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Draft Final Report
Discussion Note # 1
Economic and Urban Development Vision
for Far Western Terai Region

August 2015

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Part A : Economic Development Vision and Strategy

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1 Context

1.1 Purpose of the Vision

1. **Background.** The Economic Development Vision and Strategy for the Far Western Terai has been prepared in the context of the project preparation [TA 47252] for a proposed ADB loan for the Second Integrated Urban Development Project (IUDP2) in four municipalities in the Terai region of Far Western Nepal. The project is largely expected to improve urban infrastructure and services related to municipal roads, water supply, sanitation, drainage, solid waste, and construct municipal buildings where required. The investments are meant to benefit the municipalities and the region. The project also seeks to (i) identify synergies with other development initiatives, (ii) identify opportunities for regional infrastructure, and (iii) help the region to plan for sustainable urbanization.

2. **Objectives.** The direct purpose of the project is to fund urban infrastructure and to strengthen urban sector institutions. The broader goals are to uplift the standard of living of the people of this region, reduce poverty and capitalize on the benefits of urbanization to support economic growth based on a sustainable development track. A regional perspective to planning is critical in an increasingly interconnected world, where a better understanding of the flow (or potential flow) of ideas, people, services and goods can help maximize development impacts.

3. **Relationship between urban and economic development.** ADB, through its various interventions of this kind in the region, recognizes that sustainable urban development cannot be achieved without sustained economic development. While investments in city infrastructure would surely translate to an improvement in the liveability index of the towns and contribute to attracting human resources to the region, it would not automatically translate into a high level of economic growth and development.

4. **Alignment of investments with economic vision.** In order for economic growth and development to be attained in a sustained manner, many other strategic economic interventions and actions are required to be undertaken by all stakeholders [predominantly government in this case]. Also, the urban development vision, and following from that, the urban infrastructure investments should be aligned with this overarching economic development vision.

5. **Need for strong leadership.** Strong leadership is required to remain focused on the vision, goals and priorities, and drive multi-sector coordination, in order to ensure the alignment of the regional economic vision with the physical and investment plans and promote sustainable land management.

6. It is with this purpose that this regional economic visioning exercise has been undertaken. It is not meant to be a deep exploration of the subject, but is intended to (i) guide the urban development vision of project municipalities, (ii) help to identify priority investments that will contribute to sustainable urbanization and unleashing the region's economic potential, and (iii) ultimately informing the process of selecting and defining the subprojects to be financed under IUDP2.

1.2 Nepal – A gifted country

7. Nepal is undoubtedly a gifted land with a deep history and a fine culture shaped across many generations. It has an enviable 3-tier landscape that offers snow-capped

mountains in the far north, the rich forest and green hills in the middle region and the fertile plains, also referred to as the Terai, in the south.

8. Culturally, it has a rich Hindu tradition that has evolved its own architecture, town planning systems and a way of living that is harmonious with nature, notwithstanding the difficult living conditions in the mountainous regions. It has innumerable temples and spiritual centers scattered across the country that have been inhabited and maintained for centuries. Any economic / urban development vision needs to build on this rich tradition and culture for it to be sustainable while offering a distinctive Nepali flair, and preserving its cultural assets.

9. However, the country has experienced difficult times in the last few decades. A transition phase from a monarchy to a federal republic accompanied by a decade of civil war followed by political instability and the recent devastation of the April 2015 earthquake has badly affected the prospects of the nation and its people.

10. On a positive note, it appears that the future holds promise with advances in political dialogue to adopt the constitution, and a number of ongoing energy projects that could increase Nepal's manufacturing potential, among other benefits. In this promise lies a great opportunity for the nation to leapfrog and adopt models of development that other developed nations are only beginning to explore and understand. It has a great opportunity to embrace aspects of new economic thinking founded on principles of sustainable development.

1.3 The Terai – the bread basket of Nepal

11. Blessed with fertile soil, the Terai plains are fed by multiple rivers that originate in the Himalayas and flow south towards the Indo-Gangetic plains. It has a mix of wetlands, grasslands and forests spread across the entire region and houses more than 50% of Nepal's population.

12. In addition to its role as Nepal's agricultural belt, the Terai also includes the main access points with India, Nepal's largest trading partner. The borders in the hilly and mountainous areas are quite inaccessible. Consequently, many of the border towns in the Terai region are continuing to evolve as the main trading and logistics hubs.

13. While both of these factors – agricultural center and best access to India - should have transformed major Terai towns into the country's economic hot spots, this has not happened at the expected pace for a number of historical reasons. The first is to do with the fact that the political capital of Nepal was always the Kathmandu Valley. Every other region catered to serve the royalty based in Kathmandu and other hill regions of Nepal. The other reason was that the Terai had a long history of malarial infestation and could not sustain a large population. It is only recently that malaria was eradicated in the Terai and that has encouraged greater migration to the plains.

14. The Tharus are the original inhabitants of the Terai plains (primarily Far Western and Western Terai) and they were known to be malaria resistant. The subsequent settlers were called Madhesis whose primary occupation was farming. Overtime, many other tribes from the hills and mountains have also gradually settled in the Terai, making it a place of diverse culture, race and castes.

1.4 Far West Nepal – *Sundar Sudur Paschim*¹

15. **A new development paradigm.** Translated into English, it means *Beautiful Far West*. It is beautiful because it is unspoiled. It is unspoiled because it is also the least developed region of Nepal. The challenge and opportunity for this region is to get on a path to accelerated human and economic development whilst retaining its beautiful and unspoiled nature; whilst retaining its pristine rivers, water bodies, wildlife and tribal culture. This is not impossible, but it calls for a new kind of vision for developing regions – *a vision that is founded on principles of sustainable development*, wherein there is equal importance given to ecological and social implications of *growth*, and not one that is merely focused on exploitation of resources and assets.

16. Adding to the challenge would be the challenge of convincing the majority of the local population to follow a sustainable development growth track, which typically does not offer the trappings of a modern, consumerist society. Encouragingly, in all the consultative workshops conducted to prepare the vision and discuss the project, several local stakeholders - ranging from politicians to government officers to academicians and the common man – emphasized the need to adopt sustainable practices – organic farming, bio-engineering for river training and flood protection, adoption of sustainable tourism guidelines, community forestry initiatives, etc.. These give hope that an economic thinking founded on sustainable development principles may find expression in this region, if it is well articulated, and building on local ideas and initiatives.

¹ "Sundar Sudur Paschim" is the vision developed by Kailali Chamber of Commerce through consultation with local stakeholders.

2 Prerequisites for Transformational Growth and Development

17. There are important prerequisites for the Far Western Terai to achieve transformational growth. These points are discussed in the section below and can be seen as necessary conditions for accelerated economic development. However, the region can still avoid haphazard spatial growth and prepare itself for a more transformative growth while these conditions related to governance, transport, energy, and education are met.

2.1 The Constitution and decentralization of governance

18. The successful implementation of strategies requires institutional leadership at different levels. The leadership vacuum in the FWR of Nepal [and perhaps applicable to all regions] is pronounced with local elections not having taken place since 2002. This is in addition to the political instability at the centre, wherein much of the political leadership is engaged in the formation of government and remaining in power.

19. Even if the constitution was to be enacted in the near future and political stability was to prevail, one must recognize that decentralization of governance is not a short-term phenomenon. It requires time for the centre to devolve certain powers, and for the regions [or any other form of sub division of the country] to develop leadership capacity. Until there are identified political and administrative champions for the region, and institutional frameworks that support regional development, there may be limits to what well-intentioned strategies and plans can achieve.

2.2 Strengthening Nepal's economic links with India

20. Strengthening economic cooperation and connectivity hinges largely on efforts at the highest levels of both governments. Nevertheless, there are some initiatives that can be taken across all levels of government and by the private sector to strengthen ties with mutual benefits. Strategic recommendations with benefit to the entire country, including FWR, are listed below.

- a) The Tourism Promotion Board of Nepal (TPB) could look at a collaborative partnership with the Indian Tourism Development Corporation (ITDC) for mutual promotion and development of integrated tour packages, to include FWR.
- b) The Nepal TPB could forge partnerships with some of the state tourism boards of India, namely in Uttar Pradesh, Uttarakhand, Madhya Pradesh, Bihar, West Bengal, and others, that could include marketing arrangements, and regular promotion campaigns in these states.
- c) Through forging of alliances and joint ventures, the Ministry of Industry, Commerce and Supplies could attempt to attract the Indian private sector into investing in Nepal in the following sectors: tourism, agro-processing, herbal care products, and food processing. This would require careful identification and marketing of business opportunities to Indian investors along with a Nepali Business Delegation.
- d) To increase tourist traffic from India to FWR, intermediate solutions for inter-country bus transportation between India and Nepal across the borders at Bheemdatt and Dhangadhi should be identified. Smaller luxury services [e.g. 20 seaters] could be jointly run by the GoN and the State transport corporations of India from key destinations in India such as Delhi, Lucknow, Agra, Kanpur, Chandigarh, Allahabad, Varanasi, Nainital, etc. The service could operate through special licenses.

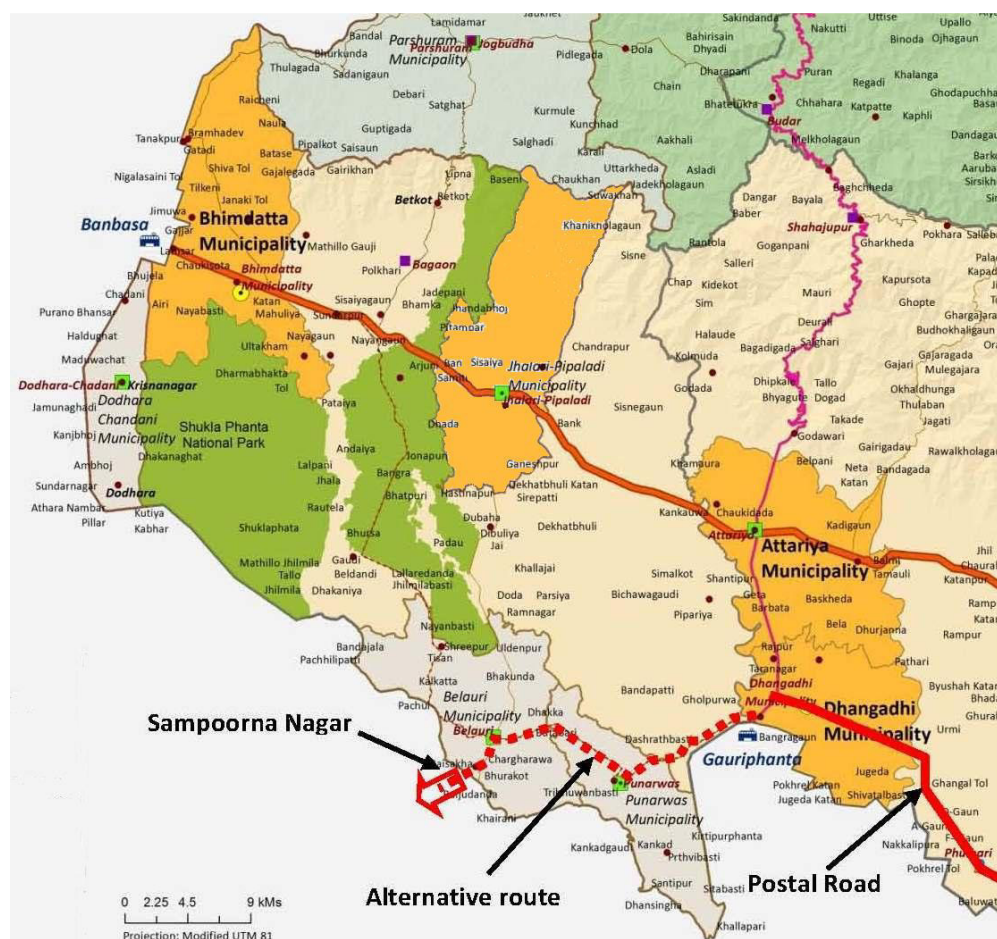
2.3 Developing Transportation

2.3.1 Developing strong transport links with India

21. The economic prosperity of Nepal and particularly the FWR is heavily tied to its relations with India and more specifically with the quality of the transport access between the two countries. While this would be broadly governed by the political relationships between the two nations, determined by factors that go beyond economics, one needs to acknowledge that until there is a high mobility of goods and people between the two countries, there will continue to be constraints to growth. A high-quality two-lane road would be the minimum requirement for a reasonable economic engagement. Critical linkages to be resolved are:

- A bridge across the Mahakali River for the Asian Highway No.2 (AH-2) near Bheemdatt to link to the East-West Highway (H-01); and
- An alternative road from Dhangadhi to India that does not go through the Dudhwa National Park or the Pilibhit Tiger Reserve (both in Uttar Pradesh). One potential route could be via Punarvas municipality and further leading to the Nepal border abutting the Indian town of Sampooran-nagar. If the Uttar Pradesh government in India can be further convinced to strengthen the linkage between Sampooran-Nagar and Palian Kalan, then this would offer an alternate entry into the Dhangadhi area that keeps traffic away from the key conservation areas, see **Figure 2-1**.

Figure 2-1: Alternative Route to Indian Border



2.3.2 A major regional roads program

22. All economic activities for the region, particularly tourism and agriculture, require connectivity between towns and villages; and connectivity to tourist centres and to agricultural heartlands. Until a massive road program is implemented across the region, there would be limitations to accelerated growth. In comparison to the more serious challenge of building a bridge over the Mahakali River and necessary infrastructure (possibly requiring international cooperation), roads are conceivably easier to address, if made a strategic priority by the central government. Some further recommendations are below.

- a) The postal road² needs to be developed as a dependable two-lane highway that complements the E-W highway (H-01) and this is particularly important for a large part of the Terai; and Kailali and Kanchanpur Districts in particular. A mid-hill road, connecting hill areas from east to west of Nepal, is already under construction and that would serve an equivalent purpose far western hill region (refer Figure 2-2).
- b) The roads connecting all the municipalities to the E-W highway and the postal road should be two lane black-topped roads (refer Figure 2-2 below for the municipalities in the Far West Region and major roads). This is extremely critical for movement of labor, tourists and agricultural produce. The connection of farms to wholesale markets would minimize risk and improve market mechanisms for agricultural produce. It would also enable short-stay tourists, such as the weekend tourists from India to see and do more, thereby improving the overall attractiveness of FWR as a tourism destination.

