



KINGDOM of BHUTAN

BHUTAN - Land Degradation Neutrality National Report



This report summarizes the key outcomes of the national efforts carried out in 2014 and 2015 towards putting in practice the land degradation neutrality concept. The LDN project, which was sponsored by the Republic of Korea, was carried out with the support of the UNCCD Secretariat and implemented in partnership with the Joint Research Center of the European Commission and CAP 2100 International.



1. LDN National Voluntary Target and Strategy

The main objective of the LDN is to operationalize the National Action Programme (NAP) to combat land degradation. In total, five sites are identified and selected covering a total target area of 35.08 km². Three sites are in the eastern region of the country which are Ladrong (4.38 km²) in Jarey Block under Lhuentse District; Bouchoeling (2.03 km²) in Thangrong Block under Mongar District; and Thongrong (2.50 km²) in Phongmey Block under Tashigang District. Another site is located in central Bhutan in Nimshong (7.90 km²) under Korphu Block of Trongsa District while the largest site representing southern Bhutan is in Bosokha (18.27 km²) under Phuntsholing Block of Chhukha District. Table 1 below summarizes the five LDN sites of Bhutan.

Table 1. Five LDN target sites of Bhutan

Block	Block area (km ²)	Number of households	of Vulnerable Dryland area (km ²)	Irrigated paddy field area (km ²)	SLM adopted area (Ha)	Name of LDN site
Jarey	137.6	218	4.38	0.22	8.10	Ladrong
Thangrong	69.0	350	2.03	0.04	20.24	Bouchoeling
Phongmey	101.2	824	2.50	2.28	28.34	Thongrong
Korphu	288.1	210	7.90	1.35	20.24	Nimshong
Phuntsholing	139.8	732	18.27	1.48	121.46	Bosokha
Total	735.70	2334	35.08	5.37	198.38	

Although for Cropland, the Joint Research Center (JRC) of EU estimated a decline in area of only 25.40 km², a higher target of 35.08 km² has been set to ensure that vulnerable drylands are protected. Based on JRC estimates, there is an increase of 9.50 km² of agricultural land between 2000 and 2010, however, based on Bhutan Land Cover Assessment (LCMP 2010), dryland has decreased by 280.29 km² (977.00 – 696.71) between 1995 and 2010 and agricultural land overall has drastically decreased by 2020.45 km² (3146.00-1125.55) (Table 2) between the same period mainly due to reduction of shifting cultivation practices, loss to townships and improvements in assessment technology. The discrepancy in the size of agricultural land is also because of the differences in the methodology used for land cover assessment and mapping in 1995 and 2010. The huge difference could also be due to the fact that only cultivated area of 2.93% was considered and not the total cultivable area.

For cropland, data from JRC showed an increasing trend of net land productivity (390.60 km²) while land with declining productivity was only 3.8 km² between 2000 and 2010 (Table 2). The mean soil organic carbon (SOC) content of the cropland was 56.95 ton/ha (JRC).

Key features of Bhutan

Population:	757,042 (2015)
Rural population:	522,359
Urban population:	234,683
Total area:	38,394 km ²
Cultivated area:	1125.55 km ²
Natural area:	37,200.44 km ²
GDP:	\$ 1.821 billion
HDI:	0.584 (2014)

Implementation Strategy

The target set will be achieved through internal regular budget allocations with supplement from external funding sources through possible donor funded projects