elder cares.

D. OUTCOME

25. On the basis of the above studies, there are a number of outcomes to be expected.

    1. Baseline information regarding, inter alia, poverty levels, socio economic conditions, assessment of benefits and risks, mitigation, and recommendations to further strengthen the proposed Project with regard to design and implementation and monitoring.
    2. A poverty and social assessment, which also will outline a social action plan, a gender action plan and a summary poverty reduction and social strategy
    3. Assessing whether there is a need for an EMDP.

IV. SOCIO-ECONOMIC PROFILE OF THE PROJECT AREA

A. PROJECT AREA

26. Nanning Municipality have7.07million inhabitants and comprises 22,112 km2. 90% of the Zhuang population in China lives in GAZR. In Tabel 2 below, the administrative divisions are indicated.

Table 1. Administrative Divisions in the Affected Area（2010）

Region	Area Km^2	Town/ Township	Sub-district Office	Village Committee (rural	Community Committee (urban)
GZAR	236,700	1,126	108	14,355	1,714
Nanning Municipality	22,112	102	22	1,395	348
Xingning District	751	3	2	37	39
Qingxiu District	872	4	5	46	58
Jiangnan District	1,154	4	4	68	28
Xixiangtang District	1,298	3	10	77	80
Liangqing District	1,379	5	1	57	12
Yongning District	1,255	5	0	65	9
Wuming County	3,378	13	0	198	21
Longan County	2,277	10	0	118	13
Mashan County	2,345	11	0	145	6
Shanglin County	1,869	11	0	115	16
Binyang County	2,308	16	0	193	40
Heng County	3,464	17	0	276	26

GZAR: Guangxi Zhuang Autonomous Region

Source: Guangxi Statistics Yearbook（2011）, Nanning Statistics Yearbook（2011). In Nanning Municipality, there are 102 townships, 22 sub-district offices, 1,395 villages and 1,714 urban Communities, with a total population of some 7 million.

Table 2: Population Status in the Project Area（2010）

Region	Total Population	Grouped by Sex		Grouped by Hukou**	
		Males	Females	Rural	Urban
GZAR	5159	2,708	2,451	4,229	838*
		52.5%	47.5%	82.0%	18.0%
Nanning Municipality	707.3	369.8	337.5	515.4	192
		52.3%	47.7%	72.9%	27.10%
Xingning District	29.9	15.5	14.4	13.4	16.5
		51.8%	48.2%	44.8%	55.2%
Qingxiu District	60.7	30.7	30.0	18.4	42.3
		50.6%	49.4%	30.3%	69.7%
Jiangnan District	44.9	23.6	21.3	24.7	20.2
		52.6%	47.4%	55.0%	45.0%
Xixiangtang District	77.4	39.1	38.3	26.7	50.7
		50.5%	49.5%	34.5%	65.5%
Liangqing District	33.7	18.0	15.7	29.1	4.6
		53.4%	46.6%	86.4%	13.6%
Yongning District	24.0	13.0	11.0	20.7	3.3
		54.2%	45.8%	86.3%	13.7%
Wuming County	68.2	35.5	32.7	56.2	12.0
		52.1%	47.9%	82.4%	17.6%
Longan County	40.2	21.1	19.1	36.0	4.2
		52.5%	47.5%	89.6%	10.4%
Mashan County	54.3	28.4	25.9	50.0	4.3
		52.3%	47.7%	92.1%	7.9%
Shanglin County	48.8	25.4	23.4	43.5	5.3
		52.0%	48.0%	89.1%	10.9%
Binyang County	105.1	55.5	49.6	90.1	15.0
		52.8%	47.2%	85.7%	14.3%
Heng County	120.1	64.1	56.0	106.5	13.6
		53.4%	46.6%	88.7%	11.3%

* The balance between population of rural & urban and total population in GZAR does not tally exactly

** refers to registration

Source: Guangxi Statistics Yearbook（2011），Nanning Statistics Yearbook（2011）

There is a male dominance of 52.5% of the total population. Nanning Municipality is mainly rural, with some 73% of the population being registered in rural areas, leaving 27% registered in urban areas. In 8 of the Districts/County, the rural population is over 80%, and included in those are also the poorest areas.

Figure 1: Nanning Municipality

Table 3: Ethnic composition within Nanning Municipality

Region	Han	EM	Within: Zhuang	Other EM
GZAR*	62.8%	37.2%	31.4%	5.8%
Nanning Municipality*	46.9%	53.1%	50.9%	2.2%
Nanning Municipality**	42.0%	58.0%	55.9%	2.1%
Wuming County	13.2%	86.8%	86.5%	0.3%
Heng County	61.3%	38.7%	38.5%	0.2%
Binyang County	79.7%	20.3%	19.8%	0.5%
Shanglin County	15.3%	84.7%	77.9%	6.8%
Mashan County	17.3%	82.7%	74.2%	8.4%
Longan County	3.1%	96.9%	96.2%	0.7%
County Sub-total	42.1%	57.9%	55.8%	2.1%
Xingning District	36.6%	63.4%	61.7%	1.7%
Jiangnan District	49.2%	50.8%	49.5%	1.3%
Qingxiu District	52.6%	47.4%	43.9%	3.5%
Xixiangtang District	57.4%	42.6%	40.3%	2.3%
Yongning District	5.2%	94.8%	94.5%	0.3%
Liangqing District	10.3%	89.7%	88.7%	1.0%
District Sub-total	41.9%	58.1%	56.2%	2.0%

**Source from Nanning Municipal Police Dept by the end of 2011. This data of 2011 refers to registered persons

The data indicates that the ethnic minorities comprises 58% of the population, and among the ethnic minorities, the Zhuang constitute 50.9%, with the remaining ethnic minorities comprises very small populations.

27. In Table 4 below, some economic data is displaced, which indicates that the percentage of persons involved in the primary, secondary and tertiary sectors are 13,6%; 36.2 and 50.2% respectively. Some half of the work force is in the service sector. The per capita net income of urban residents is about three times that of rural residents.

Table 4: Economic conditions of the project area（2010）

Item	Per capita GDP	Percentages of primary, secondary and tertiary industries	Per capita annual disposable income of urban residents	Per capita net income of rural residents
Units	CNY	%	CNY	CNY
GZAR	18550	17.6: 47.5: 34.9	17,064	4543
Nanning Municipality	25622	13.6: 36.2 : 50.2	18,032	5005
Xingning District	-	-	19,911.8	5705.3
Qingxiu District	-	-	22,897.2	5733.6
Jiangnan District	-	-	16,611.5	5721.3
Xixiangtang District	-	-	16,114.2	5300.9
Liangqing District	-	-	15,583.2	5528.9
Yongning District	-	-	15,857.7	4968.2
Wuming County	21726	31.1: 47.9: 21	17,295.5	6114.4
Longan County	9774	38.2: 33.9: 27.9	14,352.1	3938.3
Mashan County	5827	32.5: 30.9: 36.6	14,378.6	3823.9
Shanglin County	6565	40.2: 25.7: 34.1	13,951.3	3862.8
Binyang County	10835	21.7: 41.6: 33.7	16,209.8	5209.4
Heng County	11347	31.5: 36.8: 31.7	16,737.6	5100.6

Source: Guangxi Statistics Yearbook（2011），Nanning Statistics Yearbook（2011）

28. In Nanning Municipality, 19.6% are engaged in the primary sector. 67.7% in secondary industries and 12.7 in tertiary industries. The contribution in net GDP for the different sectors is 17.7%, 36.2% and 50.2% for the primary, secondary and tertiary sectors respectively. Registered unemployment rate is low, probably reflecting an upward mobile economy. There is no information on magnitudes of migrant labor.

Table 5. Employment in the project area（2010）(10,000persons)

Region	Numbers and proportions of employees			Registered urban unemployment rate
	Primary industries	Secondary industries	Tertiary industries	
GZAR	1574	544	788	3.7%
	54.1%	18.7%	27.3%	
Nanning Municipality	204.8	709.1	133.4	3.69%
	19.6%	67.7%	12.7%	
Nanning City	58.4	41.8	95.6	-
	29.8%	21.3%	48.8%	
Wuming County	29.6	5.1	8.5	3.90%
	68.5%	11.8%	19.7%	
Longan County	16.2	1.6	3.6	3.58%
	75.7%	7.5%	16.8%	
Mashan County	13.8	3.2	3.3	3.42%
	68.0%	15.8%	16.3%	
Shanglin County	15.6	2.5	3.1	3.80%
	73.6%	11.8%	14.6%	
Binyang County	35	8.1	11.6	3.30%
	64.0%	14.8%	21.2%	
Heng County	36.2	8.5	7.6	3.14%
	69.2%	16.3%	14.5%	

Source: Guangxi Statistics Yearbook（2011），Nanning Statistics Yearbook（2011）

29. There are 31 institutions for higher education; 85 Secondary technical schools, 349 ordinary high schools and 1,515 primary schools in Nanning. Table 6 shows that most of the hospital beds are located in Nanning City.

Table 6. Basic Statistics on Health Institute, Hospital Bed and Personnel (2010)

Region	Health Institute					Hospital Beds (beds)	Personnel (persons)
	Total	Hospital	Health center	Community Health service center/station	Clinics, infirmary room		
GZAR	10,341	1728		285	7,891	143,695	225,914
Nanning Municipality	2,310	76	122	95	1,931	28,184	46,260
Nanning City	1,452	60	37	95	1,198	19,025	32,776
Wuming County	181	4	13	-	-	1,877	2,632
Longan County	74	2	12	-	-	1,158	1,683
Mashan County	96	2	11	-	-	1,023	1,488
Shanglin County	110	2	11	-	-	871	1,594
Binyang County	183	4	20	-	-	2,285	3,474
Heng County	214	2	18	-	-	1,945	2,613

Source: Guangxi Statistics Yearbook（2011），Nanning Statistics Yearbook（2011）

B. POLICIES AND PLANS

30. The Three-Year Action Plan for Preschool Education Development in Guangxi Zhuang Autonomous Region (2011–2013) will build, renovate, or expand 6,628 kindergarten schools to increase enrollment to 1.33 million and will need to employ an additional 21,000 new teachers.189 Currently, there is a severe shortage of qualified teachers, kindergartens, and medical personnel. In 2011, there were only 600 preschool teachers graduated in the province. Increasing the numbers and providing assessment, retraining, and certification to existing teachers are all urgent needs. Nanning Municipal Government (NMG) must build up the public social service system to respond to increased demand. In 2010, the national average was 7.6 health personnel per 1,000 urban residents but GZAR's average is only 3.6 health personnel per 1,000 residents. The Twelfth Five-Year Plan also responds to the challenge of an aging society by aiming to create improved elderly care and qualified personnel. There is an urgent need to expand the health services with well trained personnel.

31. The project supports the PRC's Twelfth Five-Year Plan (2011–2015) goals of reform of TVET and expansion of public services. The project will contribute to creating a qualified labor force and access to social services. Over 90% of the students in the TVET schools are female and from rural areas. The project aligns with the PRC's country partnership strategy of ADB and conforms to ADB's Education Policy and sector operations plan.

[189] Obs insert earlier/the numbers

Table 7. Brief overview of various policies relating to health and education

Item	Guangxi Zhuang Autonomous Region		Nanning Municipality
	Mid & Long-term Plan (2010- 2020)	Twelfth-Five Year Plan (2011-2015)	Twelfth-Five Year Plan (2011-2015)
Health Dept.	N/A	1.47 licensed physician and assistant physician for every one thousand people by 2015; 1.86 registered nursed for every one thousand people by 2015.	2.3 licensed physician and assistant physician for every one thousand people by 2015; 2.5 registered nursed for every one thousand people by 2015.
Education Dept.	Gross enrollment rate of children aged 3-6 one year before primary school will be 95% by 2020. Gross enrollment rate of children aged 3-6 three years before primary school will be 70% by 2020. Kindergarten students 1.51 million by 2020.	Gross enrollment rate of children aged 3-6 one year before primary school will be 85% by 2015. Gross enrollment rate of children aged 3-6 three years before primary school will be 60% by 2015. Kindergarten students 1.43 million by 2015.	Gross enrollment rate of children aged 3-6 one year before primary school will be 95% by 2015. Gross enrollment rate of children aged 3-6 three years before primary school will be 80% by 2015. Kindergarten students 0.216 million by 2015.
	Secondary TVET students 0.90 million by 2020. CPD for 13 million person time.	Secondary TVET students 0.87 million by 2015. CPD for 11 million person time.	Secondary TVET students 0.085 million by 2015. N/A
Civil Affairs Dept.	N/A	The number of beds inside elderly nursing houses will be 0.1 million with an increase rate of 15% annually. 3% of elderly population can enjoy the service by nursing houses or community elderly care. 1000 Community elderly care stations. 0.3 million elderly people will enjoy elderly care service at home.	The number of beds inside elderly nursing houses will increase 15% annually. 3% of elderly population can enjoy the service by nursing houses or community elderly care. N/A
Elderly Working Committee	N/A	Elderly care stations will cover all urban communities. Above 80% town and township and above 30% villages will establish	Elderly care stations will cover all urban communities. Above 80% town and township and above 50% villages will establish

Item	Guangxi Zhuang Autonomous Region		Nanning Municipality
	Mid & Long-term Plan (2010- 2020)	Twelfth-Five Year Plan (2011-2015)	Twelfth-Five Year Plan (2011-2015)
		comprehensive community service stations including elderly care service. Will expand or rebuild 350 township elderly nursing houses; newly build 100 model township elderly nursing houses; rebuild 5000 branches of elderly nursing houses. The number of beds inside elderly nursing houses will be over 0.2 million. Beds for every 1000 elderly people will be over 30.	comprehensive community service stations including elderly care service. Every county or district will have one model elderly nursing house. 40% town and townships will have social welfare service center. Beds for every 1000 elderly people will be over 30.

32. In the context of the various policies and plans presented in Table 8, the proposed project will play an important role in developing efficient and relevant teaching institutions and curriculum. This will eventually be extended to other TVET institutions.

C. ETHNIC MINORITIES, EM

33. In Guanxi Zhuang Autonomous Region, GZAR, the total residential population population is 46.03 million, with the Han comprising some 62.8% and ethnic minorities 37.2% of the population. Among the ethnic minorities, the total number of which amounts to 50, Zhuang constitute 31.4%.

34. Within the Nanning Municipality, with a total population of 7.07 million inhabitants, the Han constitute 47% and the Ethnic minorities 53% with the Zhuang comprising 51% of the ethnic minorities, leaving some 2.2% for various nationalities like Yao, Miao, Mulao, Dong and Hui,. They comprise, in descending order, from 0.93% to 0.15% of the total population. In Table 10, figures are presented for the different Counties and Districts of Nanning Municipality.

35. There are 50 nationalities in Nanning Municipality including Han, Zhuang, Yao, Miao, Mulao, Dong, Hui, etc. Han accounts for 41.86% of the total population of Nanning Municipality while Zhuang 56.18%. The other major nationalities whose proportion is over 0.15% are Yao, Miao, Mulao, Dong, Hui. See Table 9.

Table 8. Ethnic composition within Nanning Municipality

Region	Han	EM	Within: Zhuang	Other EM
GZAR*	62.8%	37.2%	31.4%	5.8%
Nanning Municipality*	46.9%	53.1%	50.9%	2.2%
Nanning Municipality**	42.0%	58.0%	55.9%	2.1%
Wuming County	13.2%	86.8%	86.5%	0.3%
Heng County	61.3%	38.7%	38.5%	0.2%
Binyang County	79.7%	20.3%	19.8%	0.5%
Shanglin County	15.3%	84.7%	77.9%	6.8%
Mashan County	17.3%	82.7%	74.2%	8.4%
Longan County	3.1%	96.9%	96.2%	0.7%
County Sub-total	42.1%	57.9%	55.8%	2.1%
Xingning District	36.6%	63.4%	61.7%	1.7%
Jiangnan District	49.2%	50.8%	49.5%	1.3%
Qingxiu District	52.6%	47.4%	43.9%	3.5%
Xixiangtang District	57.4%	42.6%	40.3%	2.3%
Yongning District	5.2%	94.8%	94.5%	0.3%
Liangqing District	10.3%	89.7%	88.7%	1.0%
District Sub-total	41.9%	58.1%	56.2%	2.0%

*Source from 6th National Population Cencus in 2010. The data is of residential population.

**Source from Nanning Municipal Police Dept by the end of 2011. This data of 2011 refers to registered persons

Table 9. Composition of ethnic nationalities in Nanning Municipality

Nationalities	Percentage
Han	41.86%
Zhuang	56.18%
Yao	0.93%
Miao	0.17%
Mulao	0.16%
Dong	0.15%
Hui	0.15%

**Source from Nanning Municipal Police Dept by the end of 2011.

36. The total number of students and the proposed increase intake is indicated in the Table 10below.

Table 10. Total number of students in respective school and proposed future intake

	Health School	Vocational School
Without project: number of admissions/annum	3,448	788
With project: number of admissions/annum	4,500	1,600

37. Students are also recruited from outside the Nanning Municipality as indicated in Table No 11 below. Within Nanning Municipality, some 15% of the students come from poor areas. The number of students originating from outside Nanning municipality amounts has increased from 27% in 2009 to some 56% in 2012.

Table 11. Vocational School Student Sources

Grade	Inside Nanning Municipality	Within: From poor areas*	Outside Nanning Municipality
2009	73.2%	15.9%	26.8%
2010	74.5%	12.1%	25.5%
2011	65.7%	18.4%	34.3%
2012	44.4%	12.4%	55.6%

Source: from No.4 Vocational School

*: poor areas refer to three national poverty counties and one GZAR level poverty district, i.e. Shanglin, Longan, Mashan counties and Yongning District.

Table 12. National Health School Student Sources

Grade	Inside Nanning Municipality	Within: From poor areas	Outside Nanning Municipality
2009	92.8%	19.8%	7.2%
2010	95.0%	17.0%	5.0%
2011	86.8%	14.9%	13.2%
2012	76.8%	12.6%	23.2%

Source: from Nanning Health School (NHS)

*: poor areas refer to three national poverty counties and one GZAR level poverty district, i.e. Shanglin, Longan, Mashan counties and Yongning District.

38. Table 13 indicates the teachers and students in different subjects and their ethnic origin.

Table 13. Teachers - students and ethnic % at NHS and from N4VSS

Item	School	Subjects		
		pre-school	Nursing	Rural doctor
Teachers	No.4	114	-	-
	Health	-	50	13
EM teachers	No.4	70	-	-
	Health	-	34	7
EM Proportion		61.4%	68.0%	53.8%

Item	School	Subjects		
		pre-school	Nursing	Rural doctor
Students	No.4	2467	-	-
	Health	-	4,880	340
EM students	No.4	1,310	-	-
	Within it: Zhuang	1,231	-	-
	Health	-	3,450	200
	Within it: Zhuang	-	3,232	171
EM Proportion		53.1%	70.7%	58.8%
Zhuang Proportion		49.9%	66.2%	50.3%

Source: data acquired from the two schools, EM=Ethnic Minorities

39. The representation of students and teachers in the two schools and in the various subjects as indicated in Table 12 above shows that the ethnic minorities in general are well represented and by and large reflects the population composition as a whole. It could also be a reflection of the schools attempts to recruit students from rural areas. According to the figures obtained, the non-Zhuang ethnic minorities are also well represented in relation to their numbers.

40. Virtually all students are exempted from tuition fees. There are also a number of policies which apply to support poor persons, remote areas as listed below:

- *PRC's Vocational Education Law* (issued in 1996) Item 7 "The state will take measures to develop rural vocational education, especially to support the TVET development of EM area, remote and poor area."

- *Nanning Municipality EM Education Regulation* (issued in 2005) Item 16 "municipal-owned TVET should recruit more students from poor and remote EM area; appropriate tuition reduction or exemption and employment help should be provided for EM students from poor families."

- *Nanning Municipality EM Develop Twelfth-Five Planning* (issued in 2011) "Continuously doing well in basic education and vocational education … vigorously develop vocational and technology education and training and make efforts to improve labor quality in the EM area."

41. The Project will improve the extent and quality of the two Schools in Nanning Municipality. All students will benefit from Project interventions and this includes the ethnic minorities. The project will help the students to obtain skills and access to employment opportunities. The rate of employment after graduation is very high. There are scholarships and other financial support, and most of them are distributed according to poverty criteria and there is no such specific support for ethnic minorities. The studies and consultations so far indicate that ethnic minority students are well integrated in the two schools and are likely to remain so in the future.

42. The Zhuang ethnic community is recognized as a distinct ethnic group and do also present themselves as such and do maintain their own culture, displayed in clothing, language, music and traditions. At the same time, they are well integrated in the mainstream society, as they themselves constitute the mainstream. Their language is still maintained, and most of the Zhuang speak Mandarin. The language was transformed in the 1960´s, from using Chinese characters to using the Latin alphabet, although it appears that it is not used very often. It is difficult to claim that this major ethnical group has been discriminated, and as a response to their unique ethnical identity, the Guangxi Province is an autonomous province, the Guangxi Zhuang Autonomous Region, GZAR.

43. There are some areas of concern which not yet has been addressed, such as resettlement issues, and the desire to promote return to rural areas for work of the graduated students. This relates to another factor

which should be further explored. Due to labor migration, grandparents are often caretaker of the children. In a development context, it would be desirable that the children get access to professional pre-school teachers. This is very likely to support rural development. The Schools have suggested means for reaching rural areas for recruitment of students, and this is likely to actually increase the intake of ethnic minorities.

D. GENDER

44. There are more men than women in Nanning Municipality than would be expected from a natural reproduction. This might reflect migration to work in urban areas or be related to some other causes.

