

ECONOMIC ANALYSIS

1. The project has four components: (i) developing skills and management capacity of micro and small enterprises (MSEs) and their employees; (ii) strengthening access of MSEs to business services, credit, and commercial networks; (iii) improving infrastructure to support MSE access to market facilities; and (iv) delivering efficient project management and monitoring.

A. Overall Approach to Economic Analysis

2. The economic analysis of the proposed infrastructure investment, training, and capacity development under the project was undertaken in accordance with the principles and procedures set out in Asian Development Bank (ADB) guidelines.¹ The analysis period covers 15 years from the scheduled start of project implementation in 2016. Costs and benefits are quantified at December 2014 prices, and converted to their economic cost equivalents using shadow prices. An exchange rate of \$1 = MK1,028 is used when converting foreign exchange costs to the local currency equivalent. All costs are valued using the domestic price numeraire. The analysis derives the economic costs from its financial estimates of investment costs and operation and maintenance (O&M), adjusted for transfer payments and other market distortions. In the absence of well-established shadow factors for Myanmar, the analysis considers factors used in a project in Viet Nam where traded goods, net of taxes and duties, were adjusted by the shadow exchange rate factor of 1.1, while the shadow wage rate factor of 0.75 was used for unskilled labor.² Both costs and benefits are treated as increments to a without-project scenario.

3. The economic viability of the project was determined by computing the economic internal rate of return (EIRR) and comparing the result with the economic opportunity cost of capital of 12%.³ The viability of the investments was then tested through sensitivity analysis under scenarios in which such key variables as economic costs and benefits changed from those anticipated.

4. The study team conducted socioeconomic surveys during 22–30 November 2014 for the subproject areas, and undertook focus group discussions and interviews with key informants.

B. With- and Without-Project Scenarios

5. **Without the project.** In Mon State, underemployment is reported at 39%, with approximately 20% of families classified as poor. This is despite rapidly increasing trade and tourism in the area. Approximately 55% of the population is self-employed, operating MSEs and selling agricultural products such as processed foods and snacks (e.g., fruit and vegetable juices, jams, and dried goods) and handicrafts including bamboo and woven products in nearby markets (footnote 1). However, these MSEs are constrained by low productivity and make limited contributions to reducing household poverty in the project areas. They face various challenges, including (i) insufficient product knowledge, access to appropriate processing

¹ ADB. 2013. *Cost–Benefit Analysis for Development: A Practical Guide*; ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila; ADB. 1999. *Handbook for the Economic Analysis of Water Supply Projects*. Manila; and ADB. 1994. *Framework for the Economic and Financial Appraisal of Urban Development Sector Projects*. Manila.

² ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Socialist Republic of Viet Nam for the Greater Mekong Subregion Corridor Towns Development Project*. Manila.

³ An economic internal rate of return that exceeds the assumed economic opportunity cost of capital indicates that the project is economically viable.

technology, and lack of skilled employees; (ii) lack of business management skills and access to business development services; (iii) limited access to finance and markets;⁴ and; (iv) weak infrastructure and institutional support.

6. **With the project.** The project will support 900 households in 12 villages in Chaungzon, Kyaiktho, Mawlamyine, and Mudon townships, to access livelihood and employment by promoting pro-poor microenterprise development of locally made handicrafts and processed foods for local and tourist markets. The project will provide technical training to (existing and potential) MSEs, together with business development and management skills; and facilitate access to finance, markets, and business support services. This will enable MSEs and women to establish productive businesses or expand into higher-value production. MSE development will create new jobs and support skill development aligned with labor market needs. This will support the unemployed and the poor and marginalized, especially women, to enter the workforce.

D. Economic Benefits

7. Economic benefits considered when evaluating the economic viability of the proposed investments include the following:

8. The economic value of incremental income for the existing 900 producers, retailers, and traders due to enhanced capacity is based on the increase in daily income from the without-project scenario estimated at the economic price of \$2.4 per day to the with-project scenario of \$3.4 per day.⁵ Data was derived from the value chain analysis conducted in November 2014. The economic value was computed by multiplying the number of existing producers, retailers, and traders by the estimated incremental income due to the project, and assuming the following employment rates: 40% in 2017, 50% in 2018, 60% in 2019, 70% in 2020, and 80% from 2021 onward. Since 2010, the employment rate in Myanmar has averaged about 76%.⁶

9. The economic value of income from new employment to be generated by the project was computed by multiplying the expected number of trainees (495 people currently unemployed) with the expected daily income they will earn after the training (\$3.4/day) and the employment rates, considering the time required for the beneficiaries to find new employment. The rates are conservative compared with the planned disbursement of the project, which is 86% in 2016, 8.4% in 2017, 5.1% in 2018, and 0.4% in 2019. Data and assumptions are based on information gathered through the household surveys conducted in each of the subproject areas and interviews with the poor women and ethnic minorities, entrepreneurs, and retailers.