Figure 2-2 : Municipalities in Far West Region and Major road Networks



² Postal road, traditional route, runs near Indian boarder from east to west. Government of India, with DoR, has been upgrading the road; road connecting Tikapur and Dhangadhi is in the final stage of completion. However, the alignment from Dhangadhi west is not defined yet due to local dispute.

2.3.3 Public transport system

23. In addition to a roads program, the region also needs to think ahead and develop a well-run public transport system that can be scaled up as demand increases and economic feasibility can be achieved. Most of the conventional public transport modes in Nepal are privately operated and they do not seem to offer the requisite comfort and service levels to make a difference to people's lives. The local population's capacity to pay for a good service level may also not exist at present. However, tourists who may be willing to pay for a good service are left without much choice. Unfortunately, unless towns reach higher levels of maturity, public transportation systems of good quality are rarely profitable/ attractive for the private sector. Hence, the central government needs to invest in a public transport system [and this could be a national initiative] that provides safe, comfortable and predictable mobility solutions for the domestic population as well as for tourists. This initiative could potentially have far-reaching benefits for the country as a whole.

2.3.4 Improve linkages between Dhangadhi and Dipayal

24. While Dipayal is the administrative headquarters for FWR, Dhangadhi is the district headquarters for Kailali and Bheemdatt for Kanchanpur of the Terai plains. Dipayal is only connected to the plains by the north-south road passing through Attariya. It is 190km from Dhangadhi to Dipayal and takes a minimum of 6 hours due to the windy hill roads. Unfortunately, there appears to be very little collaboration between these two locations. If regional programs are routed through Dipayal, then the lack of connectivity to the Terai would be a severe disadvantage. The introduction of daily flights between Dipayal and Dhangadhi in the morning and the evening would help build stronger collaboration between the Administrative Offices and enable better outcomes for the FWR.

2.4 Ensuring sufficient and surplus availability of power

25. While the current data indicates that the FWR is relatively comfortable with respect to power availability, one must also recognize that we are talking about the power demands of one of the least developed regions of Nepal. The region is surely not devoid of power cuts, indicating a clear shortage even at current demand. Availability of continuous and reliable power in surplus can often trigger economic activity. Besides, as the quality of life begins to improve by virtue of development, the demands for power will quickly increase. Recommendations for strategic actions and policies related to energy are highlighted below.

- a) The central government should accord strategic priority to the development of hydro power projects in the region. Being a clean and renewable source of power, it is aligned with the sustainable development path. If projects are well conceived, they could also be much cheaper than other sources of power, offering a strong comparative advantage over its Indian neighbor.
- b) Strategic mega projects such as Pancheshwar and West Sethi may be pursued based on their own merit. A few large projects, chosen consciously and limited in number, could provide the much needed boost to the overall power system.
- c) One of the reasons quoted for the seasonal shortage of power is the fact that many of Nepal's hydro projects in the region are run-of-the-river schemes which produce less during periods of low flow in the dry winter months from November to March. However, small scale run-of-the-river schemes are environmentally superior to large dam hydropower projects, and hence they should remain the preferred option. Other complementary options will have to be identified to manage peak deficits.

- d) Micro-hydro projects at a community scale should be encouraged to further complement other renewable sources such as bio-mass or solar, and provide year round supply through decentralized, community-scale systems. These systems could potentially supplement the power supplied by the regional grid and help in handling peak loads.

2.5 Improving basic education and provision of vocational education

26. This region has the lowest level of literacy [54%] among all regions of Nepal and the percentage of adults with a professional degree is worryingly low - about 2%. Economic transformation of the region will require drastic improvements in literacy and trained professionals. It would take a generation for this educational transformation to happen. A number of recommendations related to education are listed below:

- a) **Applied vocational education.** While taking the necessary steps to improve basic education, which in Nepal is largely in the private domain, the other immediate priority could be on applied vocational education through both government and private efforts. The advantage is that vocational education could be made available to a large cross-section of the population, irrespective of present educational levels. Focus areas could be:
- i. *Tourism* - training of guides, mountaineers, hospitality industry staff, English and other priority languages, multi-cuisine cooking skills, etc.
 - ii. *Agriculture* – knowledge of sustainable farming practices, composting, knowledge and skills to identify local herbs and plants of value, wine making, conversion of bio-mass to power, agro-processing, etc.
 - iii. *Regional arts and crafts* - bamboo work, wood work, jewelry, art, etc.
 - iv. *General technical skills* – mechanical, electrical and civil technicians, which would be required for a major hydro project or roads program.
- b) **Higher education for agro-forestry.** At a more strategic level, the Government could consider supporting the establishment of a Far Western University for Agriculture and Forestry (or department in an existing institution) with a focus on developing/ evolving and promoting sustainable agriculture and forest management practices for the region, including:
- i. Organic farming practices and commercial forest management practices.
 - ii. Agro forestry, commercial forestry, NTFP [Non timber forest products] based commercial forestry.
 - iii. Urban agriculture and community forestry.
 - iv. Documenting the rich bio-diversity of the region and the traditional practices of the region, including potentially local health traditions.
 - v. A good location for such a University could be in or near Jaladi-Pipaladi because land is likely to be cheaper than in the bigger towns; it is centrally positioned between the two major towns of Dhangadhi and Bheemdatt; and is located in a rich agricultural belt and also conservation area/ community forests. Also, considering that a University would be self-sufficient, constraints in the town's infrastructure may not pose an immediate constraint. This could also provide the much needed growth trigger for Jaladi-Pipaladi municipality.

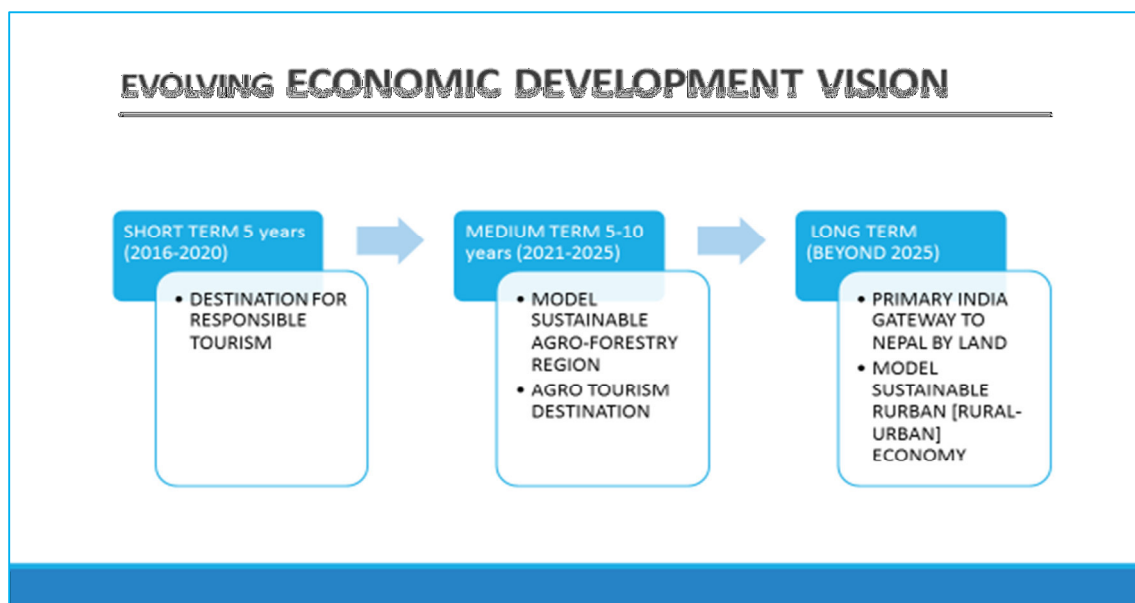
3 Proposed Economic Development Vision for the Far Western Region

3.1 Evolving the vision

27. Considering the pace at which the world economy is redefined, it is difficult to plan for a multi-decade horizon. Hence, emphasis in this vision is given primarily to developing a framework for the next 5-10 years. The vision is grounded in today's realities, while still being aspirational. The longer term themes are understandably more ambitious but they emerge coherently from the near and mid-term vision. In suggesting this evolving Economic Development vision, the following four points have been considered:

- a) advantages and assets of this region;
- b) the government's national and regional perspectives, including as articulated in the MOUD's National Urban Development Strategy (NUDS);
- c) modern global economic thinking founded on sustainability principles, that also emphasises 'localisation', revival of the primary sector, a greater and more sincere emphasis on valuing culture and tradition, etc.; and
- d) various viewpoints that emerged from local stakeholders in the consultative workshops as well as subsequent meetings at the central level.

28. In the future world, it is increasingly conceivable that a country or a region does not have to follow the path of a predominantly manufacturing or an industrial economy to reach high levels of human development. The FWR has an opportunity to demonstrate how a predominantly agricultural and services economy can thrive and create well-being for its citizens and deliver a more robust and sustainable economic future for its forthcoming generations.



29. The manufacturing sector would surely exist, not in an artificially imposed sense as is seen in many parts of the developing world, but in a more natural sense, building on the linkages with the agricultural and services sectors of the economy. This kind of secondary sector is not built on tenets of cheap labor or scale or resource exploitation, but on the basis

of special products and techniques that are unique to this region and add value to raw products; and on the basis of local innovation and entrepreneurship.

30. In the near term, two sectors naturally present themselves as focus areas for economic development of the region:

- a) Tourism sector
- b) Agriculture and forestry related sectors – e.g. agro-forestry, commercial forestry, agro-processing, etc.

31. Both sectors will have to be supported by a strong infrastructure sector investment program including power, roads, and municipal infrastructure, which would also contribute to additional economic activity in their own right. IUDP2's investments in municipal infrastructure in the first phase lay the foundation for greater transformation, along with other required investments and initiatives.

3.2 Elements of the tourism sector strategy for FWR

3.2.1 Tourism assets

32. The relative advantage of the FWR region in Nepal with respect to other regions in Nepal or the border states of India is that it is still unexplored virgin territory. It is not over-crowded and it is relatively more affordable. It also offers the unique Tharu culture that is characteristic of the Western Terai.

33. Information on the region's tourism assets listed below is easily accessible from the publications of the FWR's Tourism Development Society (TDS):

- a) Shuklaphanta Wildlife Reserve
- b) Khaptad National Park
- c) Tikapur Medicinal Garden and Tikapur Banana Restaurant
- d) Bardia National Park
- e) Ghodaghodi Lake and Jokhar Lake
- f) Surmasarowar Lake
- g) Mount Api
- h) Many temples such as Baidyanath temple, Tripurasundari temple, Nigalasaini temple, etc

3.2.2 Promoting responsible tourism

34. TDS has been a very successful private initiative [subsequently supported by bilateral aid agency GIZ] that has succeeded in raising awareness of the region's attractions. TDS has produced wonderful documentation, maps, posters, literature, and installed over 78 informational sign boards. Prior to their efforts, even this basic information was not easily available. They are presently continuing their efforts to create awareness and build capacity and partnerships in the tourism sector.

35. The TDS has adopted the theme of 'RESPONSIBLE TOURISM' to characterize the forward-looking strategy for further development of the tourism sector in the region. It is proposed that the FWR and its districts loudly and explicitly embrace the theme 'DESTINATION FOR RESPONSIBLE TOURISM'.

36. The next step is however more challenging – to give true meaning, shape and form to this term ‘Responsible Tourism’. The TDS have developed a list of guidelines for responsible tourism that is commendable (see **Annex 1A-A**). However, significant training and hand-holding, which the TDS intends to provide, will be required for the local community to understand and adopt the guidelines. It is suggested that all districts and municipalities of the FWR recognize the efforts of the TDS and support its growth.

3.2.3 Strategies and actions to promote tourism

37. Important strategies and actions to support the growth of the tourism sector are listed below.

- a) Setting up of a major Tourism Information Centre and Amenities Complex in Dhangadhi and Bheemdatt and perhaps smaller satellite offices in the future in Attariya and Jhalari Pippaladi. These could be located either in the town or near bus terminals or major road junctions. A typical amenities complex could have an area of about 500 sq.m. with some parking space. It could have:
 - i. A tourist information centre / desk with staff (e.g. from TDS)
 - ii. Public toilet facilities
 - iii. Some retail shops for daily needs and travel
 - iv. A small restaurant
 - v. A handicraft and tourism products sales corner
 - vi. Small spaces for tourist and travel operators
 - vii. Sufficient outside parking
- b) **Tourism development in the municipalities.** A tourist reaching Dhangadhi or Bheemdatt and spending a night or a day should have sufficient things to do and see in the town and consider this stay to be a part of a larger tour. To enable this, a town like Dhangadhi should do the following:
 - i. Beautify its streets and main avenues by planting trees and providing appropriate pedestrian spaces with street furniture. Keeping the streets neat and clean through good SWM practices and creation of eco-friendly sustainable drainage systems [SuDS³] are also important in this context.
 - ii. Improve access to all its internal tourist destinations – temples, parks, Jokhar Lake, Mohana river bird watching spot, etc. It should also develop a map and brochure showing all recommended attractions and places to visit.
 - iii. It should encourage entrepreneurs to start specialty restaurants that serve traditional Nepali and ethnic food to expose tourists to the food culture of Nepal, and especially FWR.
 - iv. It should showcase the Tharu tribal villages around Dhangadhi and popularize homestays [e.g. Badha village] around Dhangadhi.

³ Also known as ‘Green Infrastructure’ (GI). The use of GI can reduce the risk of flooding; it can reduce climate change emissions by reducing the need for wastewater pumping; evapotranspiration of GI components counteract the ‘heat island’ effect of cities which improves the quality of life, reduces stress and reduces the need and cost of air-conditioning.

- v. Showcase the community forestry initiatives by planning a guided walk or a trek in some of the more bio-diverse forests e.g., Taranagar Jungle or the deer conservation area of Jhalari-Pipaladi supported by WWF and others.
- c) Sale of Nepali products that are of interest to a tourist:
- i. Bijay Sal wooden water cups [for their medicinal value]
 - ii. Lapsi products of various kinds – dry, semi-dry, pickled, etc.
 - iii. Hinwa wine
 - iv. Banana wine and rice wine
 - v. Rudraksh products
 - vi. Pashmina shawls
 - vii. Kukri rum
 - viii. Special herbs and herbal products
 - ix. Aromatic products, etc.
- d) Collaborative and partnership efforts with India for promotion of tourism have already been highlighted. In this context the private efforts of TDS with Uttarakhand Tourism Board are commendable – talks are underway for developing a collaborative approach to promoting tourism in both the regions.
- e) The need for access and public transport systems has already been highlighted.