Table 14. Population profile and gender

Unit: 0,000 persons

Region	Total Population	Grouped by Sex	
		Males	Females
GZAR	5159	2,708	2,451
		52.5%	47.5%
Nanning Municipality	707.3	369.8	337.5
		52.3%	47.7%
Xingning District	29.9	15.5	14.4
		51.8%	48.2%
Qingxiu District	60.7	30.7	30.0
		50.6%	49.4%
Jiangnan District	44.9	23.6	21.3
		52.6%	47.4%
Xixiangtang District	77.4	39.1	38.3
		50.5%	49.5%
Liangqing District	33.7	18.0	15.7
		53.4%	46.6%
Yongning District	24.0	13.0	11.0
		54.2%	45.8%
Wuming County	68.2	35.5	32.7
		52.1%	47.9%
Longan County	40.2	21.1	19.1
		52.5%	47.5%
Mashan County	54.3	28.4	25.9
		52.3%	47.7%
Shanglin County	48.8	25.4	23.4
		52.0%	48.0%
Binyang County	105.1	55.5	49.6
		52.8%	47.2%
Heng County	120.1	64.1	56.0
		53.4%	46.6%

45. The total resident population of Nanning City in 2010 was 6.66 million. Within it, female residents account 48.15%. The sex ratio declined from 112.3 in 2000 census to the current 107.69 (population of females as 100). The female proportion is increasing.

E. LOCAL WOMEN'S PROGRAM

46. After the 11th Five-Year Plan, the status of women in Nanning Municipality has improved improving. Women are highly involved in political affairs. In 2010, the leadership of all the municipality, counties or districts included female officials.Of the leadershship, 57.1% are female,and 23% of all civil servants in the municipal departments are female. Women's educational level increased steadily. In 2010 primary school net enrollment rate of school-age girls reached 99.89% and, junior high school gross enrollment rate of school-age girls reached 113.98%. The level of women's health improved, Delivery rate in the hospital increased from 80.34% in 2000 to 99.79% in 2010. Maternal mortality from 47.17/100 thousand in 2000 dropped to 24.21/100 thousand in 2010.

47. Activities that the municipal Women's Federation (MWF) took in 2012 relevant to the present project included:

(i) Increase female employment: Cooperated with municipal Human Resource and Labor Safeguard department, more than 70 employment fairs especially for women have been held with about 85.8 thousand vacancies. 715 training classes about housekeeper servants and baby-sitters were provided, 57.3 thousand women were trained and 7.2 thousand found new jobs.
(ii) Promote culture development of female EM. Cooperated with municipal Technology Bureau and Ethnic Minority Affairs Bureau, MWF organized the female EM performance including singing folksongs, playing eighty Zhuang music instruments, and bamboo pole dancing.
(iii) Strengthen children's consciousness of EM culture heritage. Cooperated with GZAR Culture Department and GZAR Museum, 126 children from various kindergartens and primary schools in Nanning Municipality showed diverse EM dresses in the GZAR Museum.
(iv) Enhance concerns about rural children whose parents are migrant workers. Eight meetings about home teaching were held in three counties or districts. With the help of Nanning Female Entrepreneurship Association, presents at about CNY 30,000 were given to one local primary school for those children whose parents are migrant workers.
(v) Continue implementing Spring Blossom Plan. Totally 124 poor female students in primary or middle schools were financed to study. Of which, 30 were newly listed in 2012.

Table 15. Proportion of female teachers

Item	School	Majors		
		Pre-school	Nursing	Rural doctor
Teachers	No.4	114	-	-
	Health	-	50	13
Female	No.4	63	-	-
	Health	-	39	3
Female Proportion		55.3%	78.0%	23.1%

Source: from two schools

48. According to Nanning Municipal Education Bureau, the female teachers of TVET schools account for 46.7% of total TVET teachers.

Table 16. Proportion of female students

Item	School	Majors		
		Pre-school	Nursing	Rural doctor
Students	No.4	2467	-	-
	Health	-	4880	340
Female students	No.4	2435	-	-
	Health	-	4749	136
Female Proportion		98.7%	97.3%	40.0%

Source: from two schools

49. In the pre-school training and in nursing, the overwhelming majority are females. The school is trying to promote more males to attend the courses, but with very limited results.

Table 17. Female staff of 53 questioned kindergartens

Item	Total	Female	Proportion
Staff	2,014	1,802	89.5%
Teachers	1,166	1,166	100.0%
Teachers From Pre-school Education major	954	954	100.0%

Source: from questionnaires to kindergarten directors

Table 18. Female staff of 30 questioned hospitals or clinics

Item	Total	Female	Proportion
Staff	10490	7461	71.1%
Doctors	3202	1494	46.7%
Nurses	4441	4349	97.9%
Doctor/Nurse certificated	6853	5472	79.8%
Rural doctors	417	120	28.8%

Source: from questionnaires to hospitals or clinics directors

F. POVERTY

50. The rural poverty line and standard of Nanning municipality is the same as the national standard, i.e. CNY 2,300 per capita per year.

51. In 2012 there are three nationally recognized poor counties in Nanning Municipality, i.e. Mashan County, Shanglin County and Longan County whose rural poverty rates were near 50% in 2010. Besides, Yongning District is a provincial poor county. Its rural poverty rate was 32.8%.

Table 19. Rural Poverty rate

Region	Poor villages	Rural poor population * (0,000persons)	Rural Poverty Rate *
Nanning Municipality	224	99.23	19.25%
Xingning District	3	0.85	6.35%
Qingxiu District	3	1.10	5.97%
Jiangnan District	4	1.45	5.85%
Xixiangtang District	3	2.03	7.62%
Liangqing District	4	1.55	5.31%
Yongning District	15	6.79	32.81%
Longan County	34	16.36	45.45%
Mashan County	39	22.81	45.62%
Shanglin County	33	19.38	44.56%
Wuming County	25	4.90	8.71%
Binyang County	26	9.61	10.67%
Heng County	35	12.40	11.64%

Source : From Nanning Municipal Poverty Alleviation Office
*Data is of 2010.

MLS, Minimum Living Standard

52. In 2012, the minimum living standard for urban residents in Nanning City is CNY 360 per capita per month while the rural standard is CNY 2300 per capita per year. Food supply standard for Five Guarantee Family (refers to certain guaranteed items such as clothing, food, housing, medicinal etc.) includes rice of no less than 15 Kg, edible oil of no less than 0.5 Kg, and cash of no less than CNY 170 per capita per month. If all supplied in cash, it should be no less than CNY 250 per capita per month.

53. The counties administered by Nanning Municipality could set their own standards according to their own economic status. For example in Wuming County, the minimum living standard for urban residents is CNY 350 per capita per month while the rural standard is CNY 2200 per capita per year. Also, the standards for the three national poverty counties are much lower than the city standards.

G. THE RURAL – URBAN DIMENSION

Table 20. Proportion of teachers from rural area

Item	School	Majors		
		pre-school	Nursing	Rural doctor
Teachers	No.4	114	-	-
	Health	-	50	13
From Rural	No.4	96	-	-
	Health	-	28	8
Rural Proportion		84.2%	56.0%	61.5%

Source: From two TVET schools

Table 21. Proportion of students from rural areas

Item	School	Majors		
		pre-school	Nursing	Rural doctor
Students	No.4	2467	-	-
	Health	-	4880	340
From Rural	No.4	2276	-	-
	Health	-	4757	284
Rural Proportion		92.3%	97.5%	83.5%

Source: From two TVET schools

54. An overwhelming majority of the students are from rural areas. This is probably related to the urban students having more academic options, as well as preferences for more traditional academic studies.

Table 22. Proportion of poor students out of the total

Item	School	Majors		
		pre-school	Nursing	Rural doctor
Students	No.4	2467	-	-
	Health	-	4880	340
Poor	No.4	683	-	-
	Health	-	1750	140
Poor Proportion		27.7%	35.9%	41.2%

Source: From two TVET schools

55. The assistant doctors license (rural doctor) means that they have to go back to rural/remote areas.

56. They can only work in the village clinics or township clinics in rural and /or remote areas.The title of the document is 'GZAR Student Cultivation Plan (2011-2015) of TVET Rural Doctor Program for Cultivating Licensed Assistant Doctor Serving for Remote and Poverty Area'. It was issued by GZAR Health Department on April 12, 2011. The document specified that the graduates of Rural Doctor Program can only work in village clinics or township hospitals but in listed remote and poor areas after they got the license of assistant doctor though examination. When recruiting, students should be informed of this requirement.

Table 23. Students of No.4 Vocational School enjoying preferential policies

Time	Tuition Exemption	National Subsidy
2012 Autumn Semester	98.0%	61.9%
2011 Autumn Semester	35.9%	98.5%

Source: From No. 4 Vocational School

Table 23b National Health School Students enjoying preferential policies

Time	Year	Tuition Exemption	National Subsidy
2012 Autumn Semester	2012	71.7%	33.8%
2011 Autumn Semester	2011	20.0%	51.4%

Source: from Nanning Health School (NHS)

57. There are less students receiving subsidies at the Health School, than in the pre-education school. This is consistent with the recruitment pattern of the students in respective group.

58. Since the autumn of 2012, according to the latest preferential policy[190], tuition fee could be exempted for three years for all TVET students from rural area (including county and town/township) and from urban poor families. The tuition fee for GZAR administered TVET is CNY 2,200 per capita per year and CNY 2,000 for municipality administered TVET. National subsidy policy also changed. Since the autumn of 2012, newly recruited TVET students of agriculture majors or from poor

[190] Notice of Implementation of the Opinion of Expanding TVET Tuition Fee Exemption Policy and Further Improving National Subsidy System, co-issued by GZAR Finance, Education, Human Resource and Social Safeguard, and Price departments on Dec 25, 2012.

families can enjoy two years of living subsidy at CNY 1,500 per capita per year.

59. Before the policy change, TVET students from rural poor families or of agriculture-related program could enjoy tuition fee exemption. TVET students from rural area (including county and town/township) and from urban poor families could enjoy two years of living subsidy.

60. Thus, with the issue of new policy the scope of TVET students who can enjoy tuition fee exemption expanded. Although the percentage of TVET students who can enjoy living subsidy decreased [191](see Table 22), in general students could benefit more from the new policy because the tuition fee is higher than living subsidy.

V. Social Benefits, Impacts and Risks of the Project

A. SOCIAL BENEFITS AND IMPACTS

61. The proposed project contains considerable career opportunities for both men and women. At present, these opportunities are mainly seized by women, predominantly from rural areas. The present situation, where there are a number of work opportunities for men in the construction sector in the rapidly growing urban areas, the women have not had the same possibilities for employment. The training through TVET provides career opportunities and employment for mainly rural women. The employment rate for students graduated from TVET is almost 100% and this must be seen as a very successful program. The schools are intent on and will be supported to promote more male students, so the benefits will also accrue to male members of the society.

62. There is a large demand for the services and training provided by the TVET schools. Nurses and preschool teachers are in very low numbers, compared to the Nanning Municipality and Government of China policies and targets. The recent policies for compulsory pre-schools will also ensure that there will be good employment opportunities.

63. The TVET could further support rural development in providing training courses, modified to suit opportunities, e.g. for setting up private preschools in rural areas. The training would inter alia include entrepreneurship.

64. TVET students are predominantly from rural areas – some X% and Y%of the students belong to ethnic minority groups. By and large, the proportions reflect those of the Nanning Municipality as a whole. It seems as if academic studies are not easily available, for economic, social, and traditional reasons, among the rural areas and among the ethnic minorities, why the TVET offers excellent possibilities to still get a professional training and employment. The TVET offer certification

[191] Since 2013 Autumn Semester the percentage of TVET students who can enjoy living subsidy will decrease to about 20%.

and an official approval and recognition of a professional status. Plus employment.

65. In a wider perspective, the TVET could eventually be an important component in rural development. As it is, parents migrate to urban areas for work, and often the children are left with their grandparents. This might not be conducive to a favorable upbringing – a professional preschool is likely to give the children a better start in life, and also facilitate their ongoing schooling and this is likely in the end to support rural development in general.

B. SOCIAL DEMANDS

66. Demand for the professions provided by TVET is large. This has been recognized by the Government, who is intent on expanding health services and also make compulsory pre-schools for the whole country. At present, there is a shortage of medical services in rural as well as in urban areas and to rectify this, new policies and investments are in place.

C. SOCIAL RISKS

67. A downturn in the global, national and local economy could jeopardize the proposed project. The Nanning Municipality is committed, and it is difficult to see any major risks, apart from a downsizing of the proposed project.

68. Another aspect is if the proposed project contains risks for the students. It is very difficult to see any risks in the foreseeable future, as the services offered – nursing, rural health doctors, pre-school teachers – are in large demand, and will be so for a while.

69. The disproportion between men and women in the student population can constitute a minor risk, if not addressed. It is likely that the professions would get a better status, and also salary, if there was a more genderbalanced situation. Often, when men are joining a predominant profession, salaries and status tend to rise.

VI. POVERTY ANALYSIS

A. POVERTY PROFILE

70. Poverty profile has been discussed above and describe statistically. In summary, there is still a substantial amount of the population in Nanning Municipality which is considered poor according to national criteria. Those appear concentrated into three counties and one District. There is also a rural bias towards poverty. The schools recruitment base is generally rural areas, and mainly females, which partly reflects that the schools are within reach of poor students (some 15% of the students from Nanning Municipality are defined as poor), and also responds to the poverty profile of the area.

B. POVERTY REDUCTION PROGRAM IN NANNING

71. There are a number of different poverty reduction programs .Below are listed the major poverty reduction programs in Nanning Municipality.

72. Through implementing the 11th Five-Year Plan of Poverty Alleviation, at the end of 2010, the following has been carried out:

(i) Large-scale decrease of rural poor population. As per the previous rural poverty standard, the rural poor population decreased to 224.4 thousand. Net income per capita of farmers in 317 poor villages increased from 1,633 in 2005 to 3,293 in 2010.
(ii) Obvious infrastructure improvement in rural poor area. CNY 0.35 billion were invested in infrastructure improvement of rural poor area. Totally 2111 roads of 6249Km were built and all 317 poor villages had access to the highways.
(iii) Industry development for poverty reduction. CNY 52.4 million were invested in 129 industry development projects for poverty reduction. The projects benefited about 130 thousand farmer households in planting mulberry, sugar crane, and Chinese herbs, and breeding pigs, oxen, sheep, and chickens.
(iv) Skill improvement of poor rural farmers. Totally 125 thousand person times of training has been provided. It helped labors from poor villages to work better for industry development projects, or find off-farm jobs in the urban area.

73. In 2012, the activities conducted by Nanning Municipal Poverty Alleviation Office especially in four poverty counties/district included:

(i) In each poverty county/district, one Example Base of Industry Development for Poverty Reduction was established. In each base, more than 1000 *mu* of land was planted Chinese herbs or a kind of local fruit called ‘Baixiangguo’.
(ii) Four poverty counties/district were financed by other developed districts. E.g. Longan County received CNY 5 million each from Xixiangtan District and High Technology District. Shanglin County received CNY 5 million each from Xingning District and Jiangnan District.

C. POVERTY REDUCTION EFFECT BY THE PROJECT

74. The project provides education and employment opportunities. Some 25% of the students are poor according to national standards, and most of the students, some 90%, come from rural areas. The project is ethnic neutral, as the students by and large reflect the ethnic composition in the Nanning Municipality at large. The project provides substantial benefits to the students in terms of career opportunities and employment. This at present mainly accrues to women, who are in large majority in several of the subjects. In terms of ethnicity, the student population by and large reflects the ethnical composition of the population at large in Nanning municipality.

VII. GENDER ANALYSIS

75. The most important gender aspect of the TVET is that it provides education, career opportunities and employment for women. An overwhelming majority of the students are also women and come from rural areas. For poor and rural population, migratory work has mainly been available for men – in the construction sector for instance – whilst the opportunities for women have been limited. With TVET, there are not only employment opportunities, but also possibilities for a professional career. However, the female dominance and the lack of men in the preschool and nursing professions constitute a problem, which is further discussed below. Gender issues in a statistical context has been shown and discussed in IV D. Gender.

A. WOMEN DEMAND AND ANTICIPATIONS

1. Demand for male pre-school teachers:

76. Of 48 kindergarten directors who responded, 24 (50.0%) stated that they wanted more teachers. And 46 (95.8%) demanded for male teachers. They explained that male teachers, who are masculine, brave, good at game design and abstract thinking, could give children different guide from that the female teachers did. Many kindergarten directors thought they needed at least one or two male teachers to conduct the physical education, and gender ratio of about 1:5 (male as 1) would be reasonable. But they also realized the difficulties to recruit male teachers. Many boys do not want to be pre-school teachers mainly because i) it is thought as a female area and thus their family many may want them to do it or they could be laughed at by friends; ii) the salary and social status is not good enough comparing with other occupations taken by man. According to the teachers in the No. 4 Vocational School, since the shortage of male teachers, some male graduates were shared by several kindergartens in teaching PE and thus had higher salary than their female graduates.

2. Demand for male nurses

77. Of 17 hospital or clinic directors who responded, 14 (82.3%) stated that they wanted more male nurses. Directors of municipal or county

hospitals expressed that male nurses are strongly demanded for the Intensive Care Unit (ICU), emergency room and operating room because they are stronger than female nurses when taking the hard work. Although directors of township hospital and village clinic said they wanted male nurses, they did not want many and either not urgently mainly because of no such departments.

78. The reasons provided in the questionnaires for men do not want to be nurses include: i) low social status of nurse; ii) same salary with female nurses although male nurses might have more hard work; iii) opposition from families, especially many rural families cannot accept their sons to be nurses; iv) potential opposition from patients, who think female nurses more considerate and careful than male one.

B. PROJECT IMPACTS ON GENDER

79. Apart from providing professional careers for both men and women (although men are to a very small extent represented in the education, so far), the TVET provides a basis for an increased number of preschools and medical services. This would provide preparations for the children for the coming school, and also enable women to make a choice of taking up a working position outside the home. It would also increase the availability of medical seervices.

C. GENDER ACTION PLAN

80. See the Social and Gender Action Plan, SGAP, in the Appendix.

VIII. ETHNIC MINORITY

81. The project focuses on providing quality TVET education for students who are mostly from rural areas, primarily women, and include a large percentage of ethnic minorities. Project design features include (i) development of ethnic minority curriculum in the kindergarten training base; (ii) inclusion of social indicators for analysis in the tracer studies, impact assessment, and the project performance monitoring system; (iii) human resources outreach for recruitment in rural and poor areas; (iv) creation of elderly care curriculum and bridging program for the nursing major; and (v) targets for women's participation in the teacher and management training opportunities.

82. Participatory approaches and the proposed project activities strengthen inclusiveness and empowerment of the poor and vulnerable in project implementation. Participatory approaches include creation of core teacher training network and process, curriculum development on ethnic minority culture, and development of a human resources strategy with a focus on inclusion in recruitment.

83. Consequently, the Poverty and Social Assessment concluded there will be no negative impacts on ethnic minority communities surrounding the TVET institutions or students and staff at the project schools. Ethnic minorities make up more than half of the student and staff population in the two project schools, with the majority coming from the Zhuang ethnic minority. The consultations have determined that there are affirmative government policies for ethnic minority groups for

admissions to TVET education including specific subsidies to ensure affordability and access. Ethnic minority students in the project institutions will benefit equally from project.

84. As in paragraph 17 SR3 of the ADB Safeguard Policy Statement (2009), the project has included elements of an indigenous peoples plan in the overall project design. Design elements to ensure ethnic minority inclusion are included in several of the TVET capacity building components. For example all secondary school TVET students receive free tuition from the Government and special subsidies are given to poor, rural and ethnic minority students.

IX. PARTICIPATION

A. PARTICIPATION IN THE PROJECT PREPARATION STAGE

85. Below is listed the various meetings and field visits carried out in the preparations of the PPTA.

Table 24. Participatory activities during the PPTA

Time	Institutions	Activities	Findings
March 5, 2013	Shuangqiao Town Hospital	FGD consulting with doctors and nurses	As an employer, town hospital's requirements for nurses and nursing graduates; Their opinions of curriculum improvement and the present Project; Present status of doctors and nurses' in-service training; The relationship between township hospital and village doctors;
	Wuming County People's Hospital	FGD consulting with doctors and nurses	As an employer, county hospital's requirements for nurses and nursing graduates; Their opinions of curriculum improvement and the present Project; Present status of doctors and nurses' in-service training; The relationship between township hospital and village doctors;
March 6, 2013	Nanning Health School	Meeting with school heads	School's demand for the present Project; The present status of various majors; The preferential policies, e.g. tuition fee and living subsidy
		FGD consulting with	Teachers' present status,

		teachers	e.g. problems, difficulties; Their demand from the present Project; Their opinions of support or opposition;
		FGD consulting with students	Students' present status, e.g. problems, difficulties, dissatisfaction about courses or teaching methods; Their demand from the present Project; Their opinions of support or opposition;
March 7, 2013	No.4 Vocational School	Meeting with school heads	School's demand for the present Project; The present status of various majors; The preferential policies, e.g. tuition fee and living subsidy
		FGD consulting with teachers	Teachers' present status, e.g. problems, difficulties; Their demand from the present Project; Their opinions of support or opposition;
		FGD consulting with students	Students' present status, e.g. problems, difficulties, dissatisfaction about courses or teaching methods; Their demand from the present Project; Their opinions of support or opposition;
March 12, 2013	Dalongdong Village, Xiyan Town, Shanglin County	FGD consulting with villagers	Village status about population, natural resources, employment, infrastructure, kindergarten and primary schools Ethnic minority proposition, culture and traditions, Elderly care and other social issues Villagers' opinion about the present Project
March 26, 2013	Rural doctor training base visit	FGD consulting with doctors and nurses	Present work 水獭图书, difficulties and suggestions; Town hospital's idea about rural doctor training base design;

B. PARTICIPATION PROGRAM IN THE PROJECT IMPLEMENTATION STAGE

86. The dimensions discussed in this paper – poverty and social assessment, gender and ethnic minority issues – are all crosscutting issues, and will as such require participation and consultations with concerned parties. This does not only apply to the professionals, directly involved, but also to the clients – the students, and the users of the services produced. For instance, in order to facilitate for poor students to join the TVET, there is a need to consult those who cannot join the school for economic reasons, to establish how this issue could be addressed.

