

Example review of PPPs relevant to the Preliminary SEA of Bhutan's Road Sector Master Plan (2007-2027)

POLICY/PLAN	KEY AIMS	ENVIRONMENTAL / SOCIAL ISSUES
(A) POLICIES AND STRATEGIES		
Water Policy, 2007	Vision: Water is the most important natural, economic, and life-sustaining resource, and we must ensure that it is available in abundance to meet the increasing demands. Present and future generations will have assured access to adequate, safe, and affordable water to maintain and enhance the quality of their lives and the integrity of natural ecosystems. Emphasis on water resources management within river basins and aquifers, including both upstream and downstream water users.	- Localized and seasonal water shortages for drinking and agricultural purposes - Increasing sediment load in rivers is decreasing the expected output and economic life of hydropower plants - Pressure on water resources is mounting due to competing demands from different users - New demands from other sub-sectors such as hydropower and industries - Rapid urbanization has serious impacts both on water demand and associated pollution - Increasing demand for timber, firewood, and non-timber forest produce is starting to have negative impacts on watersheds - Climate change will reduce the natural river flow-regulating capacity of glaciers
Sustainable Hydropower Development Policy, 2008	Develop hydropower projects in an accelerated manner to reach an installed capacity of 10,000 MW by 2020. Projects to cover: micro/mini, small, medium, large, and mega.	- Project developers are required to carry out comprehensive EIAs, make suitable provisions for mitigation of adverse impacts, and implement an Environmental Management Plan and other risk management measures. - Need to protect water catchment areas by promoting sustainable agricultural/land use practices and nature conservation works; - Need for sustainable water resources management - Annual rental paid for private land acquired - Free 10,000 KWh/yr provided for every acre of private land acquired (or cash-in lieu) to the owner. - Developers must provide up to 1% of project costs to cover rehabilitation/resettlement of displaced persons, and provide employment to at least one member of every displaced family.
Cottage, Small and Medium Industry (CSMI) Policy, 2012	Provides direction for the development of CSMI, preparing them for the opportunities and challenges of globalization; ensuring they play an increasing role in fostering economic development; to generate employment and support equitable distribution of income and bring about balanced regional development	- CSMI accounts for 98% of all industries in Bhutan - Policy fosters job creation

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Irrigation Policy, revised 2011 (draft)	Provides direction on measures to increase the irrigated area and improve irrigation water management and optimal utilization of national water resources for crop production.	• A significant proportion of arable land remains under rain-fed conditions, while c. 10% of irrigation systems is non-functional. • Irrigation technology and on-farm water management remain rudimentary. • Decentralization has impeded the planning and design of irrigation projects. • Lack of water storage systems • Poor-quality irrigation schemes that are highly prone to damage during peak monsoons and high-water demand periods; and often washed away during natural calamities. • Conflicts among conjunctive water users/uses from a common source • Pollution of water by agro-chemicals is not yet assessed. • Channel and on-farm water is not managed efficiently resulting in land degradation and water wastage.
Land Policy, final draft 2010	Goal: to strive for sustainable use of land through efficient and effective land management and prudent land administration for socioeconomic development and conservation of the natural environment in the country. Objectives—to: • Coordinate and harmonize the use of land by different users; • Provide access to land for all Bhutanese citizens and juristic persons • provide secured land tenure and rights to title holders; • Generate land revenue and control land speculation; • Undertake broad zoning based on land use capability to fulfill land needs for different purposes; • Enhance equitable, sustainable, and efficient use of land resources; • Ensure protection and conservation of ecology	See objectives