3.3 Elements of the agriculture and forestry sector strategy

38. The agricultural sector in the FW Terai region of Nepal has not delivered on its potential. The main reasons cited for the poorly developed agricultural sector revolve largely around India's comparative advantages:

- a) Subsidized fertilizers and plant protection costs in India
- b) Better irrigation in India
- c) Better crop insurance practices in India
- d) Reduced cost of transport in India
- e) Labor migration and lack of availability of labor in FW Terai

39. Unprofitable agriculture has resulted in many of the Terai farming communities to gradually give up farming and migrate within Nepal or to India for industrial / service sector job opportunities.

40. In reality, this is not just the story of Nepal. It is also the story in large parts of India too and much of the developing world. Part of the reason could be attributed to the regulation of food prices to ensure basic food security for all. This regulation surely affects farmers who are not adequately rewarded for their toil. The other reason is lack of education and sophistication in the farming community. Farmers are unable to take tactical or strategic decisions to maximize their profit. They meekly accept what the market is paying. This attitude is due to the strong caste system prevalent in rural areas whereby middlemen, landlords, politicians and the upper caste people, who control the markets and finances, have constantly exploited and suppressed the small and marginal farmers to contribute to

their own prosperity. Another reason may also have to do with irrational adoption of fertilizers and pesticides for intensive farming that has affected soil fertility over generations. The story is similar with respect to ground water exploitation. The reasons described above have made conventional, commercial agricultural farming a not so viable occupation. However, the world needs more and more food.

41. The answer to promoting agriculture in the Far Western Terai possibly lies in more sustainable agricultural practices. In some senses this may mean a return to age-old practices, but in a more practical sense, it means a very intelligent combination of traditional methods and modern know-how technologies to achieve the ideal balance. It is about taking a systems approach to farming. Multi-cropping, permaculture systems, urban agriculture, agro-forestry, agro-ecology, etc. are terminologies and concepts that are beginning to gain ground in the realm of sustainable agricultural practices.

42. The FWR has the opportunity to embrace some of these sustainable agricultural practices/ principles and create a more viable model for future generations. However, this cannot happen without government support or some form of mentoring. Local farmers do not have the awareness, means or enterprise to develop these approaches on their own. Without concerted support, local farmers are more likely to move away from farming and look for other occupations with possibly higher returns.

43. An institutional solution is therefore needed to address this paradigm shift to promote sustainable agriculture practices, and with acceptance that this transition is neither guaranteed nor is it something that would happen in the near term. At best, it would take 7 to 10 years for this shift to gather any kind of visible momentum.

44. One must also acknowledge that this would initially start as pilot initiatives and scale up only over longer periods of time, if found to deliver desirable economic outcomes. So, in the interim and to benefit a large portion of conventional agricultural farmers, certain actions are required to support the growth and development of the agriculture sector:

- a) **Creating market linkages to farmers.** Besides physical infrastructure such as roads, market structures, cold storage, etc., an effort to consolidate the sales and marketing efforts of the farming community to reach distant markets and export markets are needed. Government could do this by setting up an agricultural products market and export development agencies. Co-operatives would be another model. A third possibility is for large and progressive farmers, businessmen and NGOs of this region to come together and set up an Agricultural Development Society (ADS) like the TDS. Such a society would work to advance and strengthen the farming community. If well constituted it could attract donor funding for carrying out its work.
- b) **Providing capital support** either in the form of agricultural credit, crop insurance, leasing of farm equipment, etc.
- c) **Providing quality agricultural inputs** in a consistent manner
- d) Playing to **Nepal's comparative advantages** – focusing on crops for which the hills and plains of Nepal offer the best conditions:
 - i. Vegetables such as potato, cabbage, cauliflower, tomato, capsicum – these can be grown when it is off-season in India; vegetables from river bed farming, i.e. bottle gourd, bitter melon, bhindi, cucumber, etc.
 - ii. Cereals such as buckwheat, millet and barley.

- iii. NTFP products [Non timber forest products] – 71 species of NTFP products are found in the region with an estimated 1.6 million kg of annual production.
- iv. Fruits such as banana, apple, orange, the Nepali hog plum, wild berries that go into making the hinwa wine, amla, etc.
- v. Forest wood and timber products such as Bijay Sal which also have medicinal properties.
- vi. High value medicinal plants such as wild asparagus and rauwolfia serpentina [sarpagandha], and various other kinds of herbs used in traditional medicine.
- vii. Aromatic plants such as mentha, camamyle, cinnamon, etc.
- viii. Other forest products such as natural honey.

45. For promoting the **new-age sustainable agricultural practices** such as agro-forestry, the following approach and actions may be considered:

- a) Nepal has had a history of *leasehold forestry* and there are successful examples, e.g. Palpa in the western mid-hill region.
- b) The FWR has a successful history of *community forestry*, including in Bheemdatt, Dhangadhi, and Jhalari Pipaladi.
- c) Ideas for promoting agro-forestry and agro-ecology are consistent with the above mentioned similar initiatives. The aim is to create a forest eco-system that is typically more robust and cost effective due to the inherent presence/ availability of eco system services. Combined with livestock farming, dairy and human settlements in proximity, the approach aims to create closed loop food chains and symbiotic relations between different entities. For example, the trees provide valuable mulch that preserves the soil texture and microbial life on the surface. It also helps retain moisture and reduces evapo-transpiration losses. Then there are interesting food chains that operate in the insect world that dramatically reduce pest infestation.
- d) From a human settlements perspective, there is opportunity to convert food waste to compost and sewage sludge to manure and put it back in the soil. The weeds and grasslands are useful fodder for cattle. All this makes the whole farming process more robust, less labor intensive [offering more time for other gainful occupations] and low cost. One challenge is that the farmer has to learn to handle a diverse range of outputs coming from the crops, shrubs, trees, etc. This is not an insurmountable problem, but requires experimentation and innovative solutions.
- e) Sustainable agriculture sounds fine in theory, but its commercial and economic justification still has to be established in practice. And, by definition, it is likely to be context specific and hence Nepal/ FWR will have to create its own innovative models. At its simplest level, it can start with the practice of organic farming – however, this will still require support in the form of knowhow and certification. Such support can come from a structure such as the proposed 'ADS' (see para. 44).
- f) It requires risk taking, passionate, intelligent and well to do farmers to take some bold steps. One example worth mentioning, though not in the urban agro-forestry realm, is Mr. Gopal Hamal's Banana Farm in Tikapur (Kailali District). It is a great example of how with some innovation banana cultivation is used as a commercially profitable

proposition. The Banana restaurant serves various kinds of banana products, including a type of wine from fermented bananas. Experienced entrepreneurs such as Gopal Hamal could be the founding members of a potential ADS for the FWR of Nepal. Pilots established by ADS would provide experiential learning opportunities for the average farmer on various forms of sustainable agriculture.

3.4 From tourism and agriculture to 'agro tourism'

3.4.1 A natural relationship

46. There is a natural relationship between agriculture, forestry and tourism, and they come together in the concept of Agro Tourism. A large segment of the tourism market is comprised of nature tourism and village tourism – a desire of the urban dweller to experience the wild, unspoiled nature, and rural living. Agro Tourism caters to this craving while offering more secure and better experiential opportunities. It would allow urban dwellers to get a real taste of rural life by living the life, e.g. in home-stays and actually engaging in farming, livestock, dairy and such other farm activities; in addition to observing rural life from close quarters. The mutual reinforcement of these two sectors – agriculture and tourism - holds great promise for the FWR if it can visualize and exploit the synergies.

3.4.2 Important Opportunistic Themes

47. **Lake Manas Sarovar.** The proximity to Lake Manas Sarovar in Tibet, an important pilgrimage site, could be capitalized on to the benefit of the FWR. Further exploration would be required to find out if it is feasible to create a new, shorter route from the mountains of the north-western tip of the FWR into the Manas Sarovar plateau. If this is indeed possible and if security and the habitat allow, then this access to Manas Sarovar has the potential to become the Mount Everest of the West for the FWR, in terms of its enormous tourism potential.

48. **Bottled mineral water.** The multiple rivers in the region and the glaciers may offer opportunities for bottling and selling genuine, healthy, spring / river water, to India and other neighboring countries.

49. **Yarsha Gumbha.** Often referred to as the 'Himalayan Viagra', this caterpillar fungus infects the larvae of ghost moths and produces a fruiting body that is valued as an herbal remedy. It is one of the most expensive aphrodisiacs on the market, but its extraction is presently regulated due to periods of over extraction.

50. **Commercial fisheries.** The FWR has 133 naturally occurring lakes and 1,011 ha. of wetlands. These lakes are spread across VDCs, forests, municipalities, institutions and some private lands. Just like community forestry, there is an opportunity to permit the usage of some of these lakes and ponds for commercial fish cultivation. The sector will also require a sophisticated fish market with cold storage facilities and cold chain transportation for it to grow and thrive.

4 Informing the Urban Development Vision

4.1 Planning and urban infrastructure creation process

51. An economic vision and strategy that is primarily founded on sustainability principles and on sectors such as Tourism, Agriculture, Forestry, Agro tourism, and the like has certain implications for the urban development process and land management. These are explained in the subsections below.

4.1.1 Implications for land use planning

52. The aim should be to conserve agricultural spaces in the urban areas and its peripheries. The town is therefore likely to take on an increasingly scattered and spread-out character as you move from the center, with a dense town centre, and a green and scattered periphery that merges seamlessly with the rural without a clear boundary. The town centre would be a place for commercial activity, accessing public services, attending celebrations and get-togethers, and for tourists. As one moves away from the town centre, the urban settlement would increasingly become greener and spread out.

53. This urban vision does not mean that every house is vastly separated from the other and that land holdings are extremely large, but it could allow for clustering of homes in a given area, which is then separated by an agricultural patch or an urban forest patch or a natural feature like a lake or a park. In the Indian sub-continent, it could be likened to the state of Kerala and Goa, both of which incidentally have a strong tourism base.

4.1.2 Corridor development

54. When such a town grows to the scale of say three times Dhangadhi's current population, i.e. over 0.5 million people, then such forms of land-use would lead to a corridor type development. This corridor development might stretch over long distances; usually along transportation routes. So, to enable such growth, investments in greater urban hinterland connectivity are crucial, as well as the provision of an effective and high-quality public transport service.

55. However, if such regional development is not proactively and well-managed, it could lead to a ribbon type development along the corridor that does not ensure the best use of the lands in the inner areas and may also restrict access to the interior. Therefore, settlements along the corridor should be carefully planned. Land pooling could be a useful tool and methodology to approach this challenge.

4.1.3 Centralized systems

56. The implications for urban infrastructure are that different systems and levels of service may have to be adopted for areas with high, medium and low densities. Centralized systems may be needed in the town centre and the older parts of the city, but the mid areas and the peripheries of the city will require 'decentralized' infrastructure at various scales and capacities – from household scale to small communities to large communities.

57. Utilities like power, water supply and wastewater management may have to be planned as decentralized onsite systems, e.g. DEWATS. Drainage for roads will have to be planned as sustainable drainage systems [SuDS] that are likely to be less expensive and capable of handling treated waste water overflows. Bio-gas based power production is already a successful program in rural Nepal and this can continue. Even the segregation

and processing of solid waste will have to be decentralized except for hazardous and reject waste which can be handled at a common landfill site for the urban conurbation

4.1.4 Tourism facilities

58. Tourist friendly infrastructure will have to be provided across the corridor and more particularly in tourist spots – e.g. public places to rest, toilet facilities, and signage. Home-stays would be an important component of the strategy.

4.1.5 Eco-friendly development regulations

59. Going one step further, there could be by-laws defining minimum size of a land parcel so as to allow for sufficient front yard and backyard spaces for ecosystem services and green patches. Ornamental blocks could be made mandatory even in the town centers. Bicycle tracks and walking tracks may also have to be planned. As one of the officers who were interviewed mentioned, the FWR could pioneer the idea of a *farmer friendly city*.

60. As pointed out already, market buildings and a tourist information/ amenity centres could be seen as part of the urban infrastructure package that can produce substantial economic impacts for the region.

4.2 Functional Roles

61. The whole of Bheemdatt-Jhalari-Pipaladi-Attariya-Dhangadhi can develop as an urban corridor with the above mentioned shared characteristics, namely espousing a sustainable urbanization and growth trajectory. However, each town could still have its own identity and functional role to play in the region's development:

- a) **Attariya** – *Logistical HQ* for the sub-region at the intersection of EW-NS highways and housing the airport in its southern border with Dhangadhi; could house major transport terminals, SEZ, wholesale market for the hill products, industrial parks, etc.
- b) **Bheemdatt** – *Commercial centre* for the region, Gateway to India – The majority of people and goods traffic from India into the FWR passes through Bheemdatt.
- c) **Dhangadhi** – *Potential administration centre* for the region and *tourism hub*- town with all the HQ for the two districts located there. Also serving as the tourist entry point, due to the airport located on the border with Attariya. Hence, good quality hospitality infrastructure including tourist amenities should be developed here as a priority. Further, Dhangadhi also holds good potential for the development of sports, especially cricket.
- d) **Jalari-Pipaladi** – Agricultural centre and University town – Quiet town with many innovations in agriculture; pilot experimentation with Agro forestry & other forms of commercial & sustainable agriculture/ forestry.

**More elaborate conceptual plans, with maps, are provided in
DN#1 Part B: Regional Planning and Urban Development**

ANNEX 1A-A

Tourist Development Society (TDS) Guidelines

Discussion Note # 1

Economic and Urban Development Vision for Far Western Terai Region

Part B : Regional Planning and Urban Development

Discussion Note # 1

Economic and Urban Development Vision for Far Western Terai Region

Part B : Regional Planning and Urban Development

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1 Contextual Background

1.1 Introduction

1. The aim of this report is to highlight the existing urban situation in terms of population, population density, human development indicators with a focus on the far west Terai region and to develop the urban development vision for the region. This report is divided into four sections. The first section provides a brief description of the urban areas in Nepal with the inclusion of newly declared municipalities. The second section deals with the urbanization in far western Nepal. The third section discusses the urban growth scenario in the project municipalities and the fourth section provides the conceptual outline of the vision, including some specific strategies. This vision along with Part A, the economic development vision, provides the overall Regional Economic and Urban Development Vision for Far Western Terai. Milestones and indicators will be developed to complement the Vision. Other demographic and socio-economic information related to the project municipalities is provided in **Discussion Note #2 - Socio-Economic and Gender Analysis**.