X. SOCIAL RISKS MANAGEMENT

A. IDENTIFICATION OF SOCIAL RISKS

87. There are very few risks associated with the proposed project. A downturn in the global, national or local economy would probably affect the project and limit its extent, but this is far beyond the control of the project and the schools concerned. This could result in lack of enough infrastructure and teaching and other staff to take care of the needs of the students. One might speculate in difficulties in recruiting the number of students required, but experiences so far indicates that this should not be the case. Another possible risk associated with the project is the issue of the quality of the education and training. A rapidaly expanding organization could face the risk of a reduced quality during the expansion phase, and this would be monitored during the process of the project.

88. It is in general hard to see any major risks with the project – the labor market for the students are and will continue to be good, considering the needs, policies and plans for the health services and the preschool system. There are more students applying for the schools than can be admitted. The schools provide career opportunities for both men and women, and this is mainly taken up by women. The student population by and large reflects the ethnic composition in the Nanning Municipality as a whole, and there are no reasons to expect any major changes in this. Some 30% of the students are classified as poor, according to national criteria, and as the policies in providing subsidies to poor students has changed (the subsidies have increased), this does not at present a risk that poor students might be excluded. The project provides career opportunities for women, in a context where there have been substantial new employment opportunities for men, e.g. in the construction sector, whilst the women have not been able to find jobs to the same extent.

89. The schools will expand considerably, and this poses a risk regarding quality of the training provided. A substantial number of new teachers are required, and it is also possible that the standard of the students erolled in the school might be lower than at present. This might also be exacerbated in connection with the various policies directed at enrolling more students from ethnic minorities and remote and poor areas. The

quality aspects would be safeguarded through appropriate monitoring and evaluation.

B. SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

90. On the basis of the investigations carried out, the below indicated issues and actions have been identified. The issues are cross-cutting, and sometimes they do also overlap. The issues are also outlined in the Summary Poverty Reduction and Social Strategy, SPRSS, attached in the Appendix

1. Increased recruitment of students from ethnic minority areas and from poor areas

91. Some 27% of the students originate from areas defined as poor according to national standards. The both schools have expressed a desire to increase recruitment from poor areas, and there are already national and Province level policies in place to support this, in particular in areas referred to as “rocky and mountainous”. This would then support development in two dimensions: the education and career opportunities would be more available to disadvantage person (in terms of geography and socio economic conditions). The other dimension would be the possibilities of the graduated students returning to their original areas, to set up pre-schools for instance (this is further discussed below).

2. Promoting employment and development in rural areas

92. The rapid development in GZAR has mainly happened in urban areas, where also males from rural areas have been able to get employeed. TVET provides educational and career opportunities, and those opportunities are at present mainly taken by women, and those are also mainly from rural areas. In terms of policies and expressed intentions by the TVET schools, there are ambitions to promote enrolment from rural and poor area. Many of the preschools are private, and in order to further facilitate the expansion of pre-schools (which is envisaged in the various policies and plans for the Nanning municipality), it is suggested that entrepreneurship is included in the curriculum for the two schools. By giving the students information and education on how to start up and run your own business, it would facilitate the development of pre-schools in poor and rural areas. The spread of pre-schools in rural areas would also give the children a good start and preparations for the coming school years. Likewise, it would enable women to take up employment outside the home.

3. Maintaining career opportunities

93. To maintain professional standards and also increase the schools interaction with former students, recurrent re-training, in-service

training and other flexible approaches in the training is suggested. The rationale for this is the increased intake and output of graduates and the need to ensure that professional standards are met and maintained; to ensure that graduates can receive educational development support even after graduation and keep in touch with development in their respective professions and to enable the school to receive information in respect of the outcome and relevance of the education the schools are providing to further develop the curricula. This would be part of the monitoring and evaluation of the project and the schools performance, and would also be operational instruments to improve the performance of the school and also get a confirmation of standards achieved.

4. Maintaining ethnic diversity and culture

94. The Nanning Municipality is endowed with a rich ethnic diversity and spectrum, only a small part of which is expressed in the curriculums and training. To take advantage of this variety, ethnic expressions, such as Zhuang arts and crafts, music and folktales would be included in the curriculum for pre-school teachers. This would also involve the production of teaching aids.

5. The female – male imbalance in enrolment

95. The students are mainly females. In the pre-school education, they constitute 98% of the students; among the nurses, some 80% of the students and amongh rural doctors, they constitute 40% of the student population. The schools as well as the institutions which employ the students have strongly expressed the need of engaging more males in the pre-school and nursery education. It is required for males as role models, for cultural and gender diversity and also for reason related to physical strength. The Monitoring and Evaluation, would be very gender specific to follow up interventions in this respect.

6. Gender awareness training and development work

96. The schools have an overwhelming majority of women, who also are recruited from rural areas. The gender issue at hand is two fold – how to recruit more males for pre-school education and as nurses? There is a need of male role models in both professions, as well as for male specific qualities, be it strength or mind, which has been pointed out by the respective schools. This component would have to perspective – one would aim at gender awareness among the students and teachers, and the other would support recruitment activities, aiming at redressing the present imbalance.

7. Deterrents and factors facilitating enrolment from remote, poor and rural areas

97. The schools are presently facing problems in reaching remote and rural areas. This is reasonable easy to address, by deciding to spend more resources in reaching those areas. However, there might be other deterrents and obstacles for prospective students, in terms of living costs, of needs of the family to retain the son/daughter as an income earner rather than a student as well as a number of other factors. It is suggested that a study should look into deterrents for poor students and students from remote and rural areas to join the schools. The fact that most students so far are from rural areas, combined with the facts that some 27% of the students are viewed as poor, indicates that there is a large group who do not deem themselves as capable or eligible to apply for the education.

8. The TVET in the context of rural development

98. With the majority of the students coming from rural areas, and the new policies for compulsory one year pre-school education, there are ample opportunities for the creation of valuable social and service institutions in rural areas, like medical services and pre-schools. Both the private and public sectors can contribute to this. The role of the TVET institutions in the context of rural development would be looked into, in order to establish the opportunities as well as what and how could the curriculums be accommodated to support rural development. On item discussed previously relates to for instance training ein entrepreneurship, but there are probably many other opportunities to look into, which is what the proposed study would do.

XI. MONITORING AND IMPLEMENTATION

A. MONITORING

99. Monitoring would be done during and after the implementation. The following social and socio economic, gender and ethnic minority indicators would be used.

Issue	Indicators/provider
Proportion males and females among students and staff	The respective schools
Origin of recruitment of the students and poverty as a deterrent to enrolling in the schools: Urban/rural Ethnicity Gender Poor/well off	The respective schools, possibly with some additional resources instructions
Entrepreneurship training	Follow up year 3
Impact of the TVET concept and practice with regard to (rural) development, gender, ethnicity and poverty.	School statistics. Field surveys

100. Monitoring would be done during and after the implementation. The following social and socio economic, gender and ethnic minority indicators would be used.

Issue	Indicators/provider
Proportion males and females among students and staff	The respective schools
Origin of recruitment of the students and poverty as a deterrent to enrolling in the schools: Urban/rural Ethnicity Gender Poor/well off	The respective schools, possibly with some additional instructions The interventions/studies suggested
Entrepreneurship training	Follow up year 3
Impact of the TVET concept and practice with regard to (rural) development, gender, ethnicity and poverty.	School statistics. Proposed studies would suggest indicators and methodology.

i)increased recruitment from ethnic minority areas and poor areas; ii) support for more male participation in the TVET project; iii) inclusion of ethnic diversity subjects in the education for increased ethnic sensitivity; iv) investigation regarding poverty as a deterrent for joining the TVET institutions; v) introduction of entrepreneurship components in the TVET institutions; vi) integration of gender M&E indicators in the overall design and monitoring framework to track SGAP implementation vii) a study to look at the TVET institutions in the context of rural development. This is further discussed in the ToR.

B. IMPLEMENTATION

101. Implementation of the proposed activities are presented in the Terms of Reference and in the Project Administrative Memorandum, the PAM, and in the Social and Gender Action Plan, the SGAP.

ANNEXES

Focus Group Discussion, FGD
Photo
Social and Gender Action Plan, SGAP
Terms of Reference, ToR
PAM, Poverty and Social Assessment, PSA
Ethnic Minority issue presentation

TA 8158-PRC: Project Preparatory Technical Assistance

FINAL REPORT – CIVIL WORK

Author: Yinbo Liu

CONTENT

LIST OF DIAGRAMS AND TABLES

I. INTRODUCTION

1. The civil work of this project involves the new construction of Nanning Health School's (NHS) Xiangsi Lake Campus and the upgrade and expansion of Nanning No. 4 Vocational Technology School's (NVTS) Yongning Campus. For Nanning Health School, Phase I of the school construction is underway, financed by domestic funding, which mainly includes dormitories and living support facilities. The proposed project is Phase II of the school construction project, which mainly includes the construction of teaching, laboratory, office, and other facilities. In order for the new school to be functional, the construction of Phase II needs to be completed sooner so that can be integrated with the Phase I part to form a completely functional teaching, training, living, and support facility. For NVTS, the proposed project involves the upgrade and expansion of the existing school buildings and facilities on the existing campus. The campus was built in 1965 and there have not been major upgrades and expansions in the last 20 years. Most of the existing buildings and facilities are in poor condition and some of the dormitories are not safe for use anymore.

II. PROJECT BACKGROUND

A. NANNING HEALTH SCHOOL

2. Nanning Health School founded in 1972, it is a state-level secondary vocational school and a state-level demonstration school for the reform and development of secondary vocational education. It now has two campuses; namely, Nanning campus (including five teaching schools) and Litang campus. Currently, the school has over 8,000 students (excluding the interns), including 4,868 students in Nanning campus (excluding the interns) and 3,840 students in Litang campus. Its school buildings have a total construction area of 81,540 m^2, including 45,280 m^2 in Nanning campus (excluding the interns) and 36,260 m^2 in Litang campus. It now has 707 faculty members, including 227 professional teachers. Among them, 145 teachers teach professional theory courses, and 120 hold "double certificates"; 40 hold postgraduate certificates and 154 hold undergraduate certificates, with 85.09% of them holding an undergraduate certificate or above; 43 hold senior technical titles and 119 hold intermediate technical titles, with 71.05% of them holding intermediate technical titles or above. The school has five training bases, including an affiliated hospital, an oral cavity medical center, a medical cosmetology center, an oral denture manufacturing factory, and a naprapathy and massage center. The training bases feature advanced equipment and high simulation, and there is a school-run enterprise that integrates work and study.

3. The school took part in the national nursing care teaching achievement and employability demonstration competition, respectively in 2008 and 2010, and it was awarded the first group award in both competitions. Other awards in the two competitions include four students with individual all-round first award, two with individual all-round second award, four with individual single-skill first award, and two with individual single-skill second award. The school was also conferred the Best Innovative Teaching Award in 2008. During the three consecutive provincial nursing care practice skills competitions in Guangxi, the

school obtained the first and second group awards and the first, second, and third awards in individual single-skill competitions.

B. NANNING NO. 4 VOCATIONAL SCHOOL

4. Nanning No. 4 Vocational and Technical School founded in 1965, it is a public comprehensive secondary vocational school. It was evaluated by the Education Department of Guangxi Zhuang Autonomous Region as a provincial key secondary vocational school in 2007 and a provincial demonstration secondary vocational school in 2010. The school now has three campuses: Zhuxi campus, Tanluo campus, and Yongning campus. It covers a total land area of 45.4 hectares. It has a total of 283 faculty members and 5,496 full-time students. Of which, the Yongning campus is designated by the Education Department of Guangxi Zhuang Autonomous Region as a secondary teacher education school. It has trained more than 20,000 normal graduates and has built well-known reputation in Nanning and Guangxi as a whole. With a land area of 10.49 hectares, the Yongning campus provides such specialties as preschool education, ordinary teacher education, art education, English education, information technology education, sports education, etc. It now has 2,297 full-time students, among which are 2,007 girl students, accounting for 87.4% of the total full-time students. 1,816 students come from rural areas, accounting for 90.5% of the total full-time students. The preschool education specialty enrolls 2,029 students, accounting for 88.3% of the total. Enhanced investment in the school will help improve their vocational skills and women's development.

5. In 2010, the school was evaluated as an excellent school in terms of teaching capacities in Guangxi and was awarded the first prize in the comprehensive appraisal on high quality courses evaluation in Guangxi. From 2008 to 2010, 96% of its graduates obtained double certificates (academic certificate and professional certificate), and the first-time employment rate of its graduates achieved a record high of 98%.

III. PROJECT RATIONALE

6. The Litang campus of Nanning Health School finds it difficult to enroll students due to its underdeveloped teaching conditions. At present, the majority of teaching activities of the school are carried out in Nanning campus. However, Nanning campus only covers a land area of 2.20 hectares, but it carries out most of teaching activities and accommodates students' dormitories and part of faculty members' residential houses. There are severe shortages in classrooms, students' dormitories, and experimental classrooms for practice skill training. The school now accommodates far more students than its designed enrollment capacity, which poses a safety threat to the school. In addition, the Nanning campus lacks a sports ground. Due to historical reasons, the school is composed of five campuses and leads to severe scattering of its teaching activities. This causes increasing costs of teaching activities, inconvenient management of administrative and teaching affairs, and unsmooth teaching operations, which restrict the long-term development of the school. Lack of infrastructure facilities not only severely restricts the development of the school, but also is a vital important issue concerning the survival and sustainable

development of the school. As a leading school among health schools in Guangxi, Nanning Health School can train more professional medical personnel to meet urgent needs. Its further development is consistent with the need for economic and social development in Guangxi. The Nanning campus is located in a densely populated area and there is no land space for its expansion, while the Litang campus is remotely located far from Nanning city. In addition, the area where Litang campus is located has been identified as a commercial logistics area. As a result, it is not feasible to expand the size of schools on their existing campuses.

7. Nanning No. 4 Vocational Technology School is a secondary vocational school in Nanning city. The Yongning campus is oriented to train high quality preschool education teachers and professional personnel to inherit traditional ethnic arts by focusing on preschool education while considering the development of other related specialties such as culture, arts, and sports. The Yongning campus will be built to provide education for about 4,500 full-time students by the year 2013 and to satisfy the short-term training of 2,000 teachers per year. Due to historical reasons, the existing teaching buildings and students' dormitories of Yongning campus were built in the 1980s, and there are hardly any experimental and training bases in the campus. The infrastructure, such as power supply, water supply and drainage, fire control, and roads, is rather backward.

8. The proposed project will construct a new campus at Xiangsihu for Nanning Health School and upgrade the school infrastructure for Nanning No. 4 Vocational Technology School. The new and updated vocational school facilities in each campus will effectively alleviate the pressures on current school facilities to ensure the safety of its teaching activities and realize its sustainable development. The rationale for the new school construction includes:

- Vocational education – The construction of the new health school is in line with the national and autonomous region policy to promote vocational education. In 2005, the state council issued the "Development of Vocational Education in PRC" and placed the development of vocational education as one of the major education development goals.
- 12th Five Year Plan (FYP) goals – The 12th FYP emphasizes the importance of developing the education system, including the vocational education system. It requires that the current vocational education system shall be expanded and improved to meet the rapid economic development needs.
- Improvement of Nanning vocational education system – Nanning vocational education facilities are very limited and cannot meet economic development needs. The construction of the new campus will effectively improve the current vocational education situation and significantly increase its educational capacity.
- Sustainable development of Nanning vocational education system – The development of Nanning vocational education system has been constrained by limited school facilities. The project will provide much needed school facilities and ensure the sustainable development of the vocational education system.
- Improvement of the public health service condition – Nanning has much lower average medical care personnel percentage than the

national average, especially for the medical care personnel in the rural area. The project will provide training facilities for the rural medical personnel and help to improve the services.

- Improved employment opportunities for women and minorities – The constructed health school will be used to educate and train the medical personnel in the Nanning area, with the female students accounting for more than 80% of the total students and with a high percentage of minority students. The school will help to improve the employment for women and minorities.
- Improved educational opportunities for poor and minorities – Nanning has a high percentage of minority population. About 58% of the population is minorities. For the two schools in the project, about 90% of the new students are from countryside and the female students account for over 80% of the total students. The construction and the rehabilitation of the two schools will effectively help the poor and minorities from the remote areas.

IV. PROJECT COMPONENTS FOR CIVIL WORKS

A. NANNING HEALTH SCHOOL

9. Nanning Health School is located in Xiangsi Lake District at the western part of Nanning City. The civil works involve civil work construction and equipment purchase. The construction of NHS is divided into two phases. Phase I is the western half of the campus, which primarily includes living and support facilities, including dormitories, an activity center, gymnasium, sports facilities, etc. Phase II is at the eastern part of the campus, which is mainly the teaching and administration facilities, including laboratory, library and administration building, auditorium, classroom buildings, underground structures, etc. The campus map is shown in **Figure 1**. For Phase II project, the summary of the campus planning for the entire school is shown in **Table 1**, and those for Phase II only is shown in **Table 2**. The summary of the buildings and construction items are shown in **Table 3**. The total building area is about 105,292 m^2, and there are five new structures to be built, including the Experimental Building, Library and Office Building, Auditorium, and A3 and A4 Teaching Buildings. The total investment is CNY 326.22 million, including a construction cost of CNY 314 million.

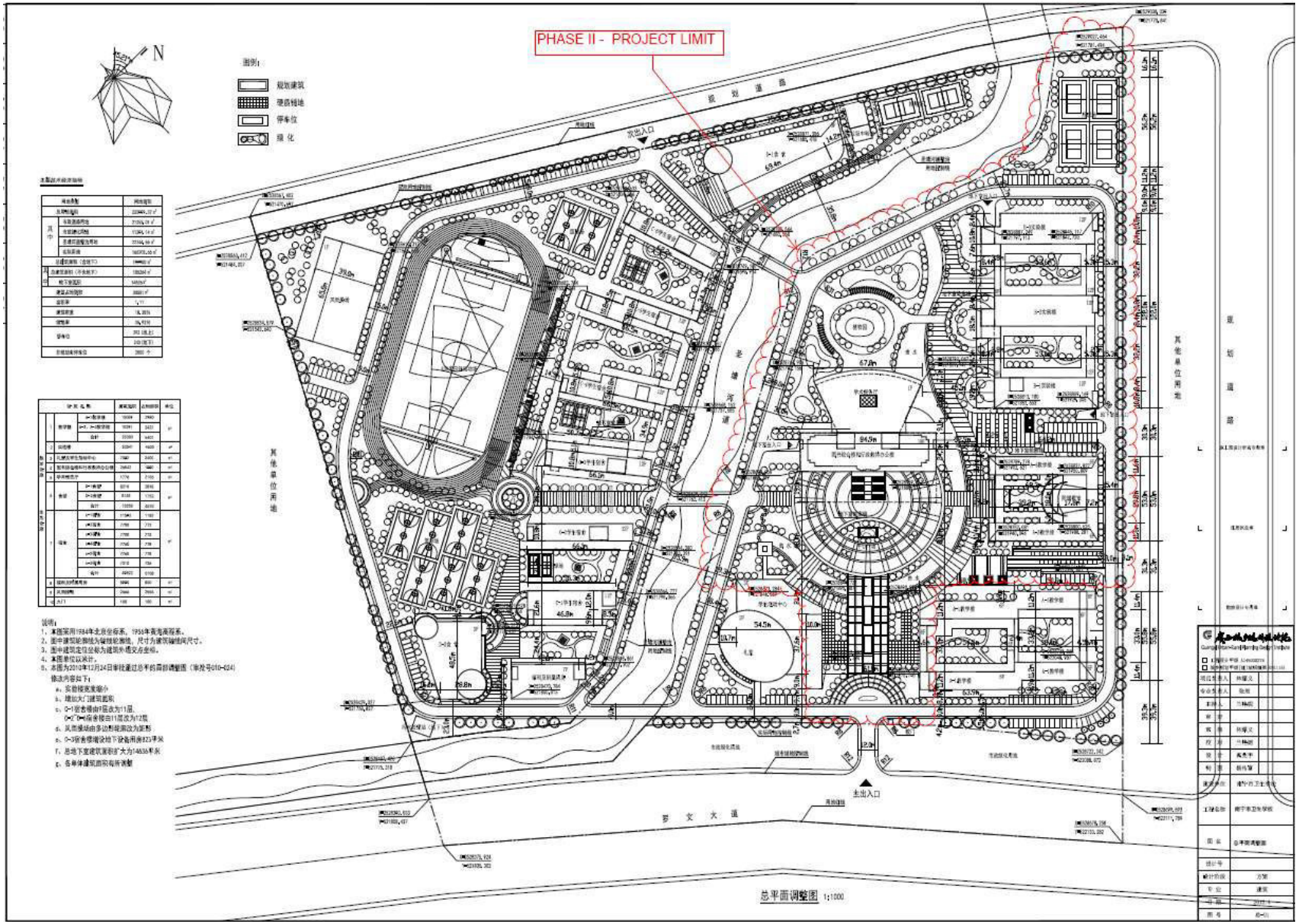

Figure 1. Nanning Health School Site Plan

Table 1: Summary of Nanning Health School Planning – Entire Campus

Land Use		Area
Total Land Use Area		220,999.4 m^2
	Road	21,252.01 m^2
	Landscaping	11,294.14 m^2
	Shengtang River Rehabilitation	22,244.56 m^2
	Actual Land Use	166,208.7 m^2
Total Building Area (Including Basement)		200,526.4 m^2
	Total Building Area (Excluding Basement)	185,510 m^2
	Basement Area	15,016.71 m^2
Building Footprint Area		30,484.47 m^2
Floor Area Ratio		1.116
Building Density		18.34%
Landscaping Rate		34%
Parking Space		292 (Aboveground)
		295 (Underground)
Non-motorized Vehicle/Bike Parking		3,000 ea

(Source: Consultant)

Table 2: Summary of NHS Campus Planning – Phase II

Land Use		Area
Actual Land Use		43,667.13 m^2
	Building Footprint Area	11,137 m^2
	Parking Area	576 m^2
	Road and Square	5,503.86 m^2
	Landscaping and Greenery	23,032.27 m^2
	Coverage of Water	3418 m^2
Total Building Area (Including Basement)		105,292.5 m^2
	Total Building Area (Excluding Basement)	91,479.8 m^2
	Basement Area	13,812.71 m^2
Parking Space		32 (Aboveground)
		295 (Underground)

(Source: Consultant)

Table 3: Summary of NHS Construction Items

No		Description	Unit	Quantity	Footprint Area
1		Total Land Use	m^2	46,600	4.66 ha
2		Actual Land Use	m^2	43,667.13	
3		Total Building Area	m^2	105,292.51	
	3.1	Experimental Building	m^2	52,541	4,620
	3.2	Library and Office Building	m^2	26,897	1,990
	3.3	Auditorium	m^2	1,776	2,106
	3.4	A-3, A-4 Teacher Buildings	m^2	10,305.8	2,421
	3.5	Underground Structure	m^2	13,812.71	

(Source: Consultant)

10. Associated with the construction of the new school, the project also involves the procurement of equipment for teaching and training, including computers, teaching audio system, projectors, etc. A summary of the equipment is shown in **Table 4.** The project will also procure new equipment for the elderly care facility as well as two rural training facilities located in two township hospitals. The summary of the equipment for elderly care and two rural medical staff training centers are shown in **Tables 5, 6,** and **7**, respectively.