10. The value of economic benefits from the construction of a market facility was computed by multiplying the estimated 25 vendors with the amount that they are willing to pay for the rental of market stalls. The willingness to pay is a proxy indicator of the benefits that would be derived from the project as perceived by the target users. As per the survey conducted in November 2014, the target vendors are willing to pay about \$100/stall/month or \$3.3/stall/day. However, since the amount is relatively high for targeted beneficiaries, for the purpose of the

⁴ In Mawlamyine township, no craft or souvenir markets are dedicated for tourists to buy local products. Several civil society organizations and nongovernment organizations have small craft outlets dispersed on the outer edge of the city far from the main tourist site. A key reason for this is that these less ideal locations offer affordable rents. However, annual rental fees are often required in advance.

⁵ Income data were converted to economic cost by multiplying the financial cost with a conversion factor of 0.75 for unskilled labor.

⁶ World Bank. 2014. *World Development Indicators*. <http://data.worldbank.org/country/myanmar>.

cost–benefit analysis, a rate of \$20/stall/month or \$0.7/stall/day is assumed as the benefit of the project and vendors are assumed to be at work 250 days annually.

11. The analysis makes annual projections of target beneficiaries, income, and willingness to pay of market vendors. Parameters and values used in quantifying the economic benefits are shown in Table 1.

Table 1: Parameters for Economic Benefit Computation

Item	Total	Mawlamyine	Kyaiktho	Remarks
Target Number of Trainees	1,740	795	945	Handicrafts = 845 Processed foods = 895
Producers	900	450	450	Persons
Retailers and traders	160	60	100	Persons
Members of producer households and employees	500	250	250	
Market management committees	10	10	0	
Processing facilities committees	20	0	20	
Master trainers from producer groups	50	25	25	
Workers in processing facilities	100	0	100	For 1 handicrafts and 1 food processing facility
New Employment	495	270	225	
Market vendors	25	25	0	
Market vendor employees	50	50	0	
Market operations	20	20	0	
Employees for 1 handicraft and 1 food processing facility (to be constructed under Output 3.	100	0	100	
New MSEs (remittances)	100	0	100	
New MSEs, producer groups, self employed	150	150	0	
Master trainers from producer groups	50	25	25	
Estimated annual employment rate of trainees				Consultant's best estimates
2017	40%			
2018	50%			
2019	60%			
2020	70%			
2021 and onward	80%			
Average daily salary per worker^a				
Without project (\$/day)	2.4			
With project (\$/day)	3.4			
Willingness to pay of market vendors^a				
Number of vendors		25		
\$/stall/day		0.7		Assumed at \$20/stall/month
Number of vending days per year		250		Assumed at 5 days/week.

^a Fact-finding survey conducted on 22-30 Nov 2014. Multiplied by conversion factor for unskilled labor of 0.75.

Source: Asian Development Bank estimates.

12. Other economic benefits identified but not included in the quantification of the EIRR include increased economic productivity that can contribute to reduction of poverty in the project areas, including multiplier effects of increased income; increased access to credit facilities and technical assistance to small and medium-sized enterprises; convenience and savings in time for producers, traders, and retailers with the construction of a local market facility; promotion of trade and tourism in the project areas; and enhanced capacity for project management and monitoring.

E. Economic Costs

13. Economic costs were derived from the estimates of capital and noncapital investments (project management and training component) in financial terms, exclusive of price contingencies, duties, and taxes. The distribution of costs was identified for traded and nontraded components, multiplying the results by the appropriate conversion factors. The total economic cost is computed at \$3.37 million (Table 2).