2. The regional development concept was established many decades ago with the formation of five development regions, each with three ecological zones. North-South road corridors were developed in each region to link the hills and mountains to the plains of Terai. Resettlement programs at various locations of Terai, including the Far West, for the poor and marginalized groups of the hills. Migration from the hills to Terai was rapid after eradication of malaria and initiation of the construction of east west highway. As a result various market canters and small towns were developed in the Terai; many of which eventually turned into municipalities. However, most of the municipalities have grown organically without adequate planning and development control. The role of local bodies has been confined to the management of the cities in whatever way they grew.

1.2 Urbanization Trends in Nepal

3. Though one of the least urbanized countries, Nepal has experienced a swift trend of urbanization in the past several years. Until May 2014, the total number of designated urban areas (municipalities, sub-metropolitan and metropolitan city) in Nepal was 58. These had a population of 4.4 million out of the national total of 26.5 million, equivalent to 17% of the national population. In May 2014, the government declared 72 additional municipalities bringing the total number of urban authorities to 133. In December 2014, a further 61 municipalities were added; making total 191. It has also upgraded existing seven municipalities¹ to sub-metropolitan cities with the addition of adjoining VDCs and increased the boundaries of seventeen² other municipalities. The population in the urban authorities, including added 133 municipalities and increased area of existing municipalities, is now 16.4 million; that is 38% of the total population of the country. The distribution of urban and rural population in the development and ecological regions is provided in **Annex 1B-A**.

4. Accordingly, the central development region has about 47% of the people living in municipalities and the western development region has about 25%. Hill and Terai ecological region have almost same size of population living in the municipalities with about 39% and 40% respectively. Similarly, central hill eco-development region has about 63%.

¹ Bharatpur, Butwal, Dharan, Hetauda, Itahari, Janakpur and Nepalgunj

² Bhadrapur, Birendranagar, Birgunj, Byas, Dhankuta, Jaleswor, Kalaiya, Kapibastu, Lahan, Lalitpur, Lekhnath, Malangwa, Pokhara, Prithvinarayan, Ratnanagar, Siraha and Tribuwan Nagar

5. While designating new municipalities, it appears that the density considerations suggested by National Urban Policy 2007 were disregarded as most of these municipalities do not satisfy the minimum density requirement of 10 persons per ha. As a result, only 20% of the population could be termed as living in an urban area according to this criteria; as against 38%. The density based urban and rural population in the development and ecological regions is given in **Annex 1-B**.

6. **Table 1-1** gives the percentage of population, area and urban population (≥ 10 ppha) in different development and ecological regions.

Table 1-1: Area and Population in Development and Ecological Regions

	Popu lation	Area in Sq.km	Population		Area		Population ≥ 10 ppha	
			Urban	Rural	Urban	Rural	Urban	Rural
Eastern	21.9%	19.3%	34%	66%	15%	85%	16%	84%
Central	36.4%	18.6%	47%	53%	19%	81%	33%	67%
Western	18.6%	20.0%	36%	64%	12%	88%	16%	84%
Mid Western	13.4%	28.8%	25%	75%	5%	95%	4%	96%
Far Western	9.6%	13.3%	34%	66%	15%	85%	14%	86%
Mountain	6.7%	35.2%	14%	86%	3%	97%	1%	99%
Hill	43.0%	41.7%	39%	61%	11%	89%	28%	72%
Terai	50.3%	23.1%	40%	60%	29%	71%	17%	83%
Eastern Hill	6.0%	7.3%	21%	79%	14%	86%	7%	93%
Eastern Mountain	1.5%	7.1%	24%	76%	6%	94%	0%	100%
Eastern Terai	14.4%	4.9%	40%	60%	30%	70%	22%	78%
Central Hill	16.7%	8.0%	63%	37%	15%	85%	56%	44%
Central Mountain	2.0%	4.3%	16%	84%	5%	95%	0%	100%
Central Terai	17.8%	6.3%	36%	64%	34%	66%	14%	86%
Western Hill	10.6%	12.4%	31%	69%	9%	91%	17%	83%
Western Mountain	0.1%	4.0%	0%	100%	0%	100%	0%	100%
Western Terai	7.9%	3.6%	43%	57%	34%	66%	16%	84%
Mid Western Hill	6.4%	9.3%	15%	85%	6%	94%	5%	95%
Mid Western Mountain	1.5%	14.5%	5%	95%	0%	100%	0%	100%
Mid Western Terai	5.6%	5.0%	41%	59%	18%	82%	4%	96%
Far Western Hill	3.3%	4.6%	18%	82%	15%	85%	0%	100%
Far Western Mountain	1.7%	5.4%	13%	87%	7%	93%	4%	96%
Far Western Terai	4.6%	3.3%	53%	47%	28%	72%	26%	74%

Source : CBS 1996, 2003 and 2014 as quoted in Population Monograph, Vol 3, CBS, 2014 and MoFALD

7. Urbanization in Nepal is typically characterized by the migration of people from rural areas to market centres, towns and cities primarily in search of employment opportunities. In the process, three mutually reinforcing transitions in the form of demographic, spatial and economic have been observed in the country³.

8. The recent municipal designation by transferring predominantly rural areas into the municipalities without urban planning rationality defies the concept of city development;

³ Nepal Urban Development Strategy (NUDS), MoUD, 2014

rather it seems to have emerged politically in the absence of legislative provision of sub-city or sub-municipality.

9. However, the growth in urban population in the inter-censal decade has been very high. Though growth in the last decade (i.e. 2001-2011) was 3.43%, the average annual growth between 1981 and 2011 has remained at 5.3% (NUDS, 2014). Because there has been an increase in the number of municipalities over this period and the people living in urban areas have increased significantly, the growth rate in each census year is not comparable.

10. However, during the period 1961 to 1971 and 2001 to 2011, the number of municipalities remained unchanged and hence the actual growth in the same municipalities region could be measured. The number of municipalities and the population over last five decades are shown in **Table 1-2**:

Table 1-2: Municipalities and Urban Population

Census Year	No. of Municipalities	Population			Growth of Urban Population	% Urban Population
		Urban	Rural	Total		
1961	16	336,222	9,076,774	9,412,996		3.6%
1971	16	461,938	11,094,045	11,555,983	3.2%	4.0%
1981	23	956,721	14,066,118	15,022,839	7.6%	6.4%
1991	33	1,695,719	1,675,378	3,371,097	5.9%	50.3%
2001	58	3,227,879	19,923,544	23,151,423	6.6%	13.9%
2011	58	4,406,045	22,088,459	26,494,504	3.2%	16.6%
2014*	191	10,034,577	16,459,927	26,494,504	8.6%	37.9%

* Note : The government declared 72 new municipalities in May 2014 and additional 61 in December 2014. It refers to the population of the VDCs in 2011 that were later declared as municipalities. The population in 2014 hence includes the population of i) added areas of the existing municipalities including upgradation to sub-metropolitan cities and ii) additional municipalities.

Source : CBS 1996, 2003 and 2014 as quoted in Population Monograph, Vol 3, CBS, 2014

11. As apparent from Table 1-2 during the period 2001 to 2011 the growth of urban population was observed to be 3.2% and the same rate was seen during 1961 to 1971. In the progress from 16 to 58 municipalities till early May 2014, the urban population has increased 13.10 times. After the inclusion of additional 133 municipalities, the growth of urban population has reached to 29.85 times as compared to the urban population in 1961. The share of this population in total is now about 38%.

12. Three types of urban centers (i.e. municipality, sub metropolitan and metropolitan city) exist in the country. About 73% of the population lives in the municipalities of which about 41% live in small municipalities with a population of less than 50,000. Kathmandu, the only metropolitan city, has about 1 million population. But the population reaches to close to 2.4 million if all the contiguous municipalities in the Kathmandu valley are considered. **Table 1-3** gives the number and types of cities, their area, population and density based on the population size; further details are given in **Annex 1B-C to 1B-E**.

Table 1-3: Types of Municipalities, Population and Density

	Nos	Population	Total Area (Ha)	Buildable Area (Ha)	Net Density (ppha)
Metropolitan City	1	975,453	4,945	4,767	205
Sub Metropolitan City	10	1,772,360	162,846	117,956	15
Municipality	180	7,286,764	1,658,403	883,639	8
Total		10,034,577	1,826,194	1,006,362	10

Table 1-4: Population size and Urban Canters

	Urban Centres	Population	%	Area	%
More than or equal to 300,000	2	1,289,294	13%	36,962	2%
200,000 to 299,000	2	455,433	5%	9,333	1%
100,000 to 199,999	12	1,620,049	16%	170,298	9%
50,000 to 99,999	38	2,597,763	26%	411,517	23%
Less than 50,000	137	4,072,038	41%	1,198,085	66%
Total	191	10,034,577	100%	1,826,194	100%

2 Urbanization in Far Western Terai Region

2.1 Project Municipalities and Connectivity

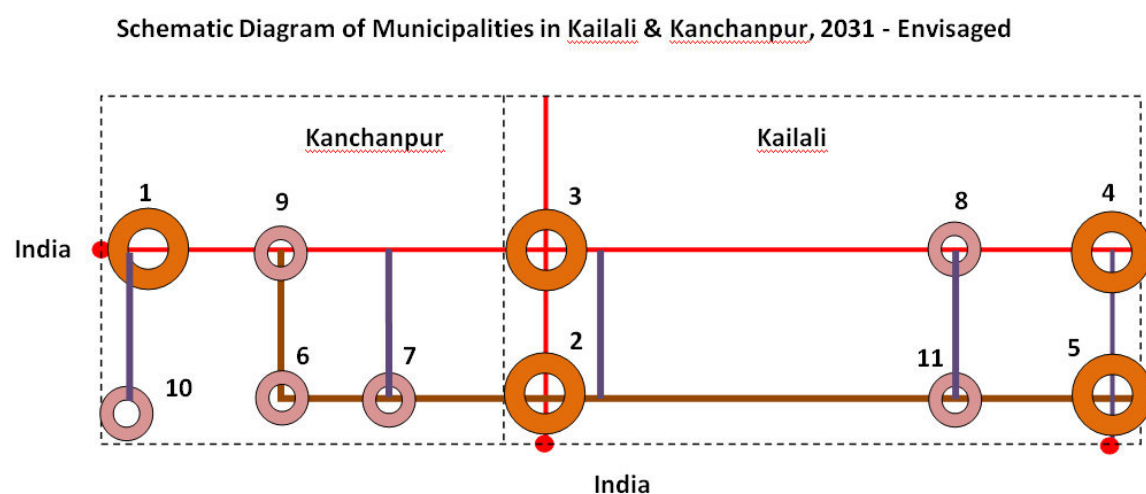
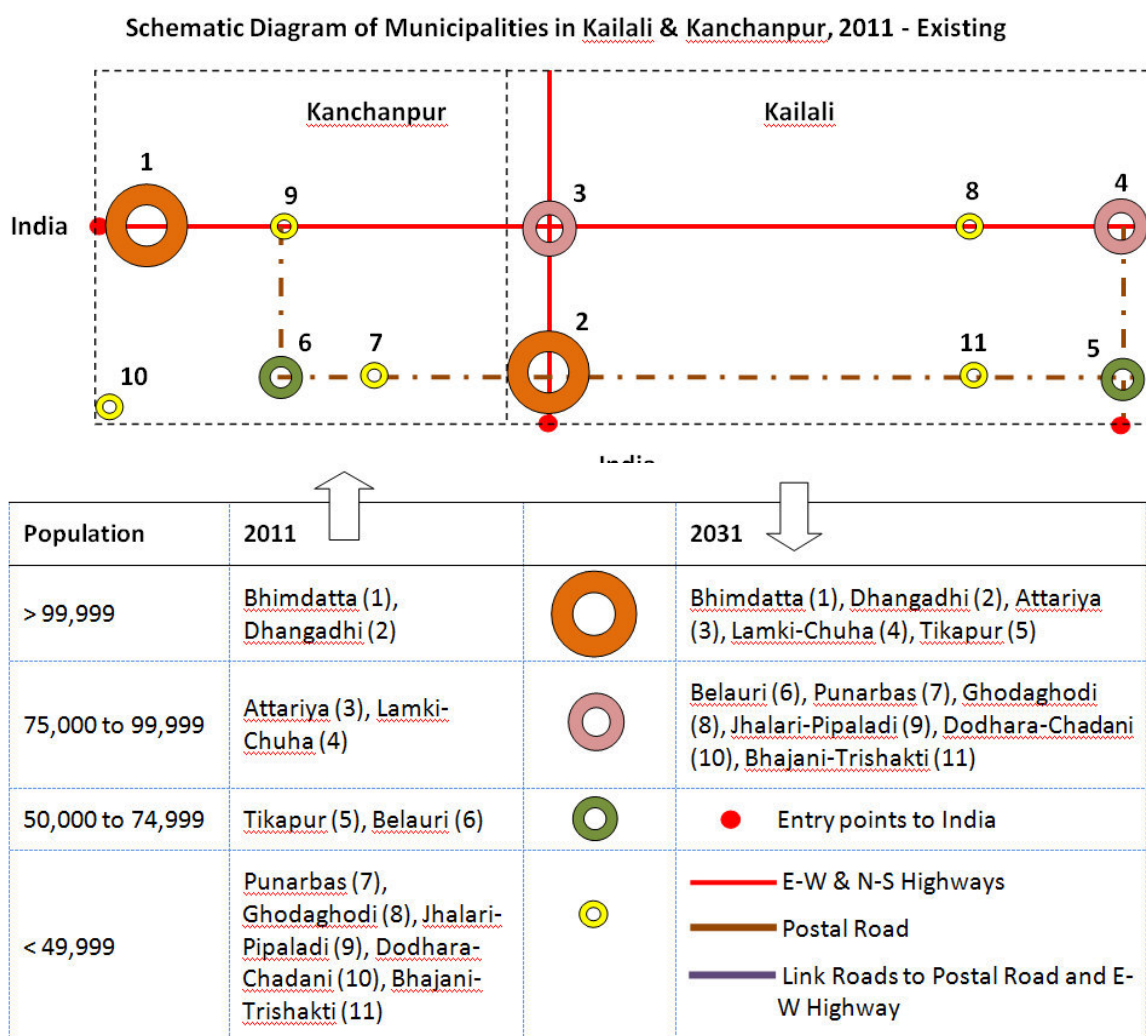
13. Of total 191, the number of municipalities in Far Western Region is 21; 15 of which have been recently declared. Among which, only Bheemdatt and Dhangadhi have populations a little over 100,000. Four other municipalities namely Attariya, Lamki-Chuha, Tikapur and Belauri, have populations ranging between 50,000 to 75,000. All the rest have populations of less than 50,000; nine of which even have a population of less than 25,000. Unlike the western and central regions with Pokhara and Kathmandu, there is an absence of urban primacy in the FW region. The total population in the FW region municipalities in 2011 was 873,071. Interestingly 75% of the population was concentrated in eleven municipalities of the two districts of Kailali and Kanchanpur.