Table 4: Summary of Equipment Purchase for NHS

No	Description	Unit	Quantity	Remark
1	Campus Broadcasting Equipment - 2G DDR3, 500G, 12" LED	set	1	
2	Campus Security Card Reading System	set	1	
3	Security Monitoring System - 100 m range infrared camera (12)	set	1	
4	Multifunction Audio & Lighting System - 8 XLR	set	1	
5	Large LED Display - 40k/m^2	set	1	Auditorium
6	Multimedia System - 700 W	set	2	Conference
7	Classroom Multimedia System - 200 W	set	8	
8	Auditorium Sound and Light System - 75 W	set	1	
9	Stage Equipment	set	1	Auditorium
10	Large LED Display	ea	1	on stage
11	Teaching Multimedia System	set	1	
12	Gymnasium Lighting and Sound System	set	1	
13	Teaching Projector System	set	40	Classroom
14	Mini Bus (23 seats)	ea	1	
15	Pickup Truck	ea	1	
16	Elevator	ea	12	
17	Solar Power System - 50 KWp	ea	1	
(Source: Consultant)				

Table 5: Summary of Equipment List for Elderly Care Base

No	Description	Unit	Quantity	Remark
	Elderly Care Equipment			
1	CPM Joint Recovery Machine	set	6	
2	Joint Recovery Machine	set	10	
3	Arm Recovery Machine	set	10	
4	Wrist Recovery Machine	set	10	
5	Shoulder Recovery Machine	set	10	
6	Adjustable Grinding Plate	set	10	
7	Steps	set	4	
8	Twin Stand Supporters	set	4	
9	Roller	set	10	
10	Balance Board	set	10	
11	Muscle Training Board	set	10	
12	Supporter	set	10	
13	Upper Arm Excise Machine	set	6	
14	Walker	set	20	
15	Crutches	set	20	
16	Training Board	set	20	
17	PT Recovery Excise Bed	set	4	
18	OT Training Table	set	6	
19	Clothing Board	set	10	
	Dental Experiential & Training			
20	Digital Image Machine	set	1	
21	Digital Dental Image System	set	1	
22	Planting Machine	set	1	
23	Planting Accessories	set	1	
24	Pre-vacuum Sanitary Stove	set	1	
25	Dental Treatment Machine	set	20	
26	Dental Cleaning Machine	set	10	
27	UV Curing Machine	set	10	
28	Wireless UV Curing Machine	set	2	
29	Root Carnal Machine	set	2	
30	Root Canal Measuring Machine	set	2	
31	Root Canal Filling Machine	set	1	

(Source: Consultant)

Table 6: Wutang Town Center Hospital Rural Training Base Equipment

No	Description	Unit	Quantity	Remark
1	Infant Heat Beat Monitoring Machine	set	1	
2	Defibrillator	set	1	
3	Digital Blood Pressure Meter	set	1	
4	Head Pressure Monitoring Machine	set	1	
5	Multifunction Labor Machine	set	1	
6	Electrocardiography (ECG)	set	1	
7	Blood Analyzer	set	1	
8	Surgery Table	set	1	
9	Surgery Lighting	set	1	
10	Lung Monitoring Machine	set	1	
11	Ventilator	set	1	
12	Stroke Recovery Machine	set	1	
13	Oxygen Machine	set	1	
14	Multifunction Discharging Machine	set	1	
15	Ultrasound Cleaning Machine	set	1	
16	Guardianship - PM8000	set	2	
17	Guardianship - G60	set	2	
18	Medical Bone Drill	set	1	
19	Multimedia Teaching System	set	1	
(Source: Consultant)				

Table 7: Wuming Shuangqiao Center Hospital Rural Training Base Equipment

No	Description	Unit	Quantity	Remark
1	Anastasia Respiration Machine	set	1	
2	Endoscopy	set	1	
3	Blood Analyzer	set	1	
4	Urine Analyzer LX5000	set	1	
5	Dynamic Blood Analyzer	set	1	
6	Urine Analyzer - U500	set	1	
7	Electrocardiography (ECG)	set	1	
8	Air Sanitation Machine	set	4	
9	Trans Cranial Doppler (TCD)	set	1	
10	Multimedia Teaching System	set	1	
(Source: Consultant)				

B. NANNING NO. 4 VOCATIONAL TECHNOLOGY SCHOOL

11. The NVTS Yongning Campus is located in Yongning District at the southeastern part of Nanning City. The project involves the upgrade and expansion of the school building and facilities on the existing campus, including demolition of existing buildings and construction of new buildings and facilities. **Table 8** shows the summary of the campus development planning and the campus plan is shown in **Figure 2.**

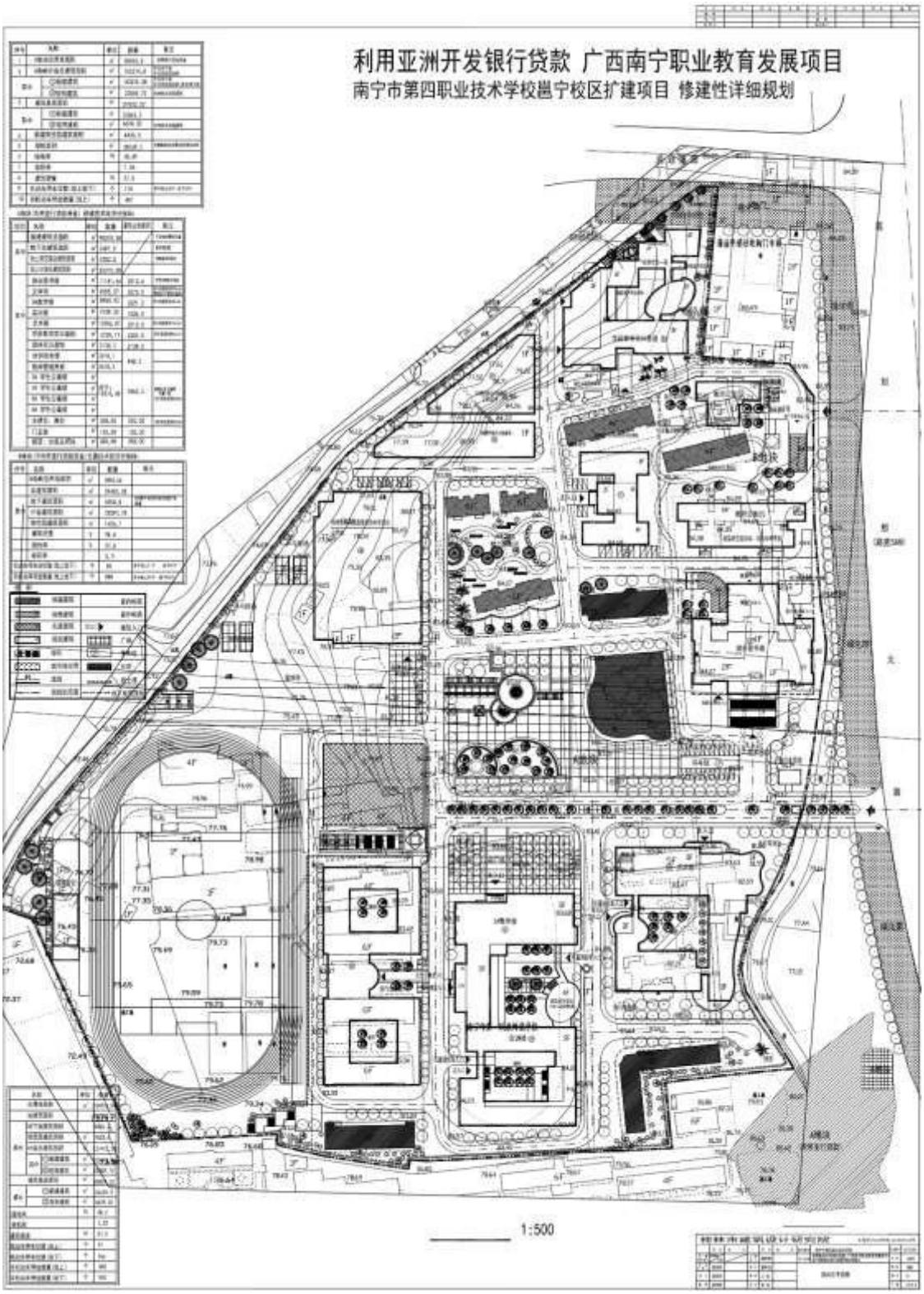

Figure 2: No. 4 Vocational Technology School Plan

Table 8: Summary of NVTS Upgrade Planning

Land Use		Unit	Quantity
Total Land Use Area		m^2	104,918.6
Total Building Area		m^2	140,445.3
	Basement		*8,312.0*
	Open first floor		*5,361.5*
	Building area		*126,771.8*
	New Building		*104,712.1*
	Existing Building		*22,059.7*
Building Footing Area		m^2	27,318.7
	New Building		*22,689.4*
	Existing Building		*4,629.3*
Landscaping Area Rate		%	41%
Floor Area Ratio			1.21
Building Density		%	26.0%
Street parking Space		ea	61
Underground parking space		ea	156
Ground non-motorized Vehicle/Bicycle Parking		ea	580
Underground non-motorized Vehicle/Bicycle Parking		ea	900
(Source: Consultant)			

12. Based on the current FSR, some of the existing dormitories will be demolished and new construction will include new dormitories, classroom buildings, gymnasium, library, art building, kindergarten training base, landscaping training base, trainer dormitory, teacher management housing, etc. The detail is shown in Table 9. The total investment is CNY 276.9 million and the construction and equipment cost CNY 266.13 million.

Table 9: Nanning No. 4 Vocational Technology School Summary

No		Description	Unit	Quantity	Remark
1		Total Area in Planning	㎡	98,963.9	Note 1
2		New Building Area	㎡	89,167.5	
	2.1	Basement Area	㎡	2,353.2	
	2.2	First Floor Open Space	㎡	4,200.0	
	2.3	Usable Building Area	㎡	82,614.3	
	2.3.1	Library	㎡	10,960.0	
	2.3.2	Gymnasium	㎡	9,295.4	Note 2
	2.3.3	No. 2 Teaching Building	㎡	8,959.9	Note 3
	2.3.4	Experiment & Training Bld	㎡	7,539.3	
	2.3.5	Art Building	㎡	13,060.5	Note 4
	2.3.6	Kindergarten Training Base	㎡	5,728.2	Note 5
	2.3.7	Landscaping Training Base	㎡	2,054.4	
	2.3.8	Dormitory for Trainees	㎡	5,220.3	Note 8
	2.3.9	No.3 - No. 6 Dormitories	㎡	19,076.3	Note 6
	2.4	Stage & Platform	㎡	300.0	Note 7
	2.5	Security Guard Room	㎡	120.0	
	2.6	Utility Facilities & Others	㎡	300.0	

(Source: Consultant)

Notes:

1. Exclude teacher dormitory.
2. Exclude first floor open space of 2400 m^2 and four basketball training courts on rooftop.
3. Exclude first floor open space of 280 m^2.
4. Exclude first floor open space of 100 m^2
5. Exclude first floor open space of 400 m^2
6. Exclude first floor open space of 500 m^2
7. Exclude first floor open space of 520 m^2
8. Includes trainee domitoriy of 2601.1 m^2 and teacher use building of 2601.2 m^2.

13. Similar to NHS, the project component involves the equipment purchase associated with the school upgrade and expansion. The equipment includes classroom equipment, audio equipment, kindergarten training base equipment, landscaping training base equipment, etc. The details are shown in **Table 10**.

Table 10: Equipment List for Nanning No. 4 Vocational Technology School

No	Equipment		Unit	Quantities
Experiment & Training Building				
1	Control Room Equipment	Control exchange machine, routers, UPS, firefighting, etc	Set	1
Gymnasium & Track Field				
2	Water Treatment	Water treatment equipment	Set	1
Management Building and Trainee Dormitory				
3	Hot Water	Hot water system	Set	1
Kindergarten Training Base				
4	Children Study	Computer, TV, CD, AC, Storage, bed, keyboard, bench, toy, etc.	Set	15
5	Cafeteria	Kitchen equipment including cooking, cleaning, refrigerator, table, etc.	Set	1
6	Playground	Playground equipment	Set	1
7	Art and activity Room	Computer, TV, AC, projector, piano, CD, stereo, etc.	Set	1
8	Computer Room	Computer and accessory	Set	1
Library				
9	Lecture Hall	Furniture, sound system, lighting, central control, etc.	Set	1
10	Backup Power	Generator & accessory	Set	1
Campus Broadcasting System				
11	Broadcasting System	Campus wide broadcasting system	Set	1
(Source: Consultant)				

V. PROJECT FEATURES

A. NANNING HEALTH SCHOOL

1. Rain Water Harvest System

14. The precipitation in Guangxi is significant, with an average annual rainfall over 1,300 mm, especially during the months of May to October. There is a big potential to harvest and reuse the rain water for toilet flushing, landscaping irrigation, etc. A rain water harvest system has been proposed for the A-3 and A-4 Teaching Buildings. The system consists of roof collecting, piping, initial runoff removal, water treatment, and water reuse system. The collected water will be used for campus landscaping irrigation.

2. Solar Hot Water System

15. Nanning is located in the subtropical climate zone with warm weather and plenty of sunshine. The average annual sunshine time is between 1,450–2,250 hours and the solar energy per square meter is between 4,290–5,116 MJ, favorable conditions for using a solar hot water system. The solar hot water system is a very effective way to produce hot water and reduce campus energy consumption in the area. The solar hot water systems are proposed for

the student dormitories. The system consists of a roof solar heating unit, water tank, piping, and water pump. The electrical backup heating system associated with the solar hot water system will be included to provide additional hot water during winter.

3. Energy Conservation Construction Materials

16. New energy conservation construction materials have been proposed for the school buildings. The energy conservation concrete hollow blocks, which have better insulation properties than conventional concrete masonry blocks and are of lighter weight, will be used for all exterior walls. High efficiency energy saving lighting is proposed for the new school building. The high strength reinforcing steel will be used in the building structure, which will save steel usage in comparison to the conventional steel. The exterior glass wall will be avoided as much as possible to improve the building energy consumption.

B. NANNING NO. 4 VOCATIONAL TECHNOLOGY SCHOOL

17. Similar energy conservation and new technologies and new construction materials have been proposed for NVTS. The proposed features are summarized in the following:

1. Rain Water Harvest System and Stormwater Management System

18. There is an existing water pond in the campus which will be preserved for the school upgrade. The current FSR proposed will collect the surface runoff from the plaza at the main entrance as well as the area around the pond, and store the water in the pond for campus landscaping irrigation use. Based on the campus layout and topographic condition, expanding the current design to incorporate the stormwater management system into the rain water harvest system is recommended.

19. The current storm drainage system simply collects and discharges rainwater to the nearby waterways or municipal stormwater drainage pipelines. This method is outdated and has been abandoned by developed countries for more than 30 years. This kind of stormwater collection and drainage system collects more surface runoff from hardened surfaces such as pavement and buildings, and discharges it to the river system at a much faster rate in comparison to the predevelopment condition, resulting in possible flooding downstream. The situation grew worse in recent years due to PRC's fast urbanization process. The flooding in Beijing in 2012 was a typical example of bad stormwater management design. Most of the developed countries as well as some large cities in PRC have adapted to use a stormwater management system to control surface runoff discharge and minimize the impacts to downstream.

20. The consultant has recommended connecting the new campus stormwater drainage piping network on the new campus roads to the existing water pond, and the water pond will work as the detention pond as well as the rain water storage pond for rain water reuse. The detailed instructions were provided to the Design Institute, which will study and incorporate if possible.

2. Solar Hot Water System

21. Similar to NHS, the solar hot water systems are proposed for the student dormitories. The system consists of roof solar heating unit, water tank, piping, and water pump. The electrical backup heating system associated with the solar hot water system will be included to provide additional hot water during winter.

3. Energy Conservation Construction Materials

22. Similar to NHS, new energy conservation construction materials have been proposed for the school buildings. The energy conservation concrete hollow blocks, which have better insulation properties than the conversional concrete masonry blocks and are of lighter weight, will be used for all exterior walls. The energy efficient lighting is proposed for the new school buildings. The high strength reinforcing steel will be used in the building structure, which will save steel usage in comparison to the conventional steel. The exterior glass wall will be avoided as much as possible to improve the building energy consumption.

VI. NANNING HEALTH SCHOOL CIVIL WORK

A. CAMPUS MASTER PLANNING

23. As shown in **Figure 3**, the campus will have two major areas divided by the existing waterway, Shengtang River. The west side of the river is planned as the living area, with student dormitories, cafeterias, track and field, basketball courts, and other living and sport facilities. The east part of the river is designed as the teaching area with teaching buildings, a library, auditorium, etc. The area along the river is planned to be the campus green area with plantation and landscaping features. The two areas are connected by three bridges crossing the river. The teaching area will be built under this project.

24. In the teaching area, the major structures are laid out along the main axis of the campus in a south-north direction, starting from the main entrance on Luowen Avenue in front of the campus, the center plaza, the library and administration building, and the auditorium in the back. The major teaching buildings, including A-1, A-3, and A-4, and the B-1 to B-3 Experimental Buildings, will be located along the east campus wall.

25. In the living area, all student dormitories and cafeterias are located along the west bank of the river. The track and field and other sports facilities will be located in the western part of the campus.

26. In general, the campus master layout is well defined, with clearly defined zones and functions and a necessary separation between the living and teaching areas. The proposed master plan is acceptable.

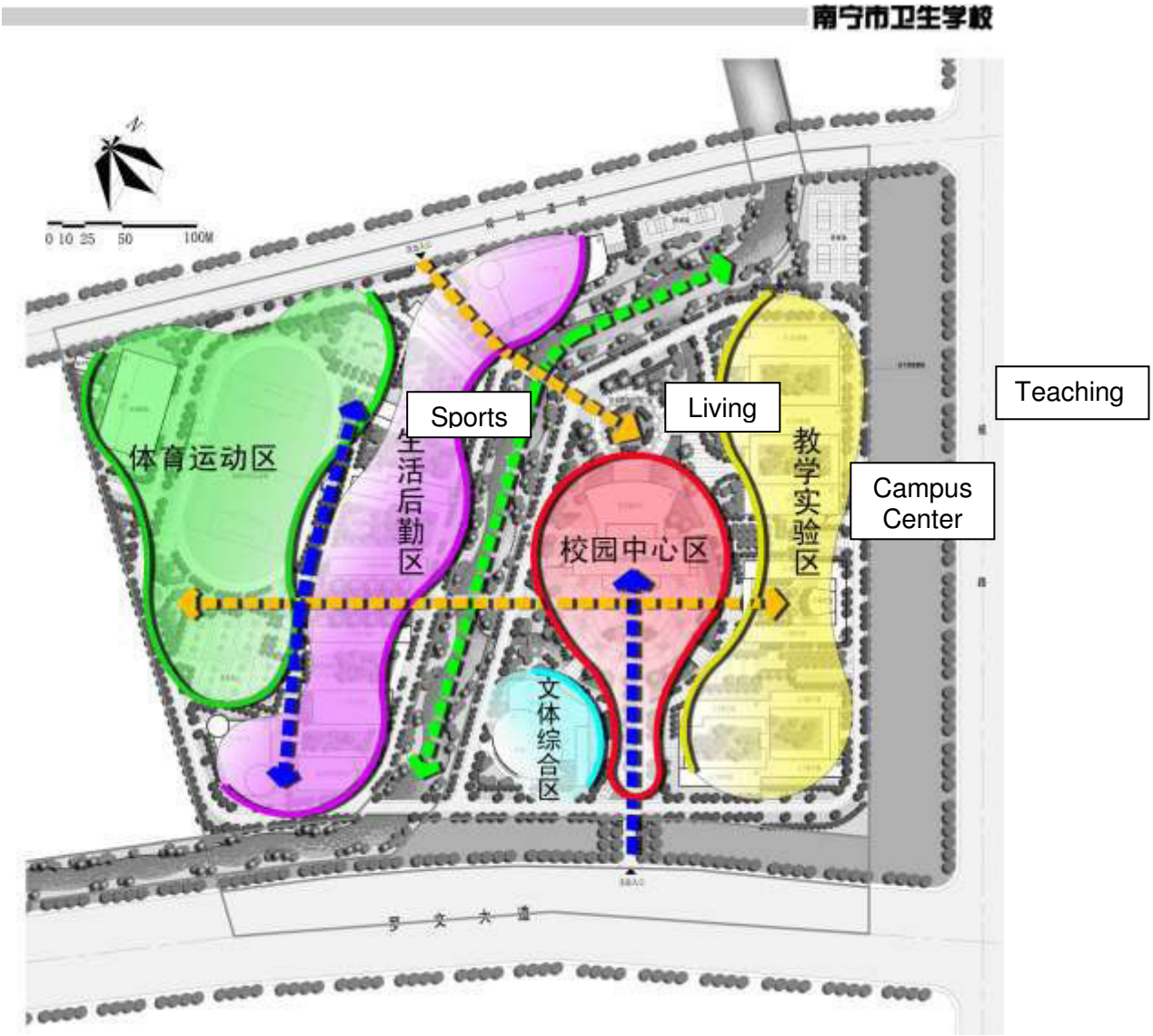

Figure 3: Nanning Health School Master Plan

B. CAMPUS TRAFFIC PLANNING

27. The major campus roads are placed along the perimeter of the campus and an interior road along the east side of the river. The living and teaching areas are connected by three bridges in the south, north, and middle parts of the campus. The traffic planning and traffic organization is shown in **Figure 4**. The campus roads shall mainly serve the students and teachers for walking and bicycling; motorized traffic shall be strictly controlled due to tight space and traffic safety concerns. The campus parking will be provided by both an underground parking garage and ground level parking lots. Currently, a total of 292 underground and 243 surface parking spaces is designed. The proposed traffic planning can serve the school teaching activity demands and the design is acceptable.