Table 2: Computation of Economic Costs (\$ million)

	Financial Costs			Financial Costs Excluding Tax, Duties & Price Contingencies								Total Economic Costs
	Foreign Exchange	Local Currency	Total Cost	Unskilled Labor		Skilled Labor		Local Materials		Foreign Costs		
				Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	
A Base Cost												
1 Civil Works	0.37	0.55	0.92	18%	0.17	12%	0.11	30%	0.28	40%	0.37	0.91
2 Mechanical and Equipment	0.17	0.06	0.23	0%		15%	0.03	10%	0.02	75%	0.17	0.25
3 Consultants												
a. Project Management	0.04	0.09	0.13	0%		50%	0.06	20%	0.03	30%	0.04	0.13
b. Capacity Development	0.40	0.93	1.33	0%		50%	0.67	20%	0.27	30%	0.40	1.37
4 Training	0.06	0.17	0.22	0%		50%	0.11	25%	0.06	25%	0.06	0.23
5 Others		0.17	0.17	0%		50%	0.09	50%	0.09	0%		0.17
Subtotal (A)	1.03	1.97	3.00	5%	0.17	36%	1.07	24%	0.73	34%	1.03	3.07
B Contingencies												
1 Physical	0.10	0.33	0.43	4%	0.02	25%	0.11	17%	0.07	24%	0.10	0.31
2 Price												
Subtotal (B)	0.10	0.33	0.43	4%	0.02	25%	0.11	17%	0.07	24%	0.10	0.31
Total Project Cost (A+B)	1.14	2.30	3.44	5%	0.18	34%	1.18	23%	0.81	33%	1.14	3.37

Source: Asian Development Bank.

14. O&M costs are estimated at \$3,321 per month for the market facility and \$2,170 per month for the processing facilities. Conversion factors were used to convert civil works to economic cost. The resulting total economic O&M cost is \$65,000 per annum.

F. Economic Internal Rates of Return and Sensitivity Analysis

15. Based on the estimates of the stream of economic benefits and costs over the 15-year analysis period, the EIRR is computed at 13% and the economic net present value at \$0.17 million. Sensitivity tests were computed for scenarios based on (i) 20% increase in investment costs, (ii) 20% increase in O&M costs, (iii) 20% decrease in beneficiaries' incremental income, (iv) 20% decrease in willingness to pay of market vendors, and (v) simultaneous increase in costs by 20% and decrease in benefits by 20%. The project is most sensitive to a decrease in incremental income, increase in investment cost, and a worst case of simultaneous increase in costs and decrease in benefits. Table 3 summarizes the results of the base case and the sensitivity tests for the overall project evaluation.

Table 3: Economic Internal Rates of Return and Sensitivity Test Results

Year	Economic Benefits (\$ million)			Economic Costs (\$ million)			Net Economic Benefit.	Sensitivity Tests					
	Increase in Income	Willingness to Pay	Total Economic Benefits	Investment	O&M Cost	Total Economic Cost		Investment	O&M	Incremental Income	Willingness to Pay	Cost (+20%)	
								+20%	+20%	-20%	-20%	Ben (-20%)	
2016				1.78		1.78	(1.78)	-2.14	-1.78	-1.78	-1.78	-2.14	
2017	0.32		0.32	0.59		0.59	(0.27)	-0.39	-0.27	-0.34	-0.27	-0.45	
2018	0.40		0.40	0.78		0.78	(0.39)	-0.54	-0.39	-0.47	-0.39	-0.62	
2019	0.48	0.004	0.48	0.22	0.07	0.28	0.20	0.16	0.19	0.10	0.20	0.05	
2020	0.56	0.004	0.56		0.07	0.07	0.50	0.50	0.48	0.38	0.49	0.37	
2021	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2022	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2023	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2024	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2025	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2026	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2027	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2028	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2029	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
2030	0.64	0.004	0.64		0.07	0.07	0.58	0.58	0.56	0.45	0.57	0.43	
							NPV	0.17	(0.38)	0.11	(0.47)	0.17	(1.08)
							EIRR	13%	10%	13%	8%	13%	5%

EIRR = economic internal rate of return, ENPV = economic net present value, O&M = .

Source: Asian Development Bank estimates.

G. Project Sustainability

16. The proposed outcome of the project is sustained by strengthening project beneficiaries' capacity to engage in all stages of the value chain, from identifying business opportunities to sourcing raw materials, and the production and sale of finished products. MSEs will be organized to form producer groups to operate and maintain facilities and initiatives developed by the project. Management, O&M, and marketing plans will be developed and implemented as part of the project's exit strategy. Training will be implemented through, and institutionalized within, appropriate government agencies to ensure sustainability.