14. There are three major roads that contribute to the development of urban centres in far west Terai. These are the east-west highway, north south highway and the postal road on the south near the border with India. All of these urban centres are connected to one of these roads. The north south road is particularly important for its connectivity to the seven districts in the hill and mountain region. To a large extent this has contributed to the growth of Attariya. The postal road, which is currently going through major improvement, is likely to influence the growth of other towns like Tikapur, Trishakti-Bajani, Punarwas and Belauri, Chandani-Dodhara. The latter is the only municipality in the region which is isolated from the district in the absence of easily accessible motorable bridge. **Figure 2-1** shows the location of the municipalities in the far western region and their major connectivity.

15. **Figure 2-2** schematic diagrams show the current size of the municipality in terms of population and their envisaged growth by 2031; with the presumption of a fully operational postal road and a few links roads connecting to the East-West highway from the north.

Figure 2-1: Location of Project Municipalities



Figure 2-2: Existing and Envisaged Populations

2.2 Regional Growth Pattern in Far Western Terai

16. Far western region only became accessible to eastern parts of the country two decades ago after the completion of the bridge over the Karnali River followed by 22 bridges to the west of it. This ceased the dependency on Indian routes to reach the region from the rest of Nepal. As a result, there was very rapid population growth due to migration of people from the hills and other parts of the country. Through this process, areas near highways and junctions started to grow as market centres. This can be clearly observed by the study of the last three census data. Among 11 municipalities in the region, Attariya and Ghodaghodi had the highest growth rate of 4.5%, followed by Dhangadhi with 4.2%. Except Bhajani, all municipalities in Kailali had growth over 4%. However, the growth in the municipalities in Kanchanpur was observed to be below 3%; presumably due to the lack of good and direct connectivity to India, to the hills and to the southern parts. **Table 2-1** briefly describes the growth situation of the region over the past 20 years; more elaborate statistics are given in **Annex 1B-F**.

Table 2-1: Summary of Population and Density in Kailali and Kanchanpur

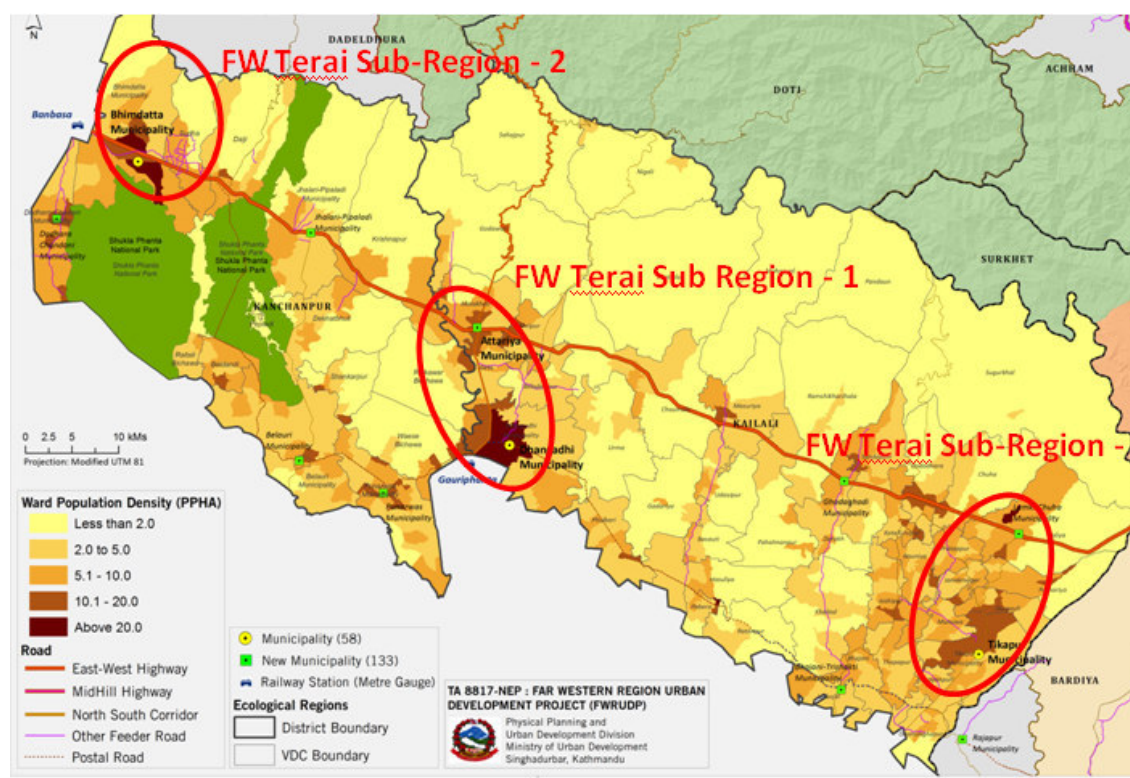
	Area (Ha)	Population			Growth			Density (Pop/ Ha)		
		1991	2001	2011	1991	2001	2011	1991	2001	2011
District	455,398	675,788	1,060,036	1,213,461	4.6%	1.4%	3.0%	1.48	2.33	2.66
Kailali	329,240	417,891	669,759	764,958	4.8%	1.3%	3.1%	1.27	2.03	2.32
Kanchanpur	126,158	257,897	390,277	448,503	4.2%	1.4%	2.8%	2.04	3.09	3.56
Municipalities	138,594	339,058	528,086	656,052	4.5%	2.2%	3.4%	2.45	3.81	4.73
Kailali	78,606	167,626	268,657	372,634	4.8%	3.3%	4.1%	2.13	3.42	4.74
Kanchanpur	59,989	171,432	259,429	283,418	4.2%	0.9%	2.5%	2.86	4.32	4.72
VDCs	316,803	336,730	531,950	557,409	4.7%	0.5%	2.6%	1.06	1.68	1.76
Kailali	250,635	250,265	401,102	392,324	4.8%	-0.2%	2.3%	1.00	1.60	1.57
Kanchanpur	66,169	86,465	130,848	165,085	4.2%	2.4%	3.3%	1.31	1.98	2.49

Source: CBS 2011, MoFALD 2014

17. Three sub-regions in the far western Terai have started to become prominent, namely Dhangadhi-Attariya corridor, Bheemdatt and adjoining VDCS (Sudha and Dorji) on the east and Tikapur-Lamki Chuha corridor, see **Figure 2-3**. The other two municipalities along east-west highways, i.e. Jhalari-Pipaladi and Ghodaghodi, are yet to develop their prominence and are expected to remain as small market centres in the years to come.

2.2.1 Migration Trend

18. Inter-regional migration in the Terai during last census decade (2001-2011) was observed at 1.6 million; which is 29% of the total population in Terai. Far western Terai region had attracted about 17% (281,272) of total migration to Terai and about 74% of the people migrated from the mountains and hills of far western region itself. It means that the tendency to move into the flat terrain from the high elevations of the same region is predominant, as indicated in **Table 2-2**.

Figure 2-3: Population Density Distribution in Kailali and Kanchanpur**Table 2-2: Migration in Terai Region**

	EDR	CDR	WDR	MWDR	FWDR	Total
Migration to Terai	489,933	295,958	334,576	213,316	281,272	1,615,055
Terai Total	3,818,119	4,707,517	2,095,640	1,470,472	1,226,957	13,318,705
% to Terai Population	13%	6%	16%	15%	23%	
<i>Population :</i>						
Mountain	98,314	15,531	2,523	11,602	52,620	180,590
Hill	357,242	233,380	300,010	181,152	201,800	1,273,584
Terai	21,891	34,428	25,347	16,558	22,393	120,617
Not Stated	12,486	12,619	6,696	4,004	4,459	40,264
<i>Percentage</i>						
Mountain	20%	5%	1%	5%	19%	11%
Hill	73%	79%	90%	85%	72%	79%
Terai	4%	12%	8%	8%	8%	7%
Not Stated	3%	4%	2%	2%	2%	2%
Total	100%	100%	100%	100%	100%	100%

Source : Population Monograph, 2014

2.2.2 Urban Primacy

19. Though Bheemdatt and Dhangadhi are the two largest towns among eleven municipalities in the far west Terai, both of them do not have primacy over the region; rather the level of primacy seems to have gone down over the inter-census decades. **Table 2-3** shows the level of primacy based on two city and four city indices.

20. The two city primacy index has been calculated by dividing the population of the two largest towns in the region and the four city index has been calculated dividing the largest population by the sum of population of 2nd, 3rd and 4th ranked towns.

Table 2-3: Urban Primacy

	1991	2001	2011
Two City Index	1.39	1.31	1.03
Four City Index	0.56	0.54	0.46
Percent of Urban Population in the Project Influence Area	74%	74%	74%

21. If the population of second largest town is much lower than the largest town, then the largest town holds primacy over the second largest or other subsequent towns. For example, the population of Kathmandu Municipality is much higher than that of Lalitpur; second highest town. However, a similar situation does not prevail in the Far Western Region. The descending nature of the indices indicates that the extent of primacy is gradually reducing over the period.

2.2.3 Human Development and Poverty Indicators

22. The Human Development Index, as mentioned in the Human Development Report (UNDP 2014), was developed based on the life expectancy, adult literacy, education and per capita income of 2011. According to which, the far western region has the least among all development regions and also way behind the national average of 0.490. The Central development region has the highest index with 0.510 followed by Western with 0.499 while Far Western HDI index is only 0.435 only; indicating high prevalence of poverty, lack of health facilities and education.

23. However, the HDI in the far western Terai region is relatively better than that of hills with a value of 0.466. **Table 2-4** shows the HDI values of Nepal, Kathmandu Valley, far western region and the districts in far west Terai.

Table 2-4: Human Development Index

	Life Expectancy	Adult Literacy	Mean Year of Schooling	Per Capita Income (PPP \$)	HDI
Nepal	68.80	59.57	3.90	1,160	0.490
Kathmandu Valley	69.13	82.52	6.83	2,434	0.622
Far Western Terai	66.70	60.39	3.75	940	0.466
Kailali	66.46	58.86	3.62	942	0.460
Kanchanpur	67.08	63.04	3.97	938	0.475

24. Similarly, the poverty indicators also substantiate the above findings. The HPI value of Nepal in 2011 was 31.11 while the same of far western development region is 34.8. Western development region has the improved poverty indicator among development regions with the value 27.2. **Table 2-5** gives the comparison of HPI values of the regions as specified above.

Table 2-5: Human Poverty Index

	% of people not expected to survive to age 40	Adult Illiteracy Rate	Percentage without safe water	Percentage of children under age five who are malnourished	Deprivation in economic provisioning	HPI
Nepal	7.52	40.43	17.09	40.50	28.80	31.12
Kathmandu Valley	4.30	17.48	28.77	28.50	28.64	21.28
Far Western Terai	8.82	39.61	9.08	31.50	18.29	28.43
Kailali	9.00	41.14	6.10	31.40	18.75	29.49
Kanchanpur	8.52	36.96	3.32	31.70	17.51	26.60

2.3 The Project Municipalities

25. The population in four project municipalities, i.e. Attariya, Bheemdatt, Dhangadhi and Jhalari Pipaladi, in 2011 was 321,116 which constitute 26% of the total population in Kailali and Kanchanpur. The growth during 1991 to 2001 in all municipalities ranged between 4.2% to 4.8%. However, varied growth rates were observed during 2001 to 2011. Attariya had the highest growth rate with 4.1% and Bheemdatt had the lowest with about 1.1%; Dhangadhi had the growth of 3.6% and Jhalari Pipaladi had about 2.5%. **Table 2-6** shows the distribution of population in these four municipalities over past three census decades.

Table 2-6: Population in Project Municipalities

Municipalities	Population			Growth Rate		
	1991	2001	2011	1991-2001	2001-2011	1991-2011
Attariya	30,282	48,533	72,521	4.8%	4.1%	4.5%
Bheemdatt	62,050	93,901	104,599	4.2%	1.1%	2.6%
Dhangadhi	44,753	71,726	101,970	4.8%	3.6%	4.2%
Jhalari Pipaladi	21,661	32,780	42,026	4.2%	2.5%	3.4%
TOTAL	158,746	246,940	321,116	4.5%	2.7%	3.6%

Source : CBS

2.3.1 Land Cover

26. Attariya Municipality has a very small market, just on the periphery of the junction of two highways and hence the built up area over the total area is only 7%. About 64% of the land is used for agriculture and about 29% of the land is forest.

27. Approximately 38% of Bheemdatt municipality is built-up. About 31% of land is agricultural and about 31% is covered by forest.

28. Dhangadhi has about 9% of the land used for residential or commercial purpose and has about 61% used for agriculture. The share of forest in Dhangadhi is 24%.

29. As compared to other towns Jhalari Pipaladi has relatively less agricultural land as it is mostly covered by forest and grassland (about 51%).

30. Accumulatively, these four municipalities have around 16% built-up area, 53% agricultural land and about 31% forest. Refer to **Table 2-7**.