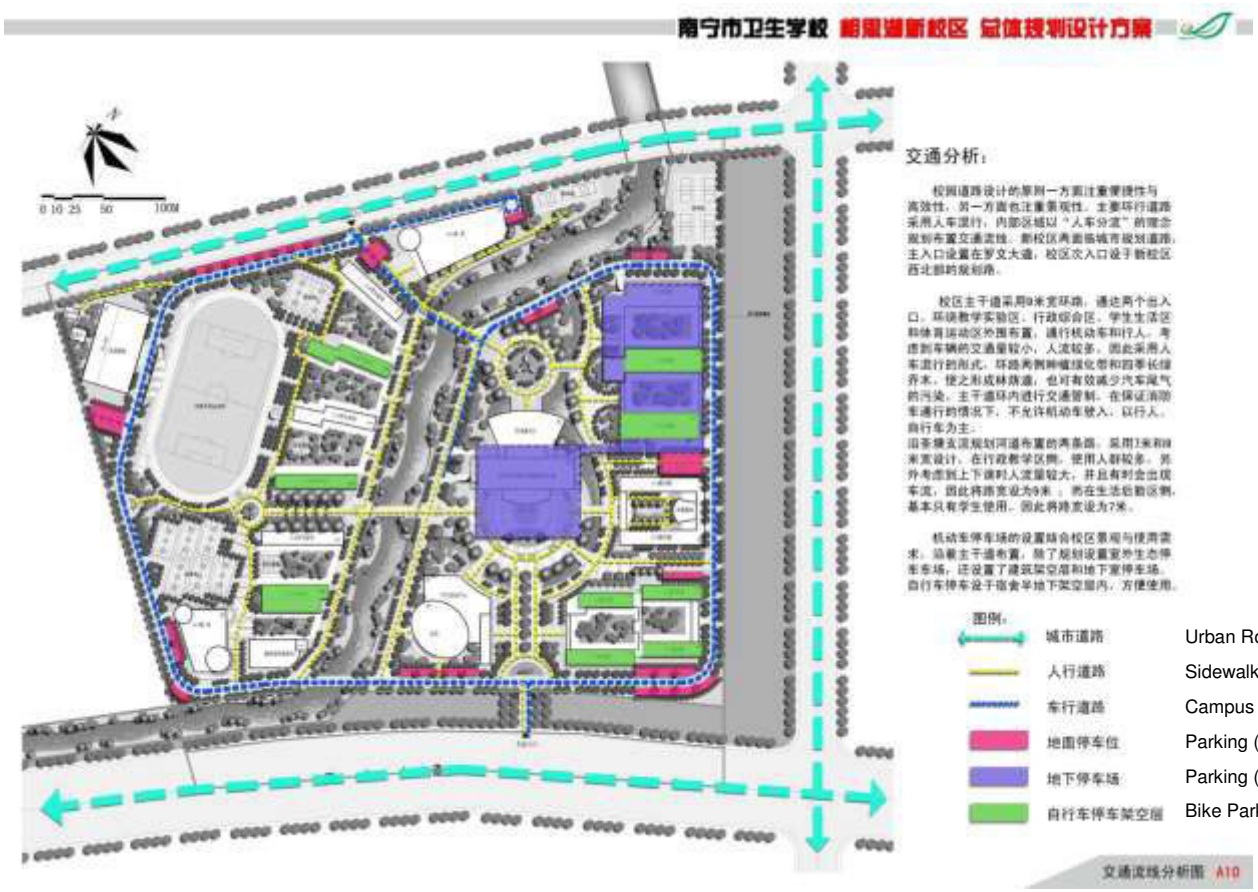

Figure 4: Nanning Health School Traffic Planning

C. CAMPUS SAFETY, SECURITY AND EMERGENCY EVACUATION PLAN

28. Fire Truck Route – Due to the large size of the fire truck and bigger turning radius, the proposed campus road network shall have adequate width and a large enough turning radius to ensure the fire truck can reach any point in the campus for firefighting purpose. The proposed fire truck route is shown in **Figure 5**. The proposed campus road width is 9.0 m and most of the turning radii are bigger than 10.0 m, which is adequate for firefighting requirements.

However, there are a few locations with turning radii as small as 8.0 m. It is suggested the Design Institute check if the 8.0 m radius meets the current design code requirements and make necessary adjustments as needed.

Figure 5: NHS Campus Fire Truck Route

29. Campus Security – Due to the high priority and sensitivity requirements for the campus security, a campus security monitoring system is included in the design, including monitoring cameras, a network, and a control center. The security system can monitor and record the campus activities full time during the school years.

30. Emergency Evacuation Plan – Schools are designed to be extremely safety-sensitive and able to handle emergency evacuations in the events of fire, earthquake, terrorist attack, and other natural or human disasters. Based on the campus planning and design, an emergency evacuation plan has been developed in the FSR. The emergency evacuation sites as well as the emergency exits have been identified in the plan. It is suggested that after construction is complete, the school should establish the designated safety and security unit in charge of the campus security and safety, develop the emergency evacuation plan, and conduct emergency evacuation drills and education program.

D. SHENGTANG RIVER TRIBUTARY REHABILITATION

31. Based on the campus master plan, the Shengtang River Tributary, along with a plantation and water body, will serve as a green stripe on the campus. It is an important component of the campus construction. During the interim

mission, the consultant has proposed to include the river rehabilitation and landscaping design and construction in the project so that the area can be properly integrated with the current campus design and serve the purpose of green development and as an area for the students and teachers for outdoor activities. However, according to municipal government regulations, the river is under the jurisdiction of Nanning Water Resource Bureau and the design and construction will be funded and conducted by the Bureau. It is suggested that the school shall coordinate with the municipal government and the Bureau and become involved in the preparation and implementation of the river rehabilitation to effectively address the requirements for green development, maintain the natural river conditions, avoid building a large concrete or masonry river channel, and use tree and vegetation cover to rehabilitate the rive embankment and surrounding areas.

E. CAMPUS UTILITIES

32. Campus utilities, including the water supply, power supply, sanitary sewer and stormwater systems, communications, etc. will be connected to the municipal utility networks near the schools.

33. Water Supply – DN200 water supply pipes will be connected to the municipal water supply pipe located in Luowen Avenue for campus use, including firefighting use. The campus water supply system includes water storage tanks, a pumping system, and a control unit.

34. Sewer – The campus sewer system will be connected to the nearby municipal sewer pipe system. Currently, the existing municipal sewer pipe network is not connected to the municipal wastewater treatment plant due to a missing section of the sewer line over Yong River. The NMG has coordinated the construction of the sewer line over Yong River to ensure that the piping network will be completed for operation before project completion of the school.

35. Stormwater – The innitial runoff from the campus will be collected and discharged into the nearby municipal stormwater pipe network. Partial rain water will be collected and reused for campus landscaping irrigation.

36. Power Supply – The power supply will be provided from the municipal power line near the campus. The campus will use 220/380V system and the supply will be provided by a 0.4KV transformer.

37. Communication – The communication systems, including cable TV and telephone, will be provided through the networks from the municipal communication companies.

F. LIBRARY AND ADMINISTRATION BUILDING

38. The building will serve as library, teaching, and school administration building. The footing area is 1,990 m^2 and the building area is 26,542 m^2. It is an 18 story structure with a one story basement. The building height is 71.4 m. The basement will used as the underground parking garage, with an area of 5,565 m^2. Floors 1-4 are the library, with a building area of 6,348 m^2; Floors 5-9 are the multimedia teaching classrooms, with an area of 7,245 m^2; Floors 10-13 are teachers' offices, with an area of 5,796 m^2; and Floors 14-18 are the

school administration offices. A cast-in-place reinforced concrete frame-shear wall structure was selected for use.

G. AUDITORIUM

39. The auditorium is a one story structure attached to the back of the library building. It has a 508 seat main lecture hall and a 264 seat secondary lecture hall. The footing print is 2,106 m^2 and the building area is 7,725 m^2, including a basement. The building height is 12.3 m. The auditorium is separate from the library building and a cast-in-place reinforced concrete structure was selected.

H. A3 – A4 TEACHING BUILDING

40. The A3-A4 Teaching Building is a twin structure with a large stepped classroom at the east end connecting the two structures. The building is located next to the campus east perimeter wall. It is a six story structure and the structure height is 23.85 m. The entire building footing area is 2,421 m^2 and the building area is 10,291 m^2. The stepped classroom has 235 seats. The cast-in-place reinforced concrete frame structure is used.

I. EXPERIMENTAL BUILDING

41. The Experimental Building is a 12 story building with a basement. The building height is 47.25 m. The building is adjacent to the A3-A4 Teaching Building in the south and next to the campus east perimeter wall. The footing area is 4,620 m^2 and the building area is 52,541 m^2. The cast-in-place reinforced concrete frame structure is selected.

VII. NANNING NO. 4 VOCATIONAL TECHNOLOGY SCHOOL CIVIL WORK

A. CAMPUS MASTER PLANNING

42. The civil works for NVTS involves the upgrade the existing school buildings and facilities within the perimeter of the existing campus. All works will be based on the existing campus layout with necessary adjustments as needed. The campus master plan for the upgrading is shown in **Figure 6**, which is primarily based on the existing campus layout. According to the function requirements, the campus layout is in one main axis, a campus center, and seven subareas. The campus main axis is from the main entrance on Nayuan Road in the east and extended into the west to the sports center at the track and field. The area along the strip is designed as the open area with major teaching and student living buildings along both sides, including library, central landscaping area, art building, teaching building, dormitories, cafeteria and sports facilities. The area is under a high tension overhead power line, which prohibits the construction of any building structures, but can be used as the open area. The campus center is set up around the existing water pond. The center mainly consists of plantation, lawn, and other green development, and will be used as a center for student outdoor activities and relaxation. The seven subareas include administration, teaching, library, student living, sports, training base, and teacher's living, to be upgraded or constructed based at the existing building or facility sites or new area, as shown in the campus master plan. The current master plan has considered the integration of the existing facilities with the new construction, makes full use the open space under the

overhead power line, and optimizes the individual building layout for the existing site conditions. It meets the school functional requirements.

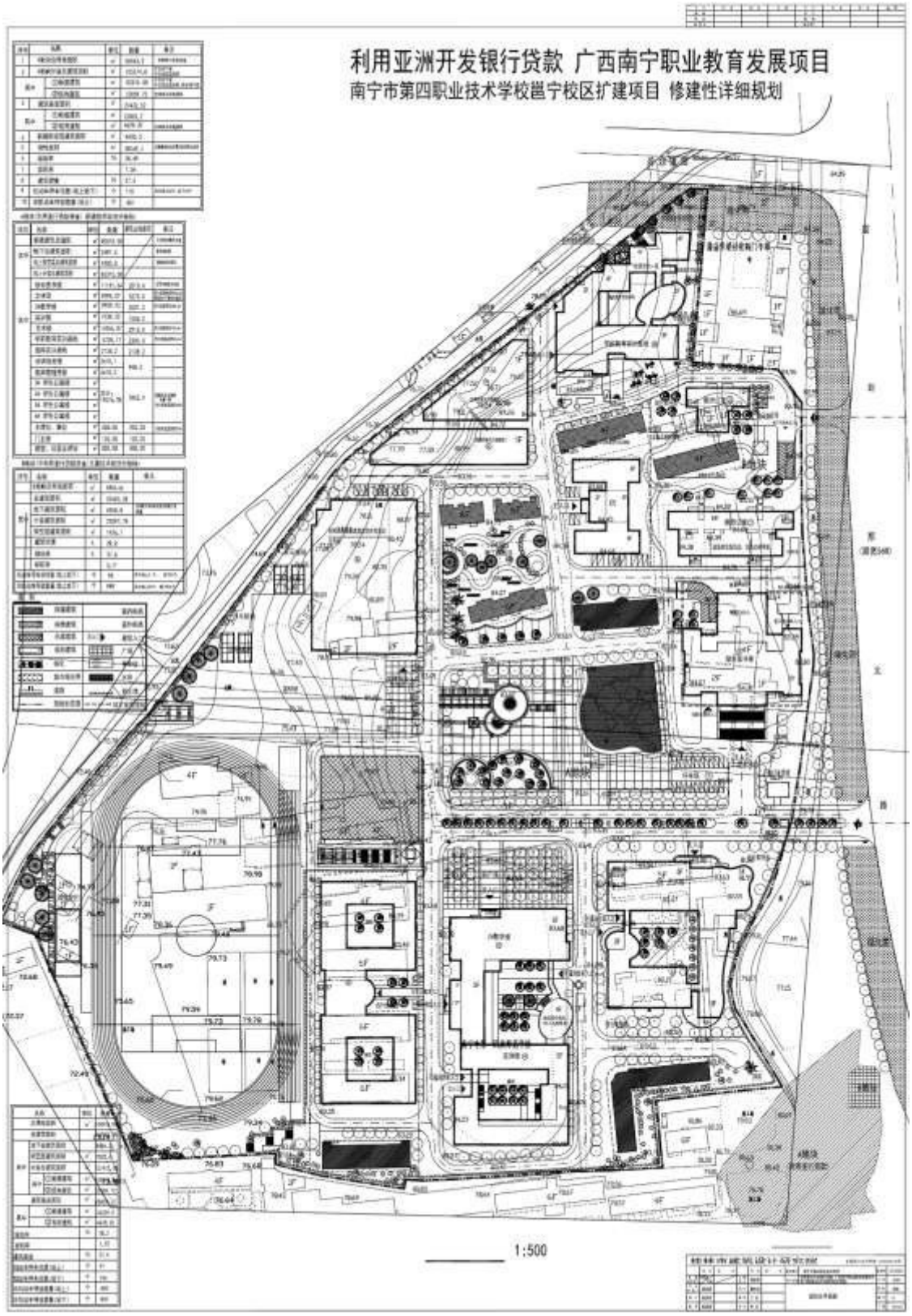

Figure 6: Nanning Vocational Technology School Campus Master Plan

B. CAMPUS TRAFFIC PLANNING

43. The major campus roads are laid out along the campus major axis from the entrance at Nayuan Road in the east to the sports center in the west. In the southern part of the campus, where the No. 2 Teaching Building, student dormitories, and Art Building are located, a loop road is placed around the No. 2 Teaching Building to provide access for students and teachers as well as the fire trucks. Since the area is mainly used for teaching and student living, it is recommended that motorized traffic should be limited by implementing the campus traffic control system after the school construction is completed. The teacher living area is located in the northern part of the campus. In order to facilitate teacher and family living needs, two secondary campus entrances are located on Qingquan Road and Nayuan Road. The arrangement can effectively separate the traffic from the living area from the teaching and student living area. The traffic planning and traffic organization is shown in **Figure 7**. The campus roads shall mainly serve the students and teachers for walking and bicycling and motorized traffic shall be strictly controlled due to the tight space of the campus and campus traffic safety concern. A minimum of 2 m wide sidewalks along all campus roads will be provided. The campus parking will be provided with both underground parking garage and ground level parking lots. Currently, a total of 156 underground and 61 surface parking spaces has been designed. For the non-motorized vehicle parking, a total of 580 surface parking spaces and 900 underground spaces is provided. The proposed traffic planning can serve the school teaching activity demands and the design is acceptable.

C. CAMPUS SAFETY, SECURITY, AND EMERGENCY EVACUATION PLAN

44. Fire Truck Route – Due to the large size of the fire truck and bigger turning radius, the proposed campus road network shall have adequate width and a large enough turning radius to ensure the fire truck can reach any point in the campus for firefighting purposes. The proposed fire truck route is shown in **Figure 8**. The proposed campus road width is 7.0 m and most of the turning radii are bigger than 10.0 m, which is adequate for firefighting requirements.

45. Campus Security – Due to the high priority and sensitivity requirements for the campus security, it is recommended a campus security monitoring system shall be included in the design. The system usually includes monitoring cameras and a network and control center. The security system can monitor and record the campus activities full time during the school hours.

46. Emergency Evacuation Plan – School safety requirements are highly-sensitive, and must be able to handle emergency evacuations in the event of fire, earthquake, terrorist attack, or other natural or human disasters. An emergency evacuation plan (**Figure 9**) has been developed based on campus planning and design. Emergency evacuation sites and exits have been identified in the plan. It is suggested that after the construction is completed, the school should establish a designated safety and security unit in charge of the campus security and safety, develop an emergency evacuation plan, and conduct emergency evacuation drills and education program.