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National Urbanisation Strategy, 2008	Objectives—to: • Develop a proactive approach to the country's urban growth in a sustainable and environmentally sound way that minimizes the negative effects of urbanization; • Ensure balanced regional growth; • Develop a strategy for improving the quality of life of the growing urban population in a way that embraces rather than undermines the local culture and values; • Develop a set of recommendations to improve local government systems in Bhutan, including municipal finance and institutional aspects.	• Very rapid rates of urbanization • Limited availability of serviced land • In general, urban centers consume prime agricultural lands in the valleys and encroach on forested hill slopes. • Lack of proper infrastructure and facilities for drainage, sanitation and waste disposal have cumulative adverse impacts on the environment. • Increased timber logging and conversion of slopes into urban uses • Primary environmental pressures on the urban environment arise from: water supply; waste water collection and treatment; drainage and flooding; solid waste collection and disposal; hill cutting and erosion • Secondary environmental issues are: electrification and street lighting; noise; traffic congestion; air pollution; pedestrian areas; household fuel supply • Concerns of the poor (most of them migrants who do not own land in the town): ○ Unaffordable rentals that seem to be responsible for squatting. Housing for poor is critical ○ Housing with access to quality /effective basic and social services. ○ Livelihoods and local economic development, youth unemployment ○ Transport • Urban development related activities have the potential to negatively impact the cultural heritage structures and systems • Loss of the traditional extended family as the proportion of migrants in the urban areas increase • Household will be the major social loss. • Culture and heritage consist of a number of intangible and tangible aspects of which the traditional built environment, community spaces and places form the most important as they are mostly home to and imbibe within themselves traditional rituals, ceremonies, and festivals; arts, crafts and textiles including dances, poetry/literature (folklore, myths, legends), music and religion; values and relationships; dressing and etiquette; social setup and structures.

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Economic Development Policy, 2010	Vision—to: - Promote a green and self-reliant economy sustained by an IT-enabled knowledge society guided by the philosophy of Gross National Happiness - Work towards achieving a minimum economic growth rate of 9% annually and strive to be a middle-income nation with economic self-reliance by 2020. - Achieve full employment (97.5%). Strategies: - Diversify the economic base with minimal ecological footprint. - Harness and add value to natural resources in a sustainable manner. - Increase and diversify exports. - Promote Bhutan as an organic brand – in natural resources, tourism, culture, handicrafts, textiles, and agro-produce. - Promote industries that build the Brand Bhutan image. - Reduce dependency on fossil fuels, especially with respect to transportation.	- Economic development should take into account environment mainstreaming in a phased manner that allows for industries to grow as well as engage in cleaner production - Government to provide incentives for the promotion of green technology, micro-hydro projects, solar, wind, biomass, energy efficiency, and conservation programs. - Conservation efforts to be one of the main drivers for developing the “Brand Bhutan” theme. - Aims to protect biodiversity and genetic resources and promote indigenous knowledge. - Commits to use non-renewable resources (i.e., minerals) in a sustainable manner to diversify the economy while at the same time ensuring due environmental considerations. - Commits to pursue corporate social responsibility in the construction industry. - Organic farming will be a major focus area. - Commits to phasing out use of harmful chemical fertilizers and pesticides - Encourages bio-exploration and bioprospecting. - Concludes that the “sensitive mountain ecology and the difficulties of building multi-lane highways make tunneling the most viable option to reduce travel time as well as increase connectivity throughout the country. The development of the road sector, especially tunnels, shall be in sync with the hydropower development.”
Mineral Development Policy, 2011 (draft)	Objectives—to: - Develop the scarce mineral resources for optimum value addition so that maximum benefit accrues to the nation; - Allow selective and cautious development of minerals for socioeconomic development while ensuring environmental sustainability and inter-generational equity in the larger interest of the country; - Ensure the availability of construction materials at affordable prices to all the citizens; - Increasingly contribute to the national economic development by enhancing generation of revenue and employment;	- The mining sector is an important catalyst for economic growth in terms of revenue and employment generation. - Mine reclamation and restoration. - Impacts on communities surrounding mines. - Mining companies must contribute to a community development fund to be used specifically for drinking water schemes, water source protection, social forestry schemes, renovation of religious sites belonging to the community, and other schemes as may be prioritized by the community, managed by a Tshogpa appointed by the affected communities, - Priority for employment accorded to the local affected community.