Table 2-7: Land Cover in Project Municipalities

	Builtup	Cultivation	Forest	Water body	Barren/Sand	Others	Grand Total
Area in Sq Km							
Attariya Municipality	0.33	97.08	44.70	1.56	8.32	0.46	152.45
Bheemdatt Municipality	7.88	91.15	52.98	4.53	14.82	0.23	171.59
Dhangadhi Municipality	9.70	62.94	24.51	2.22	4.47	0.16	104.00
Jhalari Pipaladi Municipality	0.00	61.42	59.44	2.58	12.77	20.96	157.17
Grand Total	17.91	312.59	181.63	10.90	40.37	21.81	585.21
Percent							
Attariya Municipality	0%	64%	29%	1%	5%	0%	100%
Bheemdatt Municipality	5%	53%	31%	3%	9%	0%	100%
Dhangadhi Municipality	9%	61%	24%	2%	4%	0%	100%
Jhalari Pipaladi Municipality	0%	39%	38%	2%	8%	13%	100%
Grand Total	3%	53%	31%	2%	7%	4%	100%

Source: Landcover raster (resolution 30m)-ICIMOD Menris GIS data portal - Year 2010

2.3.2 Project Municipality Location

Attariya Municipality

31. Attariya municipality was declared in May 2014 by merging Beladevipur, Geta, Malakheti and Shreepur VDCs. People started to migrate in the last 20 years from the hills to this highway junction (east west and north south roads) town after the construction of the bridge over the Karnali River and other bridges on the east west highway. Two major rivers Godavari and Khutiya pass along the east and west boundary of the municipality. The south of the municipality adjoins Dhangadhi Municipality and the north of the municipality is bounded by forest. Attariya has the area of about 152 sq km spread over 13 wards. All wards have a density of less than 10 persons per ha. Except a few hundred meters in the vicinity of the highway junction, all other areas are predominantly rural.

Bheemdatt Municipality

32. Bheemdatt municipality, formerly known as Mahendranagar, is located at the western border of Nepal. The market of the municipality was planned some 40 years ago by the Town Development Committee. The municipality has the Mahakali River on the west, Suda VDC on the east, Jogbudha VDC of Dadelphura on the north and Shuklaphata National Wildlife Reserve on the south. The town basically serves as the market centre for the people of the hills. The total area of the municipality is about 172 sq.km and administratively divided into 19 wards. Except wards 1, 5, 6, 7 and 18, all other wards possess rural character. About 40% of the population is concentrated in the urban wards which constitutes about 13% of the total municipal area. The remaining 60% of the population are thinly spread over 87% of the area. Most parts of northern wards (9, 10 and 3) are covered by forest.

Dhangadhi Municipality

33. Established in 1977, Dhangadhi is the premier municipality in the Far Western Region. Being located on the close proximity to the border, Dhangadhi is recognized as the biggest market centre of the region for the trading of household goods, equipment and

agriculture products. Administratively, the municipality is divided into 14 wards covering an area of 104 sq.km, with the gross population density of about 10 persons per hectare. The market is elongated about 4km east-west; starting from the junction of the north-south highway popularly known as Chauraha. Except some areas of wards 1, 2, 3, 4 and 5, close to the main market road, the settlements are thinly spread all over the municipality with no particular concentration. Hasanpur, Baiya Behadim Santosi Tol, Basant Tol are few prominent urban clusters. The east of the municipality is bounded by khutia river and the west by Mohana River; south of the municipality is India whereas the north part of municipality adjoins Attariya municipality. The municipality has a number of lakes and wetlands, among which, Jakhori lake and Tilke lake are prominent, and quite a reasonable amount of forest within its territory.

Jhalari Pipaladi Municipality

34. Jhalari Pipaladi municipality is the youngest among four and lies after about 20km west of Attariya on route to Bheemdatt. The municipality was declared in December 2014 by merging two VDCs Jhalari and Pipaladi. The municipality is bounded by forest all round creating a natural buffer, except a narrow strip of agricultural land leading south. It does not at present have any significant market centre and the settlements are dispersed north and south of the E-W highway. The only paved road is the highway which passes through the middle of the municipality. A 132 KVA transmission line passes along the south side of the highway. Several track roads have been opened; without any planning thoughts or engineering considerations.

2.3.3 Topography and Climate

35. The topography of all municipalities is generally fairly flat, with an average elevation of 109m above msl in Dhangadhi and about 200m in Jhalari-Pipaladi and Attariya. Bheemdatt has some varied topography ranging 200m on the south to 1,000m on the north.

36. The average minimum temperature ranges between 7°C to 15°C during Dec-Jan and the maximum temperature reaches up to 43°C during May-June. The region has an annual average maximum rainfall of about 1,550mm.

2.3.4 Distribution of Urban Rural Population

37. Based on the ward level population density of 10 persons per ha, only 9% of the area in the project municipalities is urban where about 35% of the population live. Both the new municipalities; Attariya and Jhalari Pipaladi presently lack any urban character as all the wards have less than the necessary density. In Dhangadhi half of the wards out of 14 have urban character and in Bheemdatt only 5 out of 19 wards exceed the minimum required density. **Table 2-8** shows the summary of ward level population and density. Further detail is provided in **Annex 1B-G**.

Table 2-8: Distribution of Urban Rural Population

	Wards	HOUSEHOLD	POPULATION	AREA HA	POP DENSITY	Pop %	Area %
Attariya		13,745	72,521	15,245	4.8	23%	26%
Urban	0	0	0	0		0%	0%
Rural	13	13,745	72,521	15,245	4.8	100%	100%
Bheemdatt		20,684	104,599	17,181	6.1	33%	29%
Urban	5	8,667	40,648	2,243	18.1	39%	13%
Rural	14	12,017	63,951	14,938	4.3	61%	87%
Dhangadhi		21,030	101,970	10,401	9.8	32%	18%
Urban	7	15,201	70,183	3,245	21.6	69%	31%
Rural	7	5,829	31,787	7,156	4.4	31%	69%
Jhalari Pipaladi		8,025	42,026	16,465	2.6	13%	28%
Urban	0	0	0	0		0%	0%
Rural	12	8,025	42,026	16,465	2.6	100%	100%
Total		63,484	321,116	59,291	5.4	100%	100%
Urban		23,868	110,831	5,488	20.2	35%	9%
Rural		39,616	210,285	53,803	3.9	65%	91%

2.3.5 Municipality Urban Growth Pattern

38. In the absence of legitimate land use plans, the urban growth has not followed any particular pattern in any project municipality. The organic urban development prevails in all cities of Nepal; and these four cities are no exception. Typically, the landowner initiates the construction of buildings, generally for residential use, and requests concerned authorities for the construction of road and erection of poles for electrical cables. This leads more to ribbon development which lacks any particular urban form. It also causes difficulty in the provisioning of urban services, open spaces and amenities for the community. The inner land parcels quite often get blocked or have very narrow access causing difficulty in the movement of vehicles especially during an emergency.

2.3.6 Population Projection

39. Except Attariya, the population growth in the municipalities during last census decade (2001-2011) cannot be termed very high. During the period, Dhangadhi had about 3.6% of growth and Jhalari-Pipaladi had the growth of about 2.5%. Among the four, Bheemdatt had the least growth of about 1.1%; less than the national growth (Refer Table 1-10). However, more growth is expected after the start of IUDP2, operation of postal road and improvement of connectivity to India.

40. The projection of population in the municipalities is therefore made in three growth band; low (3%), medium (3.75%) and high (4.5%) during different time period. With this assumption the population in four municipalities is expected to reach about 1.0 million by 2041 as presented in **Table 2-9**.

Table 2-9: Population Projection

Year	Growth Rate	Attariya	Bheemdatt	Dhangadhi	Jhalari Pipaladi	Total
2011	2.66%	72,521	104,599	101,970	42,026	321,116
2016	3.00%	84,073	121,260	118,212	48,720	372,265
2021	3.00%	97,465	140,575	137,041	56,481	431,562
2026	3.75%	117,164	168,987	164,739	67,897	518,787
2031	3.75%	140,844	203,141	198,035	81,620	623,640
2036	4.50%	175,519	253,153	246,790	101,715	777,177
2041	4.50%	218,731	315,478	307,548	126,757	968,514

3 Visioning Regional Urban Development

3.1 Regional Urban Development Issues

41. The regional urban development issues in the far western region may be described as follows:

- Development in the far western region started only after the establishment of connectivity through the Karnali Bridge two decades ago. Major roads, irrigation, hydropower projects are yet to develop.
- In the absence of employment opportunities and due to the lack easy connection to the eastern part of the country, the youth workforce began to move to Indian cities to work as laborers or security guards; and this habit still continues.
- The education and health institutions have just begun to develop or establish; e.g. Far Western University in Bheemdatt and Geta Eye Hospital in Dhangadhi. The eye hospital seems to have gained quite a good reputation not only in the region but also in India. However, there are no equally good education institutions; especially in the fields of medicine and engineering.
- The constraint of accessibility to India from both borders towns; Dhangadhi and Bheemdatt. At Bheemdatt, access across the Sarada Barrage is totally under control of India, has severe weight restrictions and is open only a few hours each day. The single lane 35km long road south from the border near Dhangadhi passes through Dudhia National Park is often restricted to vehicles.
- There is no single apex authority to plan, coordinate and oversee economic and urban development in the region; hence inter-municipality coordination is not effective. Moreover, there is also lack of explicit division of roles between MoFALD and MoUD; that often creates confusion or duplication.
- In the absence of elected local bodies, the municipalities lack authority and drive to bring change; and the staff are compelled to limit themselves to basic routine work.
- Regional approach in urban planning is relatively new. Inter ministry, inter department and inter district coordination among other government agencies relating to roads, land reform, irrigation, forest, agriculture, health, education etc. have to be coordinated in order to realize the broader vision. An institution is required with the authority to prepare land use plans, building bye laws, land sub-division regulation and physical development plan in the region. The institution should also be made responsible for development activity implementation and monitoring.

3.2 Regional Urban Development Vision for Far West Terai

3.2.1 Elaboration

42. The Vision focuses on *'Balanced and prosperous urban centres in Far Western Terai Region with the integration of tourism, agriculture and forestry and mainstreaming GRESI; activities* that are 'green, resilience, efficiency, sustainability and inclusivity'.

Balanced and Prosperous Urban Centres

43. Nepal Urban Development Strategy 2014 has adopted the 15 year national vision on Balance and Prosperous National Urban Centres; by which it means to incorporate
i) achievement of set milestones regarding physical and institutional development
ii) enhancement in the quality of urban living through the improvement of urban environment, provision and quality of infrastructural, economic and social services.

44. In addition to the Ministry of Urban Development, it also aims to develop coordinated and integrated efforts with other key agencies of the government dealing with transport infrastructure, environment, health, education, commerce and industries, agriculture and biodiversity resources and energy.

45. Setting a vision with these key elements would not only complement the national vision for urban development but also provide a great impetus to achieve the national endeavor.

Integration of Tourism, Agriculture and Forestry

46. Far Western Terai Region has ample natural resources in the form of fertile land, forests and lakes fed by numerous rivers. The area also possesses high potentiality of developing tourism as an important economic base. The vision looks forward to integrating tourism, agriculture and forestry towards sustainable economic development of the region.

Mainstreaming GRESI

47. The five underlying principles that include green, resilience, efficiency, sustainability and inclusivity, need to be adhered while proposing interventions that have implication to physical, social and economical environment.

48. Mainstreaming GRESI would mean that the urban development initiatives should:

- not have negative externalities and overstretch the capacity of the environment to sustain itself;
- nurture and develop social capital towards vibrant social life in the city and should aim to minimize alienation;
- promote environmental friendly economic activities that can be sustained with minimal external support;
- be socially inclusive in terms of ethnicity/ caste, gender and economic class;
- strengthen physical and social resilience so that the cities are safer and adaptive to changes;
- endeavor towards making cities green, cool and wet;
- help the municipalities to develop their efficiency on governance, technical and managerial capability by maintaining transparency and accountability.



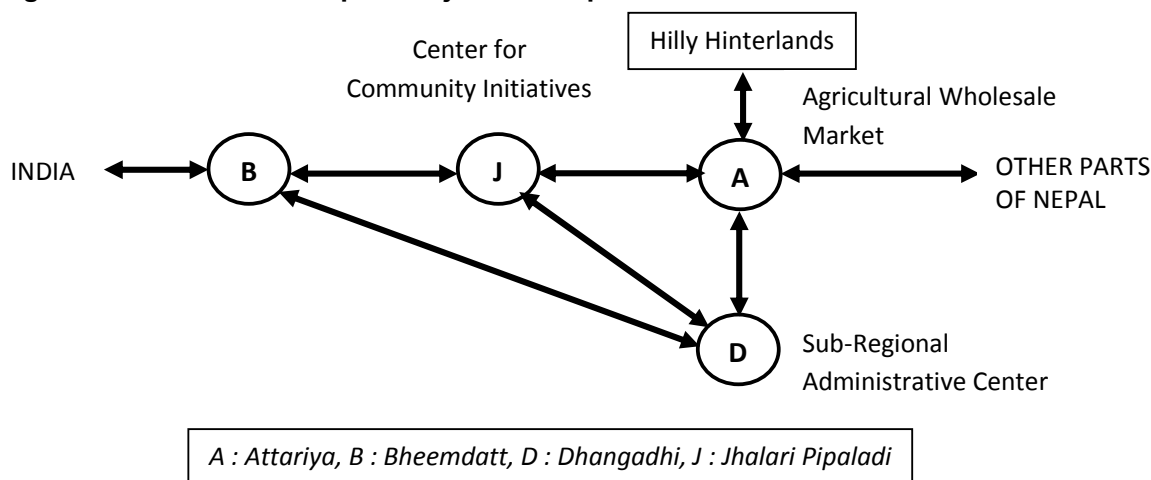
VISION 2040

Balanced and prosperous urban centers in Far Western Terai Region with the integration of tourism, agriculture and forestry and mainstreaming **Green, Resilient, Efficient, Sustainable and Inclusive** environment.

3.2.2 Functional Roles of Project Municipalities

49. Over the period of 25 years, the project municipalities are expected to take a lead on following roles as indicated in Functional Map, **Figure 3-1**, and described below.

Figure 3-1: Functional Map of Project Municipalities



Attariya: Wholesale market of agricultural products

50. Being located on the cross roads of two highways with connect to the all-weather roads to the hills, Attariya can provide avenues for the agricultural products to be distributed to other parts of country and India. It can develop a functional role of a service centre to the hill communities. One of the pre-requisites might be space for large godowns with weighing, sorting, cleaning, grading and packaging facilities, through community or private initiatives. These could be potentially located East of Attariya roundabout, Haraiya, Majgau Katan or Syauli Bajar may. Further a Special Economic Zone Development Committee, under Ministry of Industry, has identified around 80ha of land at Haraiya on the east of Attariya Chowk for the development of a SEZ; which would add attractive value to the municipality.

Bheemdatt; Western gateway and market centre

51. Owing to its location at the western international border of the country, Bheemdatt has potential to develop as a western gateway in proper sense. Initially, with completion of the Tankpur Link road and opening up of traffic across the Tanakpur Barrage to India within the next 2 years and later a new bridge over the Mahakali River with a dry port in Chadani Dodhara, Bheemdatt is expected to have unhindered linkage to the Indian cities. The municipality is then likely to grow to a fairly large market centre for domestic and foreign goods. As a result, the market will be extended to the both east and west side of the municipality. Due to the limitation of land within the municipality, in the long term the adjoining VDCs (Sudha and Dorji) on the east might need to be merged. A land pooling scheme covering about 500ha could also be initiated.