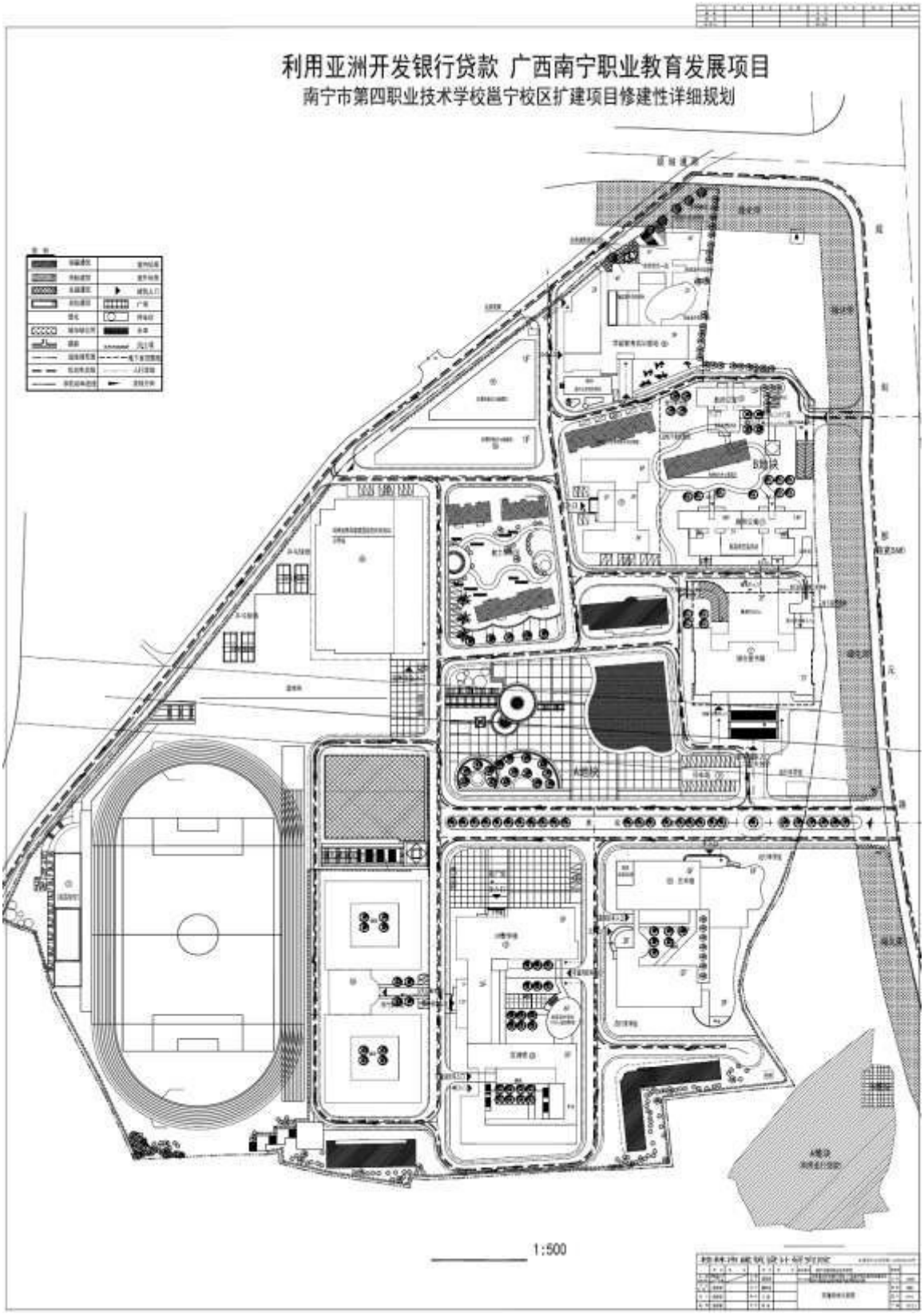

Figure 7: Nanning No. 4 Vocational Technology School Campus Traffic Planning

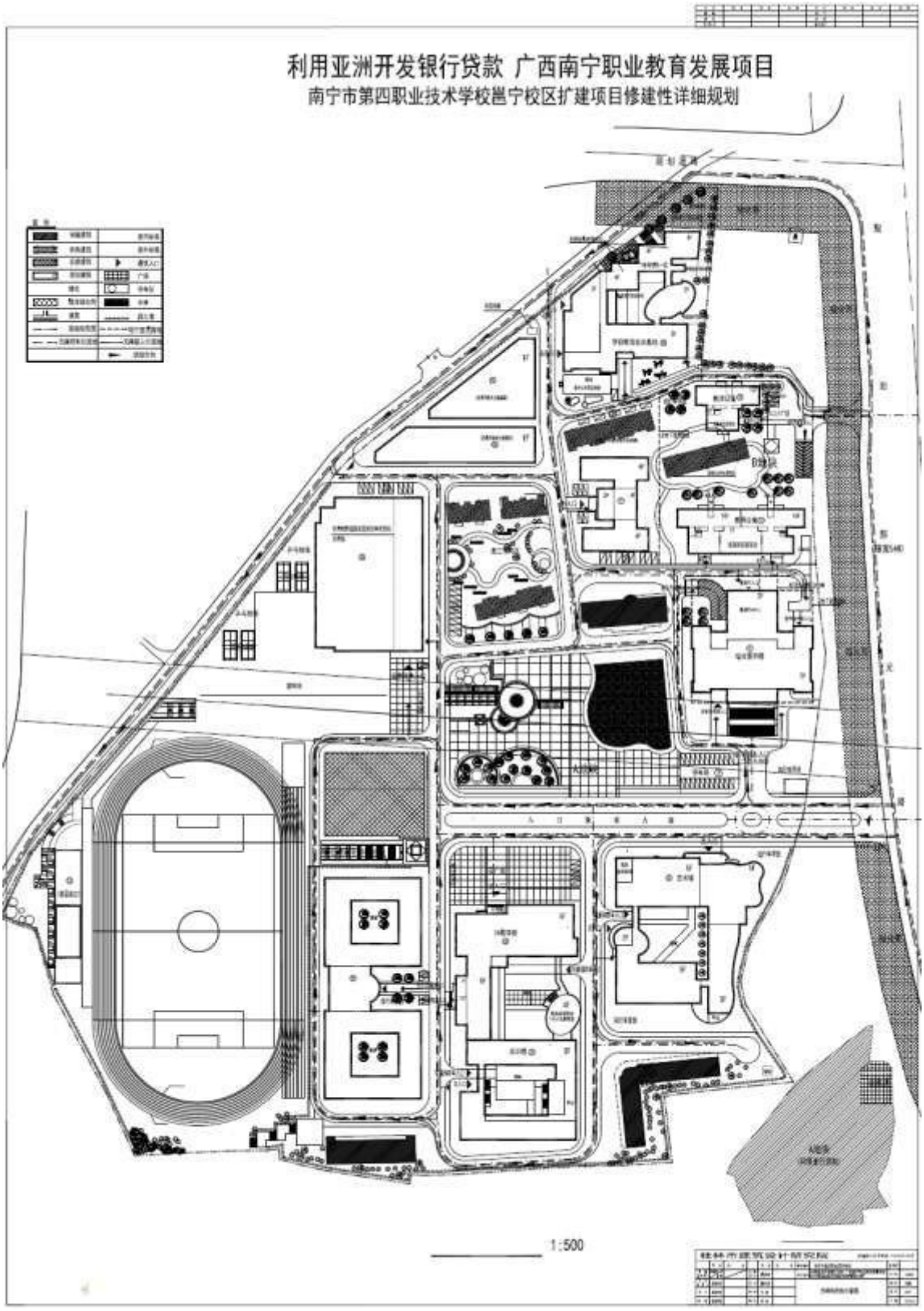

Figure 8: Nanning No. 4 Vocational Technology School Fire Truck Route

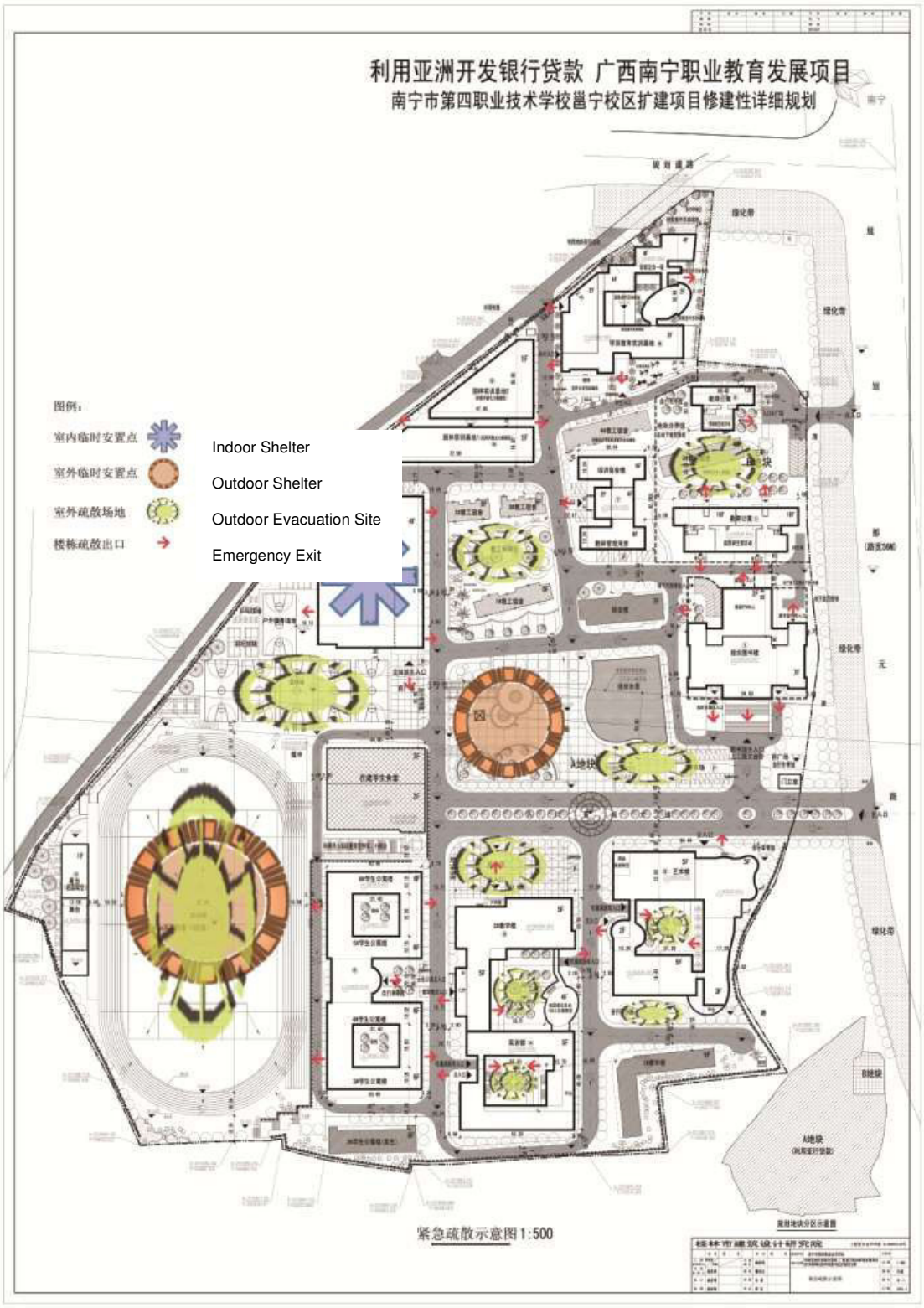

Figure 9: Nanning No. 4 Vocational Technology School Emergency Evacuation Plan

D. CAMPUS UTILITIES

47. Campus utilities, including water supply, power supply, sanitary sewer, stormwater, communication, etc. will be connected to the municipal utility networks near the schools.

48. Water Supply – Two DN250 water supply pipes will be connected to the municipal water supply pipe for campus use, including firefighting use. The campus water supply system includes the water storage tanks and pumping system and control.

49. Sewer – The campus sewer system will be connected to the nearby municipal sewer pipe system. Currently, the existing municipal sewer pipe network has not been connected to the municipal wastewater treatment plant. According to municipal sewer development planning, the sanitary sewer for the area will be collected and discharged to Wuxiang Wastewater Treatment Plant, a new municipal wastewater treatment plant which is under construction. The NMG has coordinated the construction of the sewer network from the school to the new WWTP to ensure that both the new wastewater treatment plant and the piping network will be completed for operation before the completion of the school project.

50. Stormwater – The indicial runoff from the campus will be collected and discharged into the nearby municipal stormwater pipe network. Partial rain water will be collected and reused for campus landscaping irrigation. A stormwater management system has been proposed in conjunction with the rainwater harvest system. The Design Institute will investigate the feasibility of implementing the proposed stormwater management system.

51. Power Supply – The power supply will be provided from the municipal power line near the campus. The campus will use 220/380V system and the supply will be provided by a 0.4KV transformer.

52. Communications – The communications systems, including cable TV and telephone, will be provided through the networks from municipal communication companies.

E. LIBRARY

53. The footing area of the library is 2,013 m^2 and the building area is 13,679 m^2. There are seven floors above the ground and one story basement to be used as the parking garage. A 600 seat auditorium is included in the north end of the building. The first floor of the building is the multimedia teaching area; the second to seventh floors are for the library. The structural type will be a reinforced concrete frame and shear wall structure.

F. GYMNASIUM

54. The footing area of the gymnasium is 3,273 m^2 and the building area is 9,295 m^2. The building is a five story building with an open first floor. The building height is 23.5 m. The first floor includes a swimming pool and gymnastic room. The second floor is a ping pong room, the third floor is a basketball and volleyball room, and the fourth floor is the gym. The building requires a large span and open space, so a reinforced concrete frame structure with steel space truss roof will be used.

G. NO. 2 TEACHING BUILDING AND EXPERIMENTAL BUILDING

55. The No. 2 Teaching Building and the Experimental Building are built on one foundation. The footing area is 2,021 m^2, while the building area for No. 2 Teaching Building is 8,960 m^2 and for the Experimental Building is 7,539 m^2. It is a five story building and the building height is 20.5 m. The teaching building has a classroom and teacher rooms, including three large classrooms with 120 seats. The experimental building has ten 50 seat computer rooms, ten 50 seat language teaching room, 15 labs, and other service rooms. A cast-in-place reinforced concrete frame structure will be used.

H. ART BUILDING

56. The Art Building is a five story structure with an open first floor. The building height is 23.5 m. The building footing area is 2,913 m^2 and the building area is 13,456 m^2. The building includes 102 piano rooms, 22 keyboard rooms, 12 music teaching rooms, 10 dancing rooms, eight art teaching rooms, a 300 m^2 exhibition hall, and other supporting facilities. A cast-in-place reinforced concrete structure will be used.

I. KINDERGARTEN TRAINING BASE

57. The kindergarten training base is located in the north end of the campus. It is a three story building with a footing area of 1,500 m^2 and building area of 5,728 m^2. The building height is 13.5 m. Based on the functional requirements, the kindergarten is divided into 4 subareas. The child activity area is placed in the north with activity rooms, the music room is located in the west, and the water park is located in the eastern part of the complex. A 500 m^2 playground is also included in the design with landscaping. A total of 15 classes can be placed in the kindergarten. A cast-in-place reinforced concrete structure will be used.

J. TRAINEE DORMITORY AND TEACHER BUILDING

58. The Trainee Dormitory and Teacher Building is designed as one single structure with a footing area of 948 m^2 and building area of 5,220 m^2, in which the areas of the trainee dormitory and the teacher building are both 2,610 m^2. It is a six story building. The trainee dormitory is located in the north and the teacher building is in the south with a receiving hall in the middle. The similar cast-in-place reinforced concrete frame structure will be used.

K. NO. 3-6 STUDENT DORMITORY

59. The No. 3 to No. 6 student dormitories are six story structures with the footing area of 3,862 m^2 and building area of 19,076 m^2. The building height is 21.5 m. The building is designed to host up to 3,500 students. The new dormitories will be built at the same location where the existing dormitories located. The existing dormitories are aged and cannot meet current building design code requirements, and they will be demolished for the new dormitory construction. In consideration of the construction cost, the reinforced masonry structure will be used.

VIII. PROCUREMENT PLAN

60. According to ADB procurement guidelines, a project procurement plan is developed covering all civil work, equipment purchase, and consulting services, as shown in the following:

PROCUREMENT PLAN

Basic Data

Project Name: Guangxi Nanning Vocational Education Development Project	
Country: People's Republic of China	**Executing Agency**: Nanning Municipal Government
Loan Amount: $50,000,000	**Loan (Grant) Number**: xxx
Date of First Procurement Plan: 25 June 2013	**Date of this Procurement Plan**: 25 June 2013

A. PROCESS THRESHOLDS, REVIEW AND 18-MONTH PROCUREMENT PLAN

1. Project Procurement Thresholds

61. Except as the Asian Development Bank (ADB) otherwise states, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works

Method	Threshold
International Competitive Bidding (ICB) for Works	$10 million or more
International Competitive Bidding for Goods	$1 million or more
National Competitive Bidding (NCB) for Works	More than $100,000 but less than $10 million
National Competitive Bidding for Goods	More than 100,000 but less than $1 million
Shopping for Works	Below $100,000
Shopping for Goods	Below $100,000

2. ADB Prior or Post Review

62. Except as ADB may otherwise agree, the following prior or post review requirements apply to the various procurement and consultant recruitment methods used for the project.

Procurement Method	Prior or Post	Comments
Procurement of Goods and Works		
ICB Works	Prior	
ICB Goods	Prior	
NCB Works	Post	Note 1
NCB Goods	Post	Note 1
Shopping for Works	Post	
Shopping for Goods	Post	
Recruitment of Consulting Firms		
Quality and Cost Based Selection (QCBS)	Prior	Quality cost ratio: 80:20 (%)
Individual Consultant Selection (IC)	Prior	

ICB = International Competitive Bidding, NCB = National Competitive Bidding

Notes:

1. The first batch of NCB procurement documents shall be submitted for ADB review and approval. The subsequent NCB procurement documents can be reviewed post project.

3. Goods and Works Contracts Estimated to Cost More Than $1 Million

63. The following tables list goods and works contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

Table 11: Contract Packages for Nanning Health School

No.	General Description	Contract Value	Procurement Method	Prequalification of Bidder (Y/N)	Advertisement Date	Place to Publish/ Comment
	Civil Work					
CH01	A3 and A4 Teaching Buildings	$3,159,328	NCB (AD&RF)	N	01-Oct-13	ADBBO
CH02	Experimental Building, Library & Administration Building, and Site Work	$36,415,590	ICB (AD)	N	01-Feb-14	ADBBO
	Equipment Supply & Installation					
EH01	Elder Care, Dental and Rural Medical Personnel Training Equipment	$859,393	NCB	N	01-Oct-14	ADBBO
EH02	Campus Security System	$622,951	NCB	N	01-Aug-14	ADBBO
EH03	Broadcast, Lighting, Sound and Video System	$1,417,705	ICB	N	01-Aug-14	ADBBO
EH04	Vehicle	$90,164	SP	N	01-Oct-14	ADBBO
EH05	Elevators	$619,672	NCB	N	01-Aug-14	ADBBO
EH06	Solar Power System	$150,934	NCB	N	01-Aug-14	ADBBO

NCB = National Competitive Bid, ICB = International Competitive Bid, SP = Shopping, ADBBO = Asia Development Bank Business Opportunities,
AD = Advance Contracting, RF = Retroactive Financing
(Source: Asian Development Bank)

Table 12: Contract Packages for Nanning No. 4 Vocational Technology School

No.	General Description	Contract Value	Procurement Method	Prequalification of Bidder (Y/N)	Advertisement Date	Place to Publish/ Comment
	Civil Work					
CT01	No. 2 Teaching Building, Experimental and Training Building, Trainee Dormitory, Teacher Use Building and Kindergarten	$8,210,836	NCB (AD&RF)	N	01-Oct-13	ADBBO
CT02	Gymnasium, Art Building, #3-6 Dormitory, Library, Landscaping Training Base and Site Works	$25,829,475	ICB (AD)	N	01-Feb-14	ADBBO
CT03	Site Water Supply System Improvement	$114,754	Note 1	N	01-Mar-14	ADBBO
	Equipment Supply & Installation					
ET01	Hot Water System	$360,656	NCB	N	01-Aug-14	ADBBO
ET02	Water Treatment System	$81,967	SP	N	01-Aug-14	ADBBO
ET03	Kindergarten Equipment	$393,443	NCB	N	01-Oct-14	ADBBO
ET04	Broadcast System	$360,656	NCB	N	01-Oct-14	ADBBO
ET05	Elevators	$63,934	SP	N	01-Aug-14	ADBBO
ET06	Central Control Room Equipment	$196,721	NCB	N	01-Aug-14	ADBBO
ET07	Backup Power Generator	$81,967	SP	N	01-Aug-14	ADBBO
ET08	Transformers	$491,803	NCB	N	01-Aug-14	ADBBO

NCB = National Competitive Bid, ICB = International Competitive Bid, SP = Shopping, ADBBO = Asia Development Bank Business Opportunities,
AD = Advance Contracting, RF = Retroactive Financing
Note 1 - The contract will be financed by domestic funding only.
(Source: Asian Development Bank)

4. Consulting Services Contracts Estimated to Cost More Than $100,000

64. The following table lists consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

No.	General Description	Contract Value	Procurement Method	Prequalification of Bidder (Y/N)	Advertisement Date	Place to Publish/ Comment
S02	Project implementation consulting service, TEVT and capacity development	$2,910,000	QCBS	N	15-Jan-13	CNRS
QCBS = Quality and Cost Based Selection, CNRS = Consulting Services Recruitment Notice						
(Source: Asian Development Bank)						

5. Goods and Works Contracts Estimated to Cost Less than $1 Million and Consulting Services Contracts Less than $100,000

65. The following table groups smaller-value goods, works and consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

No.	General Description	Contract Value	Procurement Method	Prequalification of Bidder (Y/N)	Advertisement Date	Place to Publish/ Comment
S01	Procurement and contract management assistance	$50,000	IC (AD &RF)	N	01-Aug-13	CNRS
IC = Individual Consultant Selection, CNRS = Consulting Services Recruitment Notice						
(Source: Asian Development Bank)						

B. INDICATIVE LIST OF PACKAGES REQUIRED UNDER THE PROJECT

66. The following table provides an indicative list of all procurement (goods, works, and consulting services) over the life of the project. Contracts financed by the Borrower and others should also be indicated, with an appropriate notation in the comments section.

General Description (Works and Goods)	Estimated Value (cumulative)	Estimated Number of Contract	Procurement Method	Domestic Preference Applicable	Comment
Goods	$1,417,705	1	ICB	N	
	$4,374,262	13	NCB	N	
	$400,000	5	Shopping	N	
Works	$62,245,066	2	ICB	N	
	$11,484,918	3	NCB	N	
General Description (Consulting Services)	**Estimated Value (cumulative)**	**Estimated Number of Contract**	**Procurement Method**	**Type of Proposal**	**Comment**
Consulting Services	$2,960,000	2	QCBS	STP	
STP = Simplified Technical Proposal					
(Source: Asian Development Bank)					

C. NATIONAL COMPETITIVE BIDDING

67. The Borrower's Law of Tendering and Bidding of the People's Republic of China promulgated by Order No. 21 of the President of the People's Republic of China on August 30, 1999 is subject to the following clarifications required for compliance with the Guidelines:

(i) All invitations to prequalify or to bid shall be advertised in the national press, or official gazette, or a free and open access website in the Borrower's country. Such advertisement shall be made in sufficient time for prospective bidders to obtain prequalification or bidding documents and prepare and submit their responses. In any event, a minimum preparation period of thirty (30) days shall be given. The preparation period shall count (a) from the date of advertisement, or (b) when the documents are available for issue, whichever date is later. The advertisement and the prequalification and bidding documents shall specify the deadline for such submission.

(ii) Qualification requirements of bidders and the method of evaluating the qualification of each bidder shall be specified in detail in the bidding documents, and in the prequalification documents if the bidding is preceded by a prequalification process.

(iii) If bidding is preceded by a prequalification process, all bidders that meet the qualification criteria set out in the prequalification document shall be allowed to bid and there shall be no limit on the number of pre-qualified bidders.

(iv) All bidders shall be required to provide a performance security in an amount sufficient to protect the Borrower/Project Executing Agency in case of breach of contract by the contractor, and the bidding documents shall specify the required form and amount of such performance security.

(v) Bidders shall be allowed to submit bids by mail or by hand.

(vi) All bids shall be opened in public; all bidders shall be afforded an opportunity to be present (either in person or through their representatives) at the time of bid opening, but bidders shall not be required to be present at the bid opening.

(vii) All bid evaluation criteria shall be disclosed in the bidding documents and quantified in monetary terns or expressed in the form of pass/fail requirements.

(viii) No bid may be rejected solely on the basis that the bid price falls outside any standard contract estimate, margin, or bracket of average bids established by the Borrower/Project Executing Agency.

(ix) Each contract shall be awarded to the lowest evaluated responsive bidder, that is, the bidder who meets the appropriate standards of capability and resources and whose bid has been determined (a) to be substantially responsive to the bidding documents and (b) to offer the lowest evaluated cost. The winning bidder shall not be required, as a condition of award, to undertake responsibilities for work not stipulated in the bidding documents or otherwise to modify the bid as originally submitted.

(x) Each contract financed with the proceeds of the Loan shall provide that the suppliers and contractors shall permit ADB, at its request, to inspect their accounts and records relating to the performance of the contract and to have said accounts and records audited by auditors appointed by ADB.

(xi) Government owned enterprises in the Borrower's country may be permitted to bid if they can establish that they (a) are legally and financially autonomous, (b) operate under commercial law, and (c) are not a dependent agency of the Borrower/Project Executing Agency.

(xii) Re-bidding shall not be allowed solely because the number of bids is less than three (3).

IX. PROJECT IMPLEMENTATION SCHEDULE

61. The project will be implemented for a period of three and half years, starting at the end of 2013 and completed by the June 2016. The project implementation schedule is shown in **Table 11**.

Table 13. Project Implementation Schedule

	Activities	Start	Finish	2013 (Year 1)	2014 (Year 2)	2015 (Year 3)	2016 (Year 4)
				J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
A. DESIGN AND MONITORING FRAMEWORK							
1	Nanning Health School						
	1.1 FSR Preparation		9-Jul-13				
	1.2 Preliminary Design	1-Apr-13	6-Aug-13				
	1.3 Construction Documents Development	1-Jun-13	30-Sep-13				
	1.4 Bidding Documents & Procurement	1-Aug-13	31-Dec-14				
	1.5 Construction	1-Dec-13	30-Nov-15				
	1.5 Acceptance and Delivery	1-Dec-15	31-Dec-15				
2	Nanning No. 4 Vocational Technology School						
	2.1 FSR Preparation		9-Jul-13				
	2.2 Preliminary Design	1-Apr-13	6-Aug-13				
	2.3 Construction Documents Development	1-Jun-13	30-Sep-13				
	2.4 Bidding Documents & Procurement	1-Oct-13	31-Dec-14				
	2.6 Construction	1-Dec-13	30-Nov-15				
	2.7 Acceptance and Delivery	1-Dec-15	31-Dec-15				
3	Capacity Development						
	3.1 Recruit and mobilize consultants	1-Sep-13	31-Dec-13				
	3.2 Development training plan	1-Jan-14	30-Jun-14				
	3.3 Carry out training	1-Mar-14	31-Dec-15				
	3.4 Project implementation support	1-Jan-14	31-Mar-16				
	3.5 Environmental monitoring	1-Jan-14	31-Dec-15				
	3.6 PPMS monitoring	1-Jul-14	31-Mar-16				
	3.7 Capacity Development Tasks	1-Jan-14	30-Jun-16				
B. MANAGEMENT ACTIVITIES							
1	Consultant selection procedures	1-Sep-13	31-Jan-14				
2	Bidding & procurement support	1-Nov-13	31-Dec-15				
4	Environment management system	1-Apr-14	31-Dec-15				
5	Gender action plan key activities	1-Feb-14	30-Nov-15				
6	Ethnic minority action plan key activities	1-Feb-14	30-Nov-15				
7	Social development action plan key activities	1-Feb-14	30-Nov-15				
8	Public participation key activities	1-Feb-14	30-Nov-15				
9	Annual/Mid-term review	1-Dec-13	31-Dec-15				
10	Project completion report	1-Jan-16	30-Jun-16				

(Source: consultant)

TA 8158-PRC: Project Preparatory Technical Assistance

CONSULTING TERMS OF REFERENCE

Author:

CONTENT

I. PACKAGE 1: START - UP CONSULTANCY

Selection by: Appointment of Individual Consultant Procedure

Position: **Start-up Procurement and Project Implementation Specialist** (national, 5 person-months)

1. The specialist shall have at least 10 years extensive and broad project management experience of the implementation of ADB and/or World Bank loan projects in the People's Republic of China (PRC). Good working knowledge of Asian Development Bank's (ADB) business practices, procurement guidelines, procedures for the appointment of consultants, project financial management and disbursement procedures, and the ADB Safeguard Policy Statement (2009) is essential. The specialist will have excellent Chinese language, very good English language skills and shall be computer literate (word processing, spreadsheets, presentation software, project planning software, etc.).

2. The specialist will provide advice and support to the project management office (PMO) and Xiangsihu Investment and Development Company (XIDC) in the initial setting up of (i) project management systems, (ii) procurement systems, and (iii) record keeping.

3. In conjunction with the PMO procurement agent the specialist will provide advice on (i) procurement procedures in accordance with the ADB Procurement Guidelines; (ii) the timely recruitment of the project management support consulting firm making use of the ADB advance procurement action facility (to include involvement in review of expressions of interest and shortlisting, preparation for the request for proposal and bid evaluation; and (iii) other advance contracting activities.

4. The specialist will be responsible for (i) initial establishment of PMO document control and record keeping in advance of project implementation, (ii) ensuring that ADB safeguards policies and adherence thereto, (iii) identification of training needs for project implementation activities, (iv) on-the-job training and briefings on the above to PMO and implementing agency staff as appropriate, (v) preparation of project financial management procedures, (vi) establishment of project accounting systems at PMO and implementing agency levels, (vi) setting up project disbursement procedures in consultation with the Nanning Municipal Finance Bureau, (vii) financial training in project accounting, disbursement procedures (including especially the statement of expenditure [SOE]procedures and record–keeping at implementing agency level), and project financial management.

Budget	**$ (ooo)**
National Consultants: (5 months)	50
Total:	**50**

II. PACKAGE 2: TVET STRENGTHENING & PROJECT MANAGEMENT SUPPORT

Selection by: Quality Cost Based Selection (QCBS) using the standard 80:20 quality cost ratio.

Introduction

5. This package will provide comprehensive and integrated support to the PMO and the implementing agencies. Under the overall direction and coordination of an international team leader the consulting will address the two main capacity building needs of the project:

   (i) **Project management support.** This part will be mainly directed at the PMO and XIDC as the implementation agency responsible for the procurement and implementation of civil works and equipment needed to improve TVET infrastructure. However this part will also provide support in key cross cutting aspects including project monitoring and evaluation, social inclusiveness and gender.

   (ii) **TVET strengthening.** This part will be mainly directed at the two project schools, Nanning Health School (NHS) and Nanning No. 4 Vocational Secondary School (NVTS), and provide support and related training in the areas of TVET leadership, competency-based curriculum (CBC) development, teacher learning methods and materials development, elderly care curriculum development, kindergarten and rural training bases, and impact assessment.

A. EXPERIENCE TO BE DEMONSTRATED BY THE CONSULTANT AND SCOPE OF WORK

1. Project Management Support

Experience Required

6. The appointed consulting company must be able to demonstrate proven experience in conducting previous capacity building for the project management and implementation support of ADB loan projects in the PRC. This experience must in turn demonstrate an in depth understanding of potential implementation issues and how such issues can be both mitigated against and resolved.

Scope of Work

7. The management support consultants will work primarily with Nanning Education Project Management Office (NPMO) and also with the

principal implementing agency, XIDC, but also with NHS and NVTS in providing advice, assistance and necessary training on the following:

(i) The development and periodic updating of comprehensive project implementation plans.
(ii) The introduction of document control and project management systems for the project, with particular attention paid to procedures for monitoring and control of project progress against implementation plans.
(iii) The development of procedures and formats for the reporting of project progress to the ADB, including the procurement plan, construction progress, withdrawal of funds and payment to contractors and suppliers and the implementation of action plans necessary to facilitate compliance with the ADB Safeguards Policy Statement (2009) and specific loan assurances contained in the project legal documents.
(iv) The development of effective engineering design and construction supervision systems to facilitate adherence to quality standards and completion targets.
(v) Procurement advice and support as may be needed to fill any gaps in experience or know-how on the part of NPMO, XIDC, and the appointed procurement agent (tendering company). Particular attention is to be paid to (a) ensuring that adequate guidance and training is provided to XIDC for the effective control and adherence to ADB guidelines in conducting the project procurement they will be responsible for; and (b) integrating the requirements for "green procurement" in a manner that is fully compatible with ADB procurement guidelines.
(vi) Provide advice and training on the establishment and operation of project accounting and disbursement procedures.
(vii) Provide advice and training on project financial controls, reporting and audit
(viii) Establish a Project Performance Monitoring System (PPMS) including its detailed design, data collection and analysis procedures, and the provision of training in its use. In order to avoid duplication of resources the outcome of this work should as far as possible be compatible with the PRC Ministry of Finance project reporting system as well as related local information gathering and reporting systems.
(ix) Develop and advise on the implementation of an environmental monitoring program and reporting procedures to ensure appropriate mitigation measures are undertaken during the project construction and operational phases of the project facilities based on the environment management plan (EMP) approved during the project preparation phase.
(x) Provide advice, training and support to the two project schools regarding the project environmental management system (EMS) initiative.
(xi) Ensuring that requirements of the agreed social and gender action plans (SAP and GAP) are fully integrated into project monitoring systems.

2. TVET Strengthening

Experience Required

8. The appointed consulting company must be able to demonstrate proven experience in conducting previous vocational education assignments in developing countries, as well as in depth knowledge of relevant government policies, strategies and plans, and specific issues relevant to the development of education and health services in the PRC.

Scope of Work

9. The objective of this part of the package is to support l, NVTS, and Nanning Municipal Government (NMG) in the improvement of the quality of TVET within Nanning Municipality. The TVET consultants will work predominantly with the NVTS and NHS, but also with the PMO and other relevant stakeholders, providing advice, assistance and necessary training to support improvements in the quality of formal TVET :

   (i) Strengthening and/or development of core curriculum standards and CBC for nurse education, elderly care, rural doctors' education and kindergarten teacher education, and incorporating employability and entrepreneurship skills in curriculum modules.
   (ii) Strengthening and/or development of curriculum and teaching and learning materials.
   (iii) Strengthening and/or development of vocational instructor skills through short term and an in-service training programs.
   (iv) Developing programs to maximize TVET management capacity including setting up of partnership programs nationally and internationally.

10. The consultants will also support NVTS and NHS in:

   (i) strengthening partnerships between employers and TVET institutions to improve system quality and responsiveness;
   (ii) improving industry advisory groups for nurse education, nurse education for the elderly, rural doctors education and kindergarten teacher education; and
   (iii) enhancing TVET policy research by providing inputs to the policy studies in strategic areas of elderly care and in-service and pre-service kindergarten teacher training.

11. Support will be given to the NEB, NEH, PMO, NHS, and NVTS in the improvement of educational leadership and management through:

   (i) provision of leadership training in curriculum, teaching-learning methods, assessment, monitoring and mentoring, assessment, community relations, industry relations, and educational leadership methods; and
   (ii) overseas short-term training in educational leadership and

management through study tours to overseas TVET institutions, TVET authorities, Industry training facilities, and program providers.

12. The consultants will provide support for two model training bases, for kindergarten and rural health training. For the **kindergarten** training base, the consultants will assist the NVTS to:

(i) develop a pedagogical and physical training base for kindergarten teachers based on 'best' national and international practices;
(ii) monitor and evaluate pedagogical processes and approaches adopted by the model kindergarten;
(iii) conduct action research with NVTS students, teachers and partner institutions;
(iv) disseminate information and findings to other institutions, authorities and society; and
(v) develop plans and strategies for financial, human, and physical sustainability.

13. For the **rural health training base(s)**, the consultants will assist the NHS to:

(i) select suitable site(s) for the location of rural health base(s);
(ii) develop a pilot curriculum for nurse and rural doctor training, including delivery modes, assessment methods, and syllabus;
(iii) develop a pedagogical (training) and physical (facilities) model for rural health base(s) in line with 'best' national and international practices;
(vi) monitor and evaluate training processes and approaches adopted by the rural heath bases;
(v) monitor and evaluate clinical processes and approaches adopted by the rural health base(s);
(vi) conduct a comparative analysis of strength and weaknesses of existing training program(s) and piloted training program; and
(vii) prepare and disseminate good practice material(s) regarding the pilot rural health training base(s).

3. Budget and Summary of Consulting Inputs

Overall Budget Summary

Item Description	Unit	Number	Unit Cost	Estimate	Notes reference
International consulting fees (TL)	Month	10	17,000	170,000	(i)
International consulting fees	Month	19	15,000	285,000	
International Per Diem	Month	29	3,000	87,000	
International Travel	Trip	14	1,500	21,000	(ii)
National consulting fees (DTLs)	Month	24	6,000	144,000	(iii)
National consulting fees	Month	67	4,000	268,000	(iv)
National Per Diem	Month	91	2,000	182,000	
National Travel	Trip	56	600	33,600	
Office Equipment for consultants	LS			5,000	(v)
Office rental for consultants	Month	48	1,000	48,000	(vi)
Office support	Month	48	2500	120,000	(vii)
Surveys & consultations	PS			20,000	(viii)
Local Travel	Month	125	100	12,500	
Workshops	PS			50,000	(viii)
Document Preparation	LS			10,000	(v)
Overall Total				**1,456,100**	

LS= lump sum as per consultant's financial proposal, PS= fixed provisional sum administered by the Client via the loan consulting contract.

Analysis of Consulting Inputs

Expertise	International		National		Notes
	Months	**Trips**	**Months**	**Trips**	
Team Leader	10	4			(ix)
Implementation Support					
Deputy Team leader (project management)			12	4	(x)
Environmental Management Systems	2	1	2	1	
Environmental Monitoring			3	4	
Financial Management			6	3	
Social Development, Poverty & Gender			6	3	
Monitoring and Evaluation	2	2	6	4	
Sub Total	***4***	***3***	***35***	***19***	
TVET Strengthening					
Deputy Team Leader, (TVET strengthening)			12	4	
CBC Development Training	4	1	6	3	
CBC Development Training (follow up)			3	9	
NHS content, interpersonal communication			1	0	(xi)
NHS content, nursing occupational risk management			1	0	(xi)
NHS content, elderly dental care			1	0	(xi)
NVTS kindergarten content specialist			6	9	
Teacher-Learning Methods, Training, & Materials Development	4	2	6	3	
Elderly Care Curriculum Development and Training Specialists	3	2	8	3	
Kindergarten Training Base	2	1	6	4	
RDTB & Curriculum Development and Training	2	1	6	2	
Sub-total	***15***	***7***	***56***	***37***	
Overall Total	**29**	**14**	**91**	**56**	

Notes and Assumptions

(i) The team leader is expected to command a slight premium to the other international consultants given the extensive and broad experience required.
(ii) This unit cost rate assumes economy class travel from Europe as the norm. In practice costs will fluctuate dependent on route and season of travel.
(iii) The deputy team leaders will require excellent English as well as relevant professional qualification and experience. They can therefore be expected to command a significant premium in fee rate (50% assumed) to other national consultants.
(iv) In practice the fee rates of national experts will vary quite significantly depending on their discipline and seniority, but $4,000 per month is considered a reasonable assumption for the average rate based on past QCBS bids.
(v) This is an item where consultants are expected to assess the needs of the consultancy and price for in their bid.
(vi) The main parts of the consulting services are assumed to be provided over a 4 year period. The consultant will be responsible for their office rental costs.
(vii) Employment by the Consultant, over a four year period, of an office secretary/interpreter with excellent English language skills.
(viii) This is a provisional sum (therefore not part of the competitive bid) to be included in the consulting contract, but administered at the discretion of the PMO.
(ix) The international team leader will be an education generalist with previous experience of TVET strengthening, leadership development, and in the impact evaluation of TVET investments.
(x) This position requires good practical experience of ADB project procurement, including ICB procurement.
(xi) Some national consulting expertise is expected to be available within Nanning and the overall number of trips has been estimated taking this into account. For these positions local expertise is known to be available, and use of experts from Nanning would be more efficient. .
(xii) An exchange rate of $1 = CNY6.1 is assumed in calculating the US$ equivalents of local costs.

III. Detailed Terms of Reference for Individual Consultants

A. OVERALL TEAM LEADERSHIP

Position: **Team Leader/TVET Capacity Building, Leadership, and Impact Evaluation Specialist** (10 person months international consulting input)

14. TVET Capacity Building, Leadership, and Impact Evaluation Specialist /Team Leader shall have a TVET related graduate degree in human resources management or other relevant degree and at least 15 years of relevant experience in planning, developing, implementing TVET projects, TVET management capacity building and TVET leadership development in developing countries, preferably in ASEAN countries.

15. The team leader will be in charge of supporting activities to be undertaken during the implementation phase and will be responsible for the field management of the technical assistance team. Team leader will be the primary point of contact for the ADB and the executing agency and implementing agency. As TL the Specialist will be responsible for the overall coordination and implementation of the TA. Specifically, the TL will

    (i) plan and coordinate the activities of the other international and national consultants to ensure that the outputs and reports meet all donor and borrower requirements;
    (ii) organize appropriate consultations throughout the project with key stakeholders both within and outside the Government and the relevant Bureaus and target school to reflect balanced views pertinent to the development of the project;
    (iii) be responsible for ensuring sex-disaggregated data and gender and social analysis inclusions in all TVET reports/outputs and ensure timely completion and submission of the following: (a) an inception report, (b) bi-annual reports, (c) midterm report and (d) draft final and final TVET consultancy reports. The TL will have excellent English language and communication skills, computer literacy skills and negotiation skills; and
    (iv) assist the PMO in production of reports to be submitted to ADB and government agencies;

16. As the leading TVET specialist on the consulting team this expert will

    (i) advise the PMO on project implementation, relevant procurement of TVET services;
    (ii) produce time-bound action plans ensuring timely implementation of components;
    (iii) undertake monitoring and reviews of TVET implementation strategies and formulation of possible improvements for ADB/NMG consideration ; and
    (iv) assist the target schools and NHB and NEB to develop dissemination strategies and provide advice and guidance on their implementation, develop and assist the target schools and development and institutionalization of overall sustainability plans and strategy.

17. For both target schools (Nanning no 4 Vocational School and Nanning Health School and target programs the specialist will be responsible for developing human resources and establishing the partnerships programs. In conjunction with other specialists where appropriate, the specialists will

(i) conduct HRD needs and demands analysis;
(ii) assess HRD management practice,
(iii) assess career development practices, from recruitment and selection to job placement,
(iv) design and provide training for management staff in planning, coordination and management of human resource development,
(v) support development of reference materials for development of quality HRD management practice,
(vi) Design and deliver capacity building activities to support dissemination of learning through the project to other TVET health care and kindergarten teacher training institutions (secondary and tertiary TVET institutions and universities),
(vii) design in collaboration with Gender Specialist, and provide training for management staff, teachers, School enterprise partners and GZAR Education Bureau staff on principles of inclusiveness practice and develop strategies to develop inclusiveness in all aspects of the training program,
(viii) advise and support the target schools on the establishment of industry reference groups,
(ix) identify and assess existing partnerships between Nanning Health School and Nanning No 4 Vocational School and corresponding educational institutions at local, national and international levels,
(x) identify and assess existing Nanning Health School-enterprise partnerships,
(xi) identify good practice educational institutions providing health care training, with effective institution-enterprise partnerships, in the PRC, in ASEAN countries and in the broader international context, for potential collaboration with Nanning Health School and Nanning No 4 Vocational school, respectively,
(xii) help the schools to design the training plan
(xiii) design and deliver workshops on good practice in educational institution-enterprise partnerships,
(xiv) support development and implementation of a strategy for dissemination of learning to relevant other education institutions and stakeholders,
(xv) identify and train school team to conduct graduate tracer study, from design through to data analysis and reporting and subsequent tracer study evaluation and refinement for implementation with subsequent graduating cohorts.

B. PROJECT MANAGEMENT SUPPORT

Position: **Deputy Team Leader, Project Management** (national, 12 person months)

18. This expert shall be a professionally qualified civil engineer and must have at least 20 years relevant work experience. The expert shall have a background in all aspects of ADB project management; and will also be thoroughly conversant with ADB's procedures and guideline publications; and will be expected to possess good report writing, presentation and training skills. Previous successful team leadership on the implementation of at least two ADB or World Bank funded loan projects is also required.

19. This position will assist the team leader by discharging coordination and supervisory responsibilities in relation to the project management support part of the consulting assignment. Specific duties of the position will include, but not be limited to providing advice and support to NPMO, XIDC and the project TVET institutions on:

    (i) Implementation planning,
    (ii) Design review and support to bidding document preparation (especially ICB),
    (iii) Reporting (bi-annual progress reports and project completion report),
    (iv) Procurement (annual updating of procurement plan, backstop advice),
    (v) Preparation of project management training plan, and advice, support and participation in its execution),
    (vi) Adherence to ADB safeguard policy statement and project agreement covenants, especially those pertaining to building codes and standards. The specialist will review designs, drawings and the ICB bidding documents, including the identification of potential technical problems and suggesting means of resolving these, including the incorporation of health, safety and environmental protection measures where appropriate.

20. Within the area of construction supervision and management the specialist will

    (i) advise on approval of construction methods,
    (ii) ensure work is undertaken according to the intent of contract specifications,
    (iii) exercise control over construction quality,
    (iv) ensure adherence to (a) contract work programs and recovery of slippage, (b) site health and safety procedures, (c) record keeping systems to protect client interests in event of claims etc., (d) undertake claims assessment and determinations, (e) assess and make determination on the content and valuation of any proposed variations to contracts during construction (whether initiated by the contractor or the client), (e) undertake inspection and handover upon completion of construction.

Position: **Environmental Management System (EMS) Specialist** (International 2 person-months; national 2 person-months)

21. The EMS specialists shall have a postgraduate degree related to environmental management and a minimum of 10 years experiences in establishing environmental management systems for organizations. The specialists will facilitate a participatory process to develop a green campus policy and establish an environment management system (EMS) on both campuses by developing simple business tools based on a nationally or internationally recognized methodology.[192] The EMS specialists will support NVTS and NHS with:

    (i) conducting gap analysis and needs assessment, including training and capacity building needs assessment;
    (ii) refining the Green Campus Policy (as drafted in Appendix 3 of the Initial Environmental Examination), including definition of a vision, environmental objectives and targets;
    (iii) defining setup and TOR of the EMS committee and its members; (iv) defining specific environmental management programs (including, but not limited to, energy conservation program; solid waste management program, water saving program);
    (iv) preparing EMS documentation (manuals);
    (v) plan and conduct specific training and workshops on EMS for faculty and students of NVTS/NHS, including exposure to China Green Campus Network;
    (vi) organize and facilitate review workshop with TVET institutions to evaluate the EMS establishment process and define follow-up actions;
    (vii) write a best practice note on EMS establishment for TVET institutions for dissemination to other schools and colleges in Guangxi.

[192] E.g. U.S. EPA Office of Environmental Stewardship (2007). Environmental Guide for Colleges and universities http://www.epa.gov/region01/assistance/univ/emsguide.html

Position: **Environmental Monitoring Specialist (national 3 man-months).**

22. The specialist shall have a postgraduate degree related to environmental engineering and a minimum of 10 years of experience in environmental management of ADB or IFI-funded projects and shall be familiar with relevant ADB environmental safeguards and project administration policies. The specialist will support the implementation of the EMP, including:

    (i) assess the project outputs' environmental readiness prior to implementation based on the readiness indicators defined in Table EMP.4;
    (ii) update the EMP including mitigation measures, monitoring plan, institutional arrangements, and training plan as necessary, to reflect the final project scope and detailed design, submit to ADB for review and disclosure;
    (iii) if required, update the IEE report for changes in the project during detailed design (for example if there is a scope change) that would result in adverse environmental impacts not within the scope of the approved IEE;
    (iv) support the EA, PMO, IA, IUs and tendering companies in preparing tender documents; ensure that the bidding documents and civil works contracts contain provisions requiring contractors to comply with the mitigation measures in the EMP and that relevant sections of the updated project EMP are incorporated in the bidding and contract documents;
    (v) support XIDC-ES and PMO-SO in reviewing and approving contractors' site-EMPs and organizing the conduct of periodic environmental impact monitoring;
    (vi) assist the NMG and PMO to establish a Grievance Redress Mechanism (GRM), and provide training for the PMO and GRM access points;
    (vii) Conduct regular EMP compliance verification, undertake site visits as required, identify any environment-related implementation issues, and propose necessary corrective actions;
    (viii) Prepare, on behalf of PMO, annual EMP monitoring and progress reports to ADB;
    (ix) provide training to PMO, IAs, IUs and contractors on environmental laws, regulations and policies, SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP; and
    (x) assist the PMO, IAs and IUs in conducting consultation meetings with relevant stakeholders as required, informing them of imminent construction works, updating them on the latest project development activities, and their rights under the GRM.

Position: **Financial Management Specialist** (national, 6 person months)

23. The financial specialist shall be professionally qualified and must have at least 10 years work experience in financial management, at least 3 years of which should be on the implementation of ADB or World Bank funded projects in the PRC. Good working knowledge of ADB disbursement procedures (2012), ADB's *Financial Management and Analysis of Projects*, and the PRC Ministry of Finance's requirements for project accounting for ADB and World Bank funded projects is essential. The specialist shall:

    (i) provide advice and support to PMO, XIDC and the project TVET institutions on the review and updating of project financial management procedures,
    (ii) conduct financial training (including regular reinforcement training) in project accounting, disbursement procedures (including the SOE procedures and record–keeping at IA and school level), internal control concepts and how they can be applied in schools, internal audit techniques, financial reporting and management etc.,
    (iii) assisting the Team Leader in the financial aspects of project progress reporting,
    (iv) undertake raining and capacity building of XIDC and schools financial staff in financial planning and related analysis, identification and mitigation of financial risks,
    (v) in collaboration of with Nanning Education and Health Bureaus and schools' Finance Directors identify financial management development needs resulting from sector and government reforms, and how these should be responded to (e.g. ensuring local financial management capacity is compatible with growing management autonomy of the TVET schools).

Position: **Gender and Social Development Specialist** (national, 6 person-months)

24. The national gender and social development specialist shall be professionally qualified and must have at least 10 years work experience in gender and social impact assessment, preferably within the context of urban development projects. In addition the expert must be fully familiar with the requirements of ADB's social safeguards policy (2009) and be able to demonstrate previous experience in the successful practical application of this policy during a previous project assignment(s). Knowledge of the education sector an ethnic minority issues is highly desirable.

25. The duties include, but are not limited to, providing advice and support to NPMO, XIDC and the project TVET institutions on:

    (i) Advice, and support in implementing the GAP and SAP;
    (ii) Provision of training in gender awareness and social issues of particular significance to the project and TVET schools generally (as outlined in the GAP);
    (iii) Helping to set up monitoring and reporting systems for social and gender related performance indicators and the provision of related training;
    (iv) Interpretation of social and gender related PPMS data with recommendations on required follow-up action;
    (v) Work with the TVET schools to identify social issues and develop action plans to make their programs more socially inclusive and relevant (e.g. human resources outreach, ethnic minority culture for inclusion in curriculum, gender issues in elderly care). In undertaking this task the expert should also liaise closely with project TVET capacity development experts working on curricula development etc. and
    (vi) Undertake an analysis of gender issues, drawing from tracer studies (including wages for female TVET graduates and their employment occupations) and other sources of data.

Position: **Monitoring and Evaluation (M&E) Specialist** (national, 6 person months).

26. The monitoring and evaluation specialist shall be highly numerate graduate with in depth knowledge of the design of management information systems (MIS). The specialist shall have a minimum of 10 years of experience in information management in the context of ADB- or IFI-funded projects and shall be fully familiar with the relevant ADB performance monitoring guidelines and requirements, most particularly the use of the design and monitoring framework (DMF), and the derivation from this of a project performance monitoring system (PPMS), including previous experience in PPMS design and making such a system operational. The M&E specialist will:

    (i) provide advice and support to NPMO, XIDC and the project TVET institutions in for establishing a Project Performance Monitoring System (PPMS) including (a) its detailed design, data collection and analysis procedures, (b) the provision of an operating manual in its use, which should as far as possible be compatible with the PRC Ministry of Finance project reporting system as well as related local information gathering and reporting systems;
    (ii) support PMO as needed in any dialogue with ADB needed to gain agreement to the PPMS design;
    (iii) provide training on the theory and praxis of management information systems generally and performance management systems in particular, leading on to the specific concepts underlying the PPMS;
    (iv) provide on-the-job training on the content and operations of the PPMS for the project;
    (v) in consultation with the national environmental specialist, ensure that requirements of the agreed environmental management plan (EMP) are fully integrated into project performance monitoring systems;
    (vi) in consultation with the social and gender specialist in the TVET consulting team, ensure that requirements of the agreed social and gender action plans (SAP and GAP) are fully integrated into project performance monitoring systems;
    (vii) design and advise on the implementation of socio –economic surveys needed to collect baseline and subsequent performance data for the in the TVET Consultancy component;
    (viii) conduct M&E assessment and capacity building in the TVET Consultancy component;
    (ix) provide operational support to the PPMS and provide advice and solutions to any operational problems that are encountered; and
    (x) interpret data and prepare reports needed for regular performance progress reports required by NPMO, NMG, and ADB.

C. TVET STRENGTHENING

Position: **Deputy Team Leader/TVET Management Specialist** (national 12 person months).

27. The Human Resources and Partnership Development Specialist/deputy team leader (DTL) shall have a TVET related graduate degree in human resources and/or partnership development least 15 years of relevant experience in planning, developing, implementing TVET projects. The DTL will have very good English language and communication skills, computer literacy skills and negotiation skills. The DTL will support and report to the TL related to activities to be undertaken during the implementation phase and will be responsible for the field management of the TVET technical assistance team. In conjunction with the Team Leader, as DTL, the specialist will be responsible for:

    (i) overall coordination and implementation of the TA TVET component;
    (ii) planning and coordination of the activities of the other international and national consultants to ensure that the outputs and reports meet all donor and borrower requirements;
    (iii) organizing appropriate consultations throughout the project with key stakeholders both within and outside the government and the relevant bureaus and target school to reflect balanced views pertinent to the development of the project;
    (iv) ensuring sex-disaggregated data and gender and social analysis inclusions in all TVET reports/outputs and ensure timely completion and submission of the (a) inception report, (b) bi-annual reports, (c) midterm report, and (d) draft final and final TVET consultancy reports; and
    (v) assist the PMO in production of reports to be submitted to ADB and government agencies.

28. In addition, the specialist will assist the team leader to:

    (i) advise the PMO on project implementation, relevant procurement of TVET services;
    (ii) produce time-bound action plans ensuring timely implementation of components;
    (iii) undertake monitoring and review of TVET implementation strategies and formulation of possible improvements for ADB/NMG consideration
    (iv) assist the target schools and NHB and NEB to develop dissemination strategies and provide advice and guidance on their implementation,
    (v) develop and assist the target schools in the development and institutionalization of overall sustainability plans and strategy.

29. For both target schools (Nanning no 4 Vocational School and Nanning Health School and target programs the Specialist will:

(i) Conduct human resource development (HRD) needs and demands analysis;
(ii) Assess HRD management practice,
(iii) Assess career development practices, from recruitment and selection to job placement,
(iv) Design and provide training for management staff in planning, coordination and management of human resource development,
(v) Support development of reference materials for development of quality HRD management practice,
(vi) Design and deliver capacity building activities to support dissemination of learning through the project to other TVET health care and kindergarten teacher training institutions (secondary and tertiary TVET institutions and universities),
(vii) Design in collaboration with Gender Specialist, and provide training for management staff, teachers, School enterprise partners and GZAR Education Bureau staff on principles of inclusiveness practice and develop strategies to develop inclusiveness in all aspects of the training program,
(viii) Advise and support the target schools on the establishment of industry reference groups,
(ix) Identify and assess existing partnerships between Nanning Health School and Nanning No 4 Vocational School and corresponding educational institutions at local, national and international levels,
(x) Identify and assess existing Nanning Health School-enterprise partnerships,
(xi) Identify good practice educational institutions providing health care training, with effective institution-enterprise partnerships, in the PRC, in ASEAN countries and in the broader international context, for potential collaboration with Nanning Health School and Nanning No 4 Vocational school, respectively,
(xii) Design and deliver workshops on good practice in educational institution-enterprise partnerships,
(xiii) Support development and implementation of a strategy for dissemination of learning to relevant other education institutions and stakeholders,
(xiv) Identify and train school team to conduct graduate tracer study, from design through to data analysis and reporting and subsequent tracer study evaluation and refinement for implementation with subsequent graduating cohorts.

Position: **CBC Development Training Specialists** (international, 4 person months, national 6 person months).

30. The specialist shall have a post-graduate degree in curriculum studies with a focus on TVET / adult education. She/he shall have at least 15 years of experience in competency-based curriculum (CBC) development and implementation in the TVET sector. The specialist shall:

    (i) undertake a needs-demands analysis within the two target schools and relevant programs,
    (ii) establish quality criteria for the education of teaching and lecturing professional CBC,
    (iii) develop CBC training framework and standards,
    (iv) develop core descriptors for employability skills to be contextualized across technical curricula,
    (v) develop effectiveness and efficiency measures to assess the quality of the strengthened CBC,
    (vi) improve CBC development guidelines for existing courses/modules,
    (vii) conduct CBC training workshops for staff of the target schools,
    (viii) develop materials and conduct workshops on authentic assessment strategies,
    (ix) develop of a training guides and manuals for training of target school staff on CBC development and implementation,
    (x) develop sample CBC lesson plans,
    (xi) assist the target schools to develop mechanisms for the monitoring of the effectiveness of curriculum dissemination;
    (xii) develop supplementary CBC training incl. self-directed learning materials for (a) beginner teachers and (b) advanced teachers in the two target schools,
    (xiii) establish and implement practical activities for CBC design,
    (xiv) establish strategies for allows for self-sustainable and long-term development of professional capacity in TVET CBC application.

Position: **NHS CBC Development Training Specialist for Follow Up Work** (national, 3 person months).

31. The specialist shall have a post-graduate degree in curriculum studies with a focus on TVET / adult education. She/he shall have at least 10 years of experience in competency-based curriculum (CBC) development and implementation in the TVET sector. The specialist will provide assistance post training for school faculty in implementing CBC development and review and evaluate the achievements of the CBC. The specialist will report to the CBC training specialists and provide inputs to improve training, assessment and implementation methods.

Position: **NHS Contents Specialists** (national, 3x 1person month for (i) interpersonal communication.

32. The specialist will be a chief nurse with more than 10 years of experience, and familiar with interpersonal communication between nurses and patients in hospital, clinic and other health services settings. The consultant will work with NHS faculty in the nursing major to develop the curriculum for a new course on interpersonal communication. The consultant will:

    (i) identify curriculum content (including case studies, activities and assignments and competencies for interpersonal communication;
    (ii) assist NHS faculty to integrate content into new course and
    (iii) assist the NHS faculty in developing an assessment tool for the new course.
    (iv) nursing occupational risk management

33. The specialist will be a chief nurse with more than 10 years of experience working in a hospital and familiar with occupational risks and management practices. The consultant will work with NHS faculty in the nursing major to develop the curriculum for a new course on occupational risk management. The consultant will:

    (i) identify curriculum content (including case studies, activities and assignments) and competencies for occupational risk management;
    (ii) assist NHS faculty to integrate content into new course and
    (iii) assist the NHS faculty in developing an assessment tool for the new course.
    (iv) elderly dental care.

34. The specialist will be a chief nurse with more than 10 years of experience working in an oral care division and familiar with elderly oral care. The consultant will work with NHS faculty in the nursing major to develop the curriculum for a new course on elderly oral care. The consultant will:

    (i) identify curriculum content (including case studies, activities and assignments) and competencies for elderly oral care;
    (ii) assist NHS faculty to integrate content into new course and
    (iii) assist the NHS faculty in developing an assessment tool for the new course.

Position: **NVTS kindergarten content specialist** (national, 6 person months).

35. The specialist will shall have a TVET related graduate degree and at least 10 years of relevant experience in curriculum development for kindergarten major. The consultant will work with NVTS kindergarten major faculty to develop the curriculum for five new courses to be added to the major. These include:

    (i) Integrating ethnic minority culture in kindergarten education;
    (ii) Kindergarten student assessment methodologies;
    (iii) Addressing special needs children in kindergarten;
    (iv) Early childhood education for 0-3 years;
    (v) Creating safe and successful learning environments for kindergarten schools.

36. In each case the consultant will:

    (i) identify curriculum content (including case studies, activities and assignments) and competencies for the new courses;
    (ii) assist the NVTS faculty to integrate content into new courses and
    (iii) assist the NVTS faculty in developing assessment tools for the new courses.

Positions: **Teacher-Learning Methods, Training, and Materials Development Specialists** (international, 4 person months, national, 6 person months).

37. The Teaching-Learning Methods, Materials Development and Training Specialists shall have a TVET related graduate in teaching – learning or other relevant degree, preferably a train-the-trainer qualification in and at least 10 years of relevant experience in TVET teacher training. The specialist shall:

    (i) Identify training needs, demands and existing gaps for both pedagogy and andragogy, and associated teaching-learning materials using a range of media and technology,
    (ii) develop competency-based framework for assessment of the learner-centered methodology,
    (iii) develop training package of “student-centered teaching-learning pedagogy” for intensive training and in collaboration with the two schools, develop the core teacher training system,
    (iv) develop teaching-learning assessment tools,
    (v) develop student-centered methodology modules for the in-service educational training/CPD program,
    (vi) Integrate course content (preschool education/ elderly care nursing/ rural health nursing) with the learner-centered methodology skills,
    (vii) develop training package for external clients such as clinical supervisors and kindergarten directors who will supervise student practical activities in kindergarten and hospital,
    (viii) Delivery intensive training in Student-Centered Methodology with a practical application of skills, knowledge and attitude for teachers at both target schools,
    (ix) Develop and establish a comprehensive CPD framework at institutional levels.

Position: **Elderly Care Curriculum Development and Training Specialist (**international, 3 person-months; national, 8 person-months)

38. The specialists shall have a degree in geriatric nursing and postgraduate degree in education/nurse education or similar qualification. She/he shall have a minimum of 10-years of demonstrated general experience in nursing curriculum development and design, and training methods for the nursing profession, preferably in developing countries. The specialist shall:

    (i) conduct an occupational analysis workshop to determine the competencies needed to competently function as a health care provider for the elderly,
    (ii) in collaboration with the CBC Development Training Specialist, conduct CBC development and implementation for the Nanning Health School (NNHS),
    (iii) integrate PRC National standards in nursing and learner competencies into a coherent nurse education program with a specialty in Elder Care,
    (iv) develop educational services and special courses for upgrading knowledge and skills of public and private employees in rural and urban health care facilities for Elder Care,
    (v) develop “advanced module of elderly care” based on existed “basic module of elderly care”, and integrate the Elder Care Certification Program,
    (vi) develop “bridge correspondence courses” (including learning resource) for part time students working in nursing houses enabling transfer to second year of nursing program
    (vii) assist the NNHS administration and faculty in the engagement of and collaboration with the private sector in Elder Care and government bodies in developing modules for continuing professional development and short term upgrading training,
    (viii) assist the NNHS in developing strategies for linking curriculum and employment needs by promoting advisory committees representing rural and urban Elder Care facilities,
    (ix) developing educational services and special courses for upgrading knowledge and skills of public and private employees in rural and urban health care facilities for Elder Care;
    (x) assist faculty to develop and manage competency-based distance training and computer-based technologies sharing programs designed for individualized and media-reliant standards,
    (xi) establish strategies to monitor and evaluate all curricula, through sample and tracer studies, and employer, student and instructor evaluations of the content of the curriculum and make ongoing revisions and improvements in all curriculums, to ensure sustainability.

Position: **Kindergarten Curriculum Development and Teacher Training Specialists** (international, 2 person-months; national, 6 person-months)

39. The specialists shall have a postgraduate degree in education with specialization in preschool/kindergarten teaching and/or teacher training. She/he shall have at least 10 years relevant experience as kindergarten teacher trainer and/or kindergarten teaching preferably in a model or teacher training kindergarten. The consultants will help to establish the kindergarten training base. The specialist shall:

    (i) assist the Kindergarten Training Base (KTB) to establish strategies for the development and implementation of an exemplary kindergarten training base.
    (ii) share international best practice on kindergarten curriculum and teaching methodologies.
    (iii) develop training materials and teaching aids,
    (iv) conduct action research workshops and assist teachers in developing practical action research projects relevant to KTB activities,
    (v) assist teaching staff to identify, test and assess internationally acceptable kindergarten training methods,
    (vi) develop CPD modules for KTB teachers and students,
    (vii) identify dissemination and sustainability strategies for the KTB,
    (viii) assist the NVTS in identifying and arranging best practice sites for field visits, potential partner institutions and applied research topics,
    (ix) develop an assessment tool for the training base teachers and students.

Position: **Rural Doctors Training Base Curriculum Development and Training Specialist (**international, 2 person-months; national, 6 person-months)

40. The specialists shall have a post-graduate degree in public health, community health or similar field and 10 years professional experience in community health and public health education and training, program development, and assessment of teaching and learning. The specialist should have extensive experience in working with rural and remote communities and health. The specialists will:

    (i) identify training needs, demands and existing gaps for rural medicine students, rural medicine core teacher trainers, rural medicine teachers, township hospital doctors and village doctors,
    (ii) develop three curricula based on the competency framework and level of attainment (a) for training rural medicine teacher to become teacher trainer, (b) for rural medicine student practicum, and (c) for training rural health providers to become student mentors, including specifying the competency, and level of attainment,
    (iii) develop and conduct capacity building program in public and community health for core teacher trainers;

(iv) develop a scoring system based on the site assessment framework and apply it to assess the quality of rural healthcare facilities and services,
(v) select at least two central township hospitals with good evaluation to be the pilot rural health training bases,
(vi) perform comparative analysis of strength and weaknesses of practicums in pilot sites and non-pilot sites,
(vii) identify strengths and weaknesses of organizational and institutional arrangements of the practicum to improve and strengthen the pilot for future scale-up,
(viii) use findings from regular evaluations of the training processes, clinical processes and approaches adopted by the rural heath training base(s) to make necessary changes to improve the functioning, operation and impact of rural health training base(s),
(ix) develop and implement a mentoring plan and strategies for (a) the rural medicine core teacher trainers in providing continued support and training to rural medicine mentors prior to, during and after their students' practicum and (b) the rural health teacher trainers in managing students' practicum rotation arrangements,
(x) provide support and facilitate student assessments and the teaching of public health competencies for the health students and nursing students; mentor,
(xi) prepare and disseminate good practice material(s) regarding the successes and lessons learned from establishing the pilot rural training bases

C. REPORTING AND TIMETABLE

41. The capacity building should ideally be programmed over a period of five years duration to last for the whole implementation period. However, it is anticipated that the most intensive period for capacity building would be during the first two years of project implementation.

42. The provider of the project management consulting services should be appointed as soon as possible after loan effectiveness and should be required to provide the following reports:

(i) An inception report (within one month of commencement)
(ii) A detailed training plan (within three months of commencement)
(iii) Half-yearly progress reports compatible with NMG's reporting obligations to ADB
(iv) Safeguards monitoring reports compatible with NMG's reporting obligations to ADB
(v) A completion report that is compatible with NMG's reporting obligation to ADB at the conclusion of project implementation (assuming physical works and equipment purchase are completed within 5 years as currently envisaged)
(vi) TVET strengthening reports as required by the detailed terms of reference

43. All these reports will be submitted in English and Chinese to NPMO and Chinese copies provided to the XIDC, NHS and NVTS. Recommendations arising from the capacity that require any form of formal client action or approval (i.e. by NPMO, XIDC or a specific project TVET institution) are to be presented in report format with an

appropriate level of justification to support the recommendations made. These reports can be provided in Chinese only unless NPMO specifically requests an English version for the purpose of dialogue with ADB.

D. FACILITIES TO BE PROVIDED AS PART OF THE CAPACITY BUILDING

44. The contract for providing the capacity building will include provisions for the Consultant to provide the following items, and this requirement is to be made clear in the Request for Proposals (RFP):

(i) All staff and personnel costs, including international, national and local travel, accommodation and subsistence;
(ii) In city travel costs for visits to TVET institutions;
(iii) Office rental (including telephone and internet access);
(iv) Office equipment (including basic office furniture), computer equipment and related hardware (printers etc.) and software necessary for the effective conduct of the consultancy, including an allowance for consumables;
(v) Arrangements and financial provision for in country training programs to be reimbursed at cost;
(vi) The provision of secretarial support and an interpreter (where necessary); and
(vii) The costs of all report and document preparation and printing.

E. OTHER REQUIREMENTS EXPECTED OF THE CONSULTING FIRM

45. The Consulting firm should be experienced in implementing similar capacity building programs in the PRC. Prospective providers, in tendering for the capacity building work should be encouraged to make any comments on and suggestions for improvement to the proposed program in submitting their technical proposal. The financial implications, if any, of these suggestions should be clearly indicated in the financial proposal. These suggestions will then be dealt with at the negotiation stage of the procurement of the consultant.

46. In their technical proposals, the prospective Consulting firms should be asked to demonstrate a clear understanding of the client's requirements and indicate inter-relationships between the different tasks within the assignment. An indicative program of work and for the deployment of the various specialists should be provided.

47. The technical proposals should include a methodology and proposed assessment criteria under which the client can measure the performance in the conduct of the capacity building work. This should include an assessment of work quality as well as timeliness of output. In submitting such assessment criteria the providers should be required to confirm they accept their use in measuring their own performance.

F. FACILITIES TO BE PROVIDED BY THE CLIENT

48. The PMO as client will provide, or make available to the Consultant, the following:

(i) suitable counterpart staff to work alongside the consulting team;
(ii) free Internet access;
(iii) a DDD telephone line (usage to be charge to the Consultant).
(iv) meeting rooms and training facilities necessary for the conduct of the services (see note); and
(v) assistance in the arrangement of work visas (where necessary);