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	- Promote human resource development and ensure that mineral development is carried out by technically qualified professionals; - Promote investment in the mineral sector by technically and financially competent entities; - Develop an integrated mineral information system in the country; - Ensure effective regulation, administration, management, and monitoring of the mineral sector.	
Forestry Policy, 2010	Objectives—to: - Manage Bhutan's forests for sustainable production of economic and environmental goods and services and to meet the long-term needs of society. - Manage Bhutan's production forests for sustainable supply of timber, other forest products, and environmental goods and services and to meet the long term needs of society; - Maintain species persistence and ensure long term sustainability of Bhutan's biodiversity, ecosystem services, natural habitats, and cultural heritage through a network of protected areas, biological corridors, and management of other parts of the forest landscape for positive environmental outcomes; - Provide for effective and integrated watershed management, maintain, and improve water and watershed conditions, and contribute to sustainable livelihoods through the provision of watershed services; - Empower rural communities manage forests sustainably for socioeconomic benefits, poverty reduction, and to contribute to overall sustainable forest management at the national level; - Facilitate raising forestry crops on registered land of individuals or institutions and accrue ecological, social, and economic benefits;	- Loss of forest cover due to establishment of development projects. - Forest fires. - Watershed services. - Biodiversity. - Appropriate vegetation composition - Sustainable timber supply. - Illegal logging, poaching, illegal trade of wild flora and fauna - Human-wildlife conflict. - Conservation of scared/heritage sites. - Local community access to forest resources (timber, firewood, medicinal plants and herbs, non-wood forest products, etc.)

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	• Enable an economically viable and efficient forest-based industry aimed at adding value to forest products and build capacity of the private sector and rural communities to utilize, process, and market forest products; • Establish a dynamic organizational setup through institutional reforms for appropriate managerial and technical capacity to implement all policy objectives.	
Renewable Energy Policy, 2011	Long-term objectives: • Enhance energy security and broaden the energy portfolio; • Conserve the environment and reduce greenhouse gas (GHG) emissions; • Enhance socioeconomic development. Short-term objectives: • Support and promote research and development in renewable energy (RE) technologies (solar, wind, biomass, etc.) with the long-term objective of a viable energy resource, harness the potential of RE resources, and adopt RE technologies in the country; • Develop a RE roadmap for each of the RE technologies by mapping capacity, generation potential, and cost of generation by location across the Kingdom. • Design appropriate tariffs for various RE technologies to offer a secure and stable market to investors and project developers with guaranteed incentives provided by the government; • Enable, encourage, and facilitate both public and private sector participation for the development of RE; • Enable to set realistic targets for RE for the energy mix in line with the principles of GNH; institutionalize the development of national and	• Land acquisition for projects, and compensation

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	local capacities and capabilities for enhanced and optimum utilization of RE systems; - Promote efficient and cost-effective RE systems by providing time-bound incentives; and - Establish the necessary administrative, basic physical infrastructure, and institutional mechanisms to implement the provisions of this policy. - Strengthen regulatory functions in the RE sector	
(B) PLANS		
11 th Five Year Plan	Introduced “green” concept: prioritizes environmental management and reduction of GHG and pollution based on pro-poor, low-carbon, eco-friendly, energy- and cost-efficient modalities and strategies	
Phibsoo Wildlife Sanctuary: Conservation Management Plan (2012-2017)	Main objectives: - Reduce conservation threats posed by human-wildlife conflicts, poaching, and free-range grazing; - Strengthen the infrastructure for effective management of PWS and implementation of planned management interventions; - Enhance professional and public knowledge for local biodiversity conservation and related community development.	- Human-wildlife conflicts - Poaching - Free-range grazing in forest habitats (large numbers of cattle) - Loss of cereal crops to wildlife - Indirect costs: loss of time, added cost of production, expenditure on torches, batteries, and kerosene, and construction of elevated guard shelters (machans) - Wildlife predation on livestock (lower scale than crop damage) - Proximity to regional wildlife trafficking routes - Spread of animal diseases (where wild and domestic animals overlap) - Lack of research and information - Limited conservation management infrastructure - High security risks due to insurgency in bordering India