Dhangadhi: Regional administrative centre

52. With air transport service connections to Kathmandu and road connections north to the hills and south to India plus being located in the middle of the FWR Terai region, Dhangadhi has started serving as de-facto regional administrative headquarters. The official Regional headquarters located in Dipayal-Silgadhi, about 200 km north of Dhangadhi, is not

easily accessible to a large proportion of the region and the air connection from Kathmandu to Dipayal is also not regular since private airlines do not have scheduled flights.

53. Like Nepalgunj, Dhangadhi will continue to attract regional level non-governmental organizations, hotels and small industries. With concerted efforts, Dhangadhi can be developed as the regional centre of the activities relating to agriculture, forestry and tourism.

Jhalari-Pipaladi: Demonstration centre for community initiatives

54. Jhalari-Pipaladi has not yet developed any particular urban identity. However, this area could be developed as a demonstration centre for community initiatives for the promotion of non-timber forest products (NTFP). There are altogether nine community forest committees under Buffer Zone Management Committee, of which two committees lie in Jhalari and Pipaladi. Support to community development and income generation activities with forward linkages would help strengthen the community initiatives in the region. A small market centre of about 300ha along the E-W Highway, through land pooling, could be developed with the facilities, such as, petrol pumps, public toilets, bus stops, vegetable markets along with residential plots in the inner areas.

3.3 Concept of Urban Development

55. The concept of urban development in each project municipality should have linkage to the broader economic development vision of far western Terai region and also to strengthen the defined functional role. The development concept should also focus on :

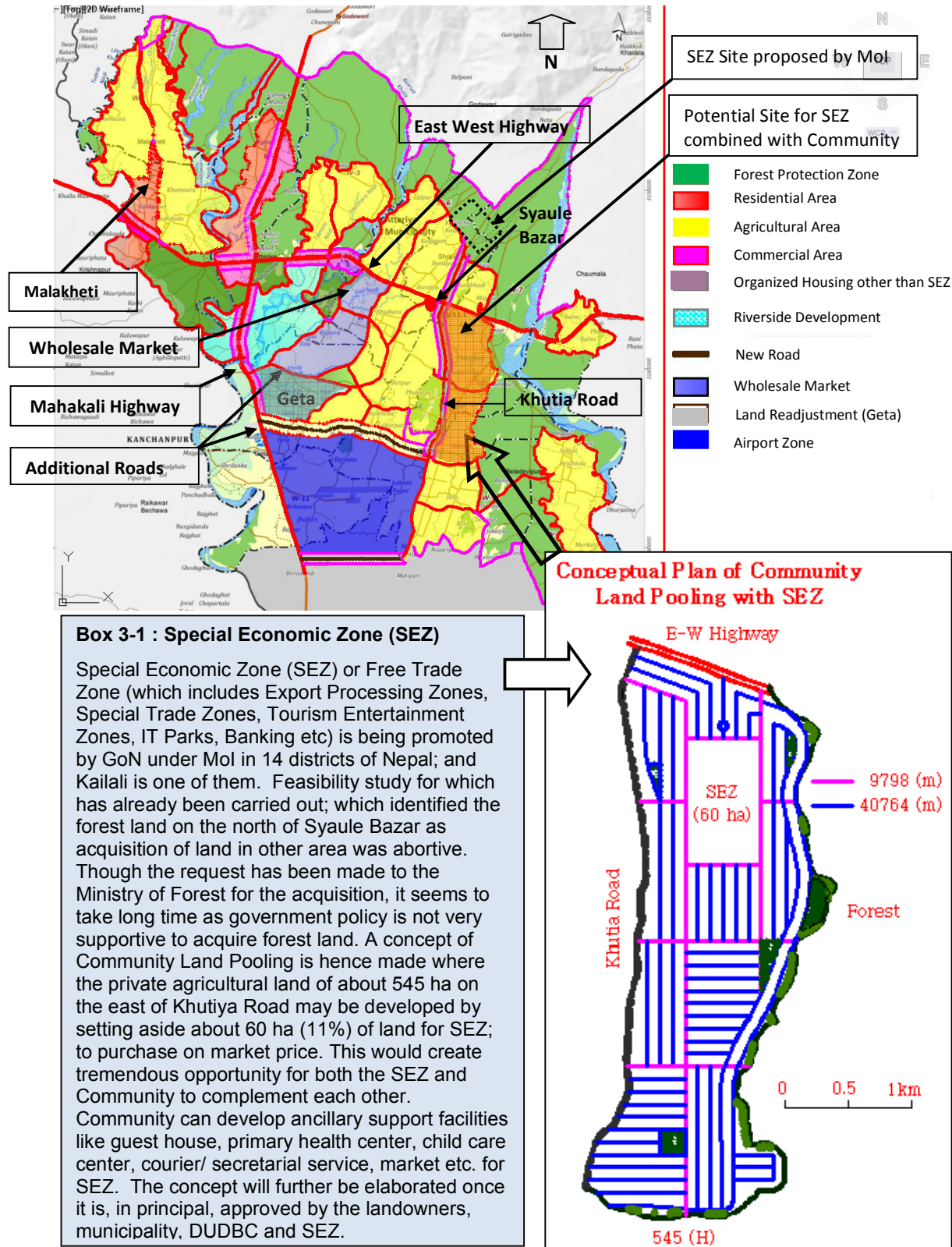
- a) preparing legitimate land use plan through participatory process; after carrying out the assessment of hazards, vulnerabilities and risks of the municipality and designating the areas to Protect or Control or Promote in accordance with the potential risk and vulnerabilities;
- b) identifying areas for urban services and utilities (such as bus parks, sanitary land fill site, waste water treatment site etc.) on the basis of future development vision;
- c) exploring possibility of developing community land pooling with the mandatory provision of at least one economic development activity (such as: special economic zone, wholesale market, small and cottage industry, sports complex, bus park, etc.) within the project or adjacent to it by assuring inter-ministry cooperation and coordination;
- d) identifying the priority projects on the basis of a development concept plan;
- e) prohibiting acquisition of flood plain or forest land for economic development activities; except those complement to nature and the environment.

3.3.1 Concept Development Plan for Attariya Municipality

56. As Attariya and Dhangadhi are contiguous, they can be treated as one conurbation with shared urban infrastructure and land use. Three roads presently define Attariya; i.e. North-South or Mahakali Highway leading to Dhangadhi to the south, East-West highway in the middle and Khutia Road on the east. These roads are of prime importance for the transportation to and from Dhangadhi and other parts of Nepal, particularly to the North as this is the only road which connects seven hill districts of Far Western Region to the Terai. The road on the east of Attariya, called Khutia, though not in very good condition at the moment, is expected to act as an alternative route to Dhangadhi for the vehicles from the East. One additional strategic road needs to be developed to connect the two parallel north

south roads; i.e. Mahakali Highway and Khutia Road. Another equally important road will be the one connecting Geta settlement in south west to Syaule bazar in the north-east. Refer to Figure 3-2.

Figure 3-2: Concept Development Map of Attariya



57. The area around Attariya Junction (the present town centre) might not be able to expand much as it is constrained on the east and south by forest. The west strip towards Godavari on the north of the junction has the potential to develop as a commercial area. Geta on the south of the junction, towards the airport, and Malakheta on the west and north west of the junction are two major settlements with potential for further densification. Both areas have thin settlements at present. The inner roads however have been developed quite haphazardly. The possibility of introducing land pooling in those areas needs to be explored; which may provide the opportunity to re-align the roads, widen them, and make the provision of some community open space and readjust the land parcels.

58. Since Attariya is the entry to the Terai for seven hill districts of Far Western Region, it has potential to grow as a wholesale market town; especially for the agro and forest products from the hills. A sizeable space for the wholesale market hence needs to be provisioned. A potential area for this is about two kilometer east of Attariya junction, beyond the forest land. A land development approach, with a similar concept to the SEZ, may need to be used.

59. Many land parcels in Attariya Municipality, especially to the north, are unregistered (eilani) and hence lack legal bearing; though the people have been residing there for many decades. Legalizing these lands seems to be one of the most critical and sensitive issues of this municipality. Rational land sharing mechanism with resettlement provision needs to be explored to resolve the issue.

60. Attariya is expected to have the population of nearly 220,000 in 25 years, by 2040. This infers an additional population of about 150,000 which is almost two times more than present population. The biggest challenge with this municipality lies on managing the increased population while limiting urban sprawl. For this, a thoughtful planning for land use and bye laws needs to be carried out; which should essentially contain; i) the area dedicated for future expansion; ii) the area of protection; iii) the area to act as buffer between zones e.g. agricultural. The aim should be made to retain at least 35% of total area for agricultural use (from current 51%) in order to maintain food security.

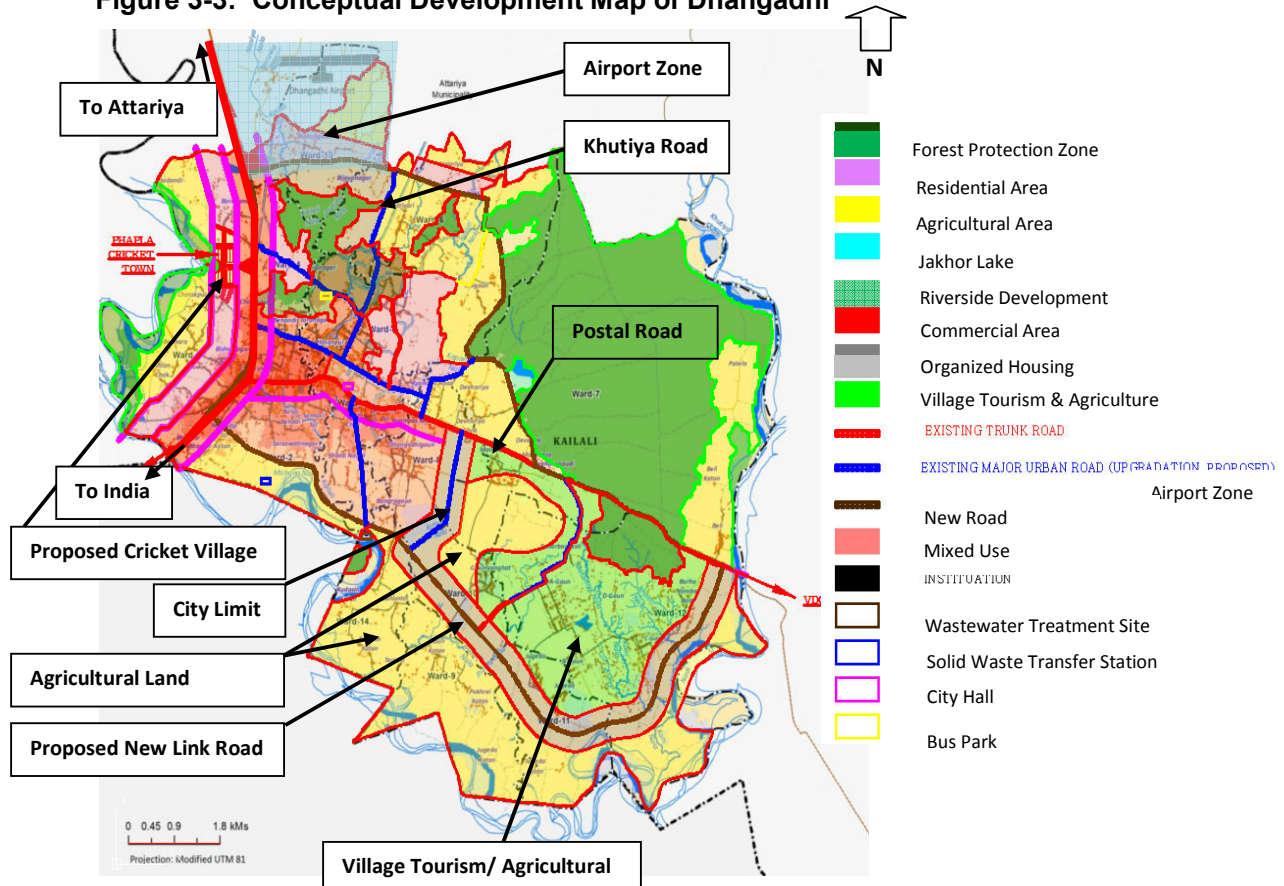
3.3.2 Concept Development Plan for Dhangadhi Municipality

61. With government offices, bigger market, proximity to India, airport (shared with Attariya) and longer existence with a larger population, Dhangadhi currently has better economic opportunities than Attariya. However, the border market of Gauriphanta in India, located just beside the border which was convenient to Nepalese for buying household commodities, has been closed due to Dudhia National Park and moved to Paliya; which is 35km away on the other side of the Park. The movement of traffic is also constricted due to the Park which has negatively impacted on Dhangadhi development. An alternative route for the free movement of people and goods to India is necessary for the development of towns in the region.

62. There are three strategically important roads in Dhangadhi: a) North-South Road of Mahakali Highway connecting to India, Attariya, hill districts and other parts of Nepal; b) Postal road parallel to the East-West Highway connecting villages and towns along Nepal's southern border; and c) Khutiya road on the north east which will act as an alternative route to Attariya and East-West Highway. The North-South Highway and Postal Road are under the jurisdiction of Department of Roads; the latter has just been widened and improved. The North-South Highway is also planned to be upgraded. The third important road i.e. Khutia (10km) could be upgraded by this project.

63. High density population is observed along the Postal road from the junction with the Mahakali Highway at Chauraha for about 4km eastwards. The south of the road has old settlements while the north is mostly has institutions. New residential development has started to develop further north of this road, along North-South Roads. The rest of Dhangadhi seems to be quite rural with abundance of agricultural land and sparse settlements. A city urban limit has to be preferably demarcated in order to define two distinct characteristics and develop bye laws accordingly; to promote in-fill development on the north and protect agricultural land on south.

Figure 3-3: Conceptual Development Map of Dhangadhi



64. Most of the eastern part of the Dhangadhi (north of the postal road) is covered by forest; which constitutes about 25% of total area of the municipality. The area south of the postal road has large tracts of agricultural land with sporadic rural housing at several locations. These villages, in municipal wards 11 and 12, are particularly important due to the predominance of the Tharu Community and the potential for developing village tourism. The connection to these settlements from the postal road should be improved to enhance accessibility to the southern part of the municipality. This road shall ultimately serve as a ring road, if connection on the east beside the forest is developed.

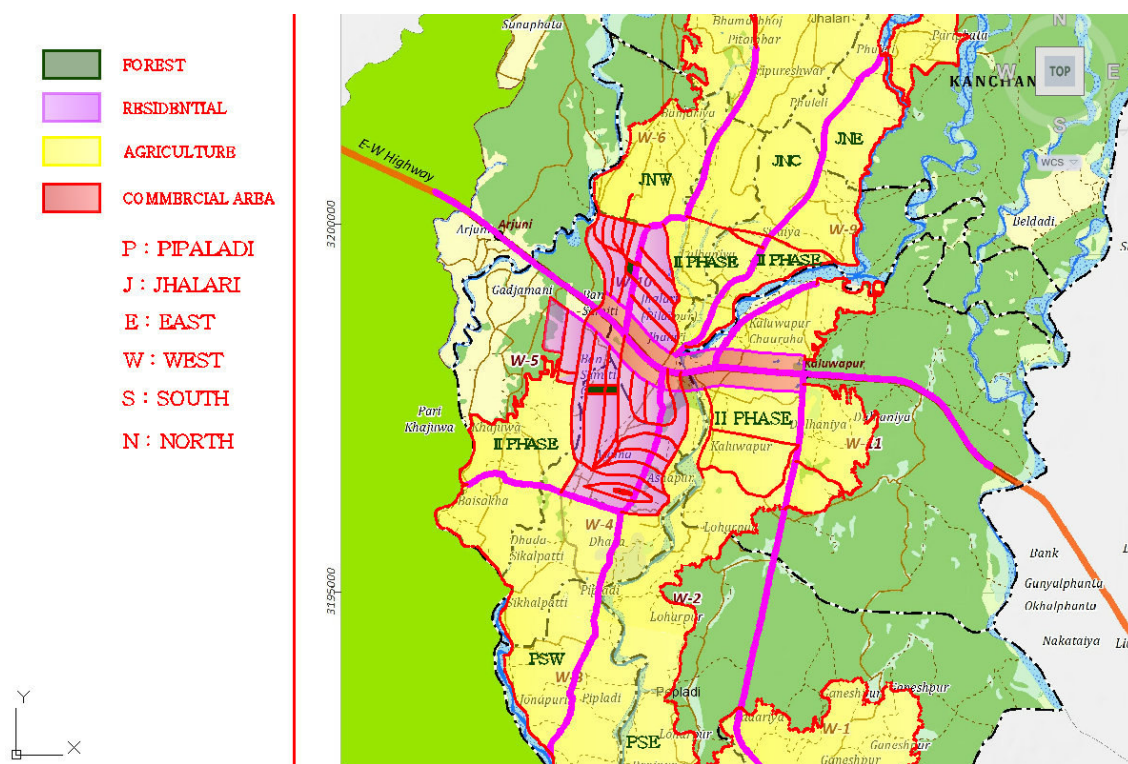
65. The people of Dhangadhi, including the surrounding districts, seem to be ardent lovers of cricket. With great enthusiasm and support from the local community, despite the absence of a standard cricket ground, a national cricket match is organized bi-annually. The district cricket association has identified public land at Phapla, on the east of North-South Highway beside the Mohana River. Since the land lies in the flood plain, it is not advisable to make huge investment on the required infrastructure. However, the problem of flooding

may be eliminated if the stadium location is moved to higher ground. Since the land belongs to private individuals, a community land pooling scheme with the concept of Cricket Village could be considered.

3.3.3 Concept Development Plan for Jhalari Pipaladi Municipality

66. The two VDCs of Jhalari and Pipaladi on the north and south of the East-West highway have been clubbed together to function as a single municipality. The municipality is elongated north-south with forests on the west, east and north; which form a good buffer to the municipality. The population of about 42,000 (in 2011) are scattered around the municipality, essentially in a rural setting. A few small merchandise shops, with selected items, facilitate the villagers for their daily needs. The people have to either visit the markets of Bheemdatt or Dhangadhi for major purchases. Planning Jhalari-Pipaladi Municipality, with no specific economic generating activities, seems challenging. Moreover, the aspiration of the people of both the communities must be taken into account while proposing any development plan. Accessibility to the settlements is their prime concern. **Figure 3-4** shows the tentative layout of the neighborhood roads with the provision of open spaces.

Figure 3-4: Conceptual Development Map of Jhalari Pipaladi



67. The East-West highway and its immediate area is the most prominent for the development of a market center and residential area. Along a 3km stretch, on either side, may be developed phase-wise through land pooling. The 250m of strip either side of the East-West highway could be assigned for the commercial activities.

68. Except the main highway, none of the roads to the inner settlements have been planned and most of them are earthen. Two north-south roads on either side of the municipality would create six definite zones; three in each of Jhalari and Pipaladi. Widening

and improvement of these roads should be the priority. Transverse linkage connecting the north south roads could be provided every 2km.

69. Provision for small cottage and small industry promotion center may possibly help local people to develop entrepreneurship skill and explore markets for their products. Similarly, a center for learning of community initiatives for the promotion of non-timber forest products (NTFP), on the north west may be developed.

70. The principle of this type of planning is to focus the initial development in the highway proximity in order to protect the agricultural land in the rest of the municipality.

3.3.4 Concept Development Plan for Bheemdatt Municipality

71. Bheemdatt is constrained by Shukla Phanta to the south, forest and hills to the north and the Mahakali river on west. The only possible ways of expansion of Bheemdatt are by: i) promoting in-fill development on the north and south of the East-West highway; ii) developing a new town on the east; and iii) expanding the municipality by including Sudha and Dahichi VDCs on the east.

72. As the town is the western gateway to Nepal, economic growth and development of Bheemdatt is significantly affected by the flow of goods and people from India to Nepal and vice versa. This flow should be unhindered but is presently severely restricted. Fortunately, there are plans for the construction of a new bridge, within Nepal, over the Mahakali River. Design of the bridge, 1.5km downstream of Sharada Barrage, is being carried out and is expected to be finished in early 2016. But, completion of the bridge cannot be expected within 5 years, by 2020. Once the bridge is open, a land use change near the new bridge area is inevitable with the expected demand for warehousing, commercial and transport services.

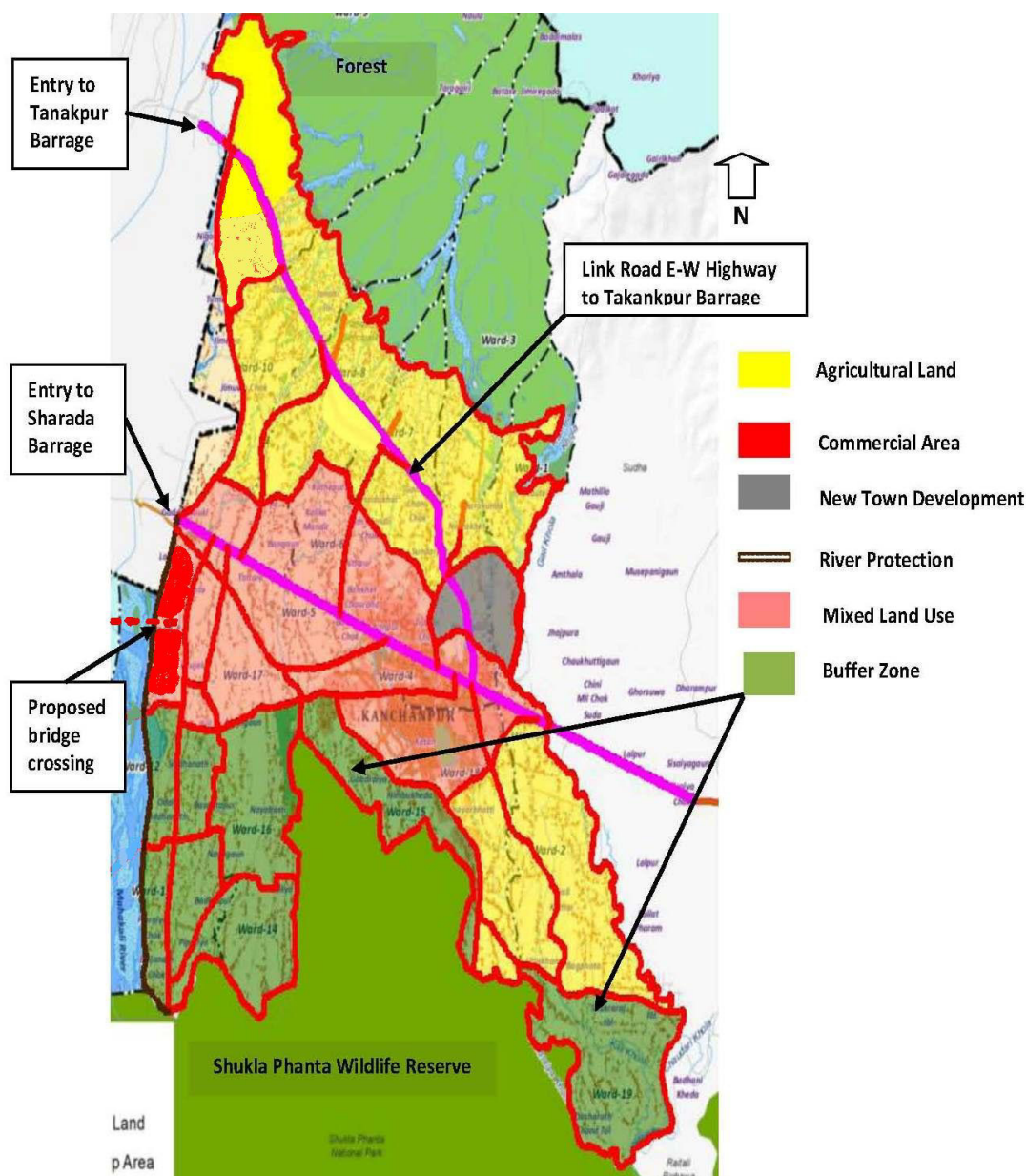
73. The wards adjoined to Shukla Phanta Wildlife Reserve (SWR) are declared as Buffer Zone; in which activities that may lead to adverse impact to the wildlife are prohibited. These areas are essentially agriculture with the inhabitation of people in sparse settlements. Community development package pertaining to health and sanitation, education and livelihood should be introduced in these areas if physical development activities of significant magnitude could not be executed; due to environmental reason.

74. A link road to connect the E-W Highway and Tanakpur barrage is underway by Department of Roads; that passes diagonally just before the market through wards 7, 8, 10 and 9. Since the right-of-way is of main highway standard (50m ROW) this road is expected to change the land-use en-route. Commercial development was foreseen near the end, before barrage. However, if the barrage cannot be used or is restrictive for traffic across the river into India, and when the new bridge crossing (mentioned above) is complete, use of this road and urban development may not meet original expectations. But, care has to be taken not to encourage haphazard development along the strip as the alignment lies in the proposed agricultural land.

75. Except some small market areas and the SWR buffer zone, all other areas of municipality have mixed land use with thin scattered settlements. The internal roads therefore seem are most vital in order increase the population density of the area and make use of inner land parcels. However, the city cannot afford to have mixed land use everywhere. Four land use zones therefore seem prominent; i) commercial; ii) agriculture; iii) mixed land use; and iv) buffer. More compact settlement may be required in the vicinity of

town in order to accommodate part of the additional population. The land north of the market center and east-west highway may possibly be the appropriate location for this.

Figure 3-5: Conceptual Development Map of Bheemdatt



3.4 Proposed Planning Activities

3.4.1 Short Term (1 to 3 years)

- Prepare a Comprehensive Vision Plan 2040 using a participatory process and get it endorsed by the Government.
- Prepare urban development plans and programs for each project municipality that help accentuate their functional role.
- Carry out studies and detail design of priority urban infrastructure improvement schemes in the municipalities.

- d) Help KCCI (Kailali Chamber of Commerce and Industry) establish an NGO to initiate activities to integrate agriculture, forestry and tourism.
- e) Prepare land use plans for each municipality and designate specific areas for AVOID, CONTROL and PROMOTE with due consideration of disaster and climate changes.
- f) Establish a regional urban development authority to plan, regulate and guide the urban development activities in the municipalities of Kailali and Kanchanpur Districts.
- g) Establish a federation of community groups of far west region relating to agriculture, forestry and tourism.
- h) Undertake land pooling feasibility studies for schemes in Syaule in Attariya; Sudha in Bheemdatt, Matiyari, Bijayanagar and Chatakpur areas of Dhangadhi and Kaluwabazar in Jhalari-Pipaladi.
- i) Coordinate with MoI for the detail study on the establishment of SEZ in Attariya and acquire the land.
- j) Create a citizen pressure group for construction of a new bridge over Mahakali River.

3.4.2 Medium Term (3 to 7 years)

- a) Implement priority investment projects in the municipalities under ADB's assistance.
- b) Start river protection works through bio-engineering along Khutia, Godavari and other rivers with the mobilization of community groups.
- c) Coordinate with MoPIT for the construction of 4 lane road from Dhangadhi to Attariya, link road from Tanakpur to E-W Highway at Bheemdatt.
- d) Coordinate with MoPIT for the completion of road and bridges connecting to Dhangadhi-Tikapur and Tankapur Link Road.
- e) Coordinate with CAN for the expansion of Dhangadhi Airport to allow use by larger cargo aircraft and night operation facilities, hanger, cargo handling, etc.
- f) Establish exquisite tourist information centres (including decent facilities like cafe, cyber, saloon, lavatories, ATM, locker) in Dhangadhi and Bheemdatt.
- g) Establish an agro collection and storage centre in Attariya in PPP model and establish backward and forward linkages
- h) Coordinate with MoI for the construction of SEZ.
- i) Implement land pooling projects as identified.

ANNEXES 1B-A to G

Annex 1B-A: Population in the Development and Ecological Regions (2011)

Annex 1B-B: Population Density in the Development and Ecological Regions (2011)

Annex 1B-C: Spatial Distribution in the Development and Ecological Regions

Annex 1B-D: Urban Population, Household, Density and Future Projection

Annex 1B-E: Municipalities, Sub Metropolitan and Metropolitan Cities

Annex 1B-F: Population, Growth Rate and Density of Project Municipalities

Annex 1B-G: Ward-wise Household, Population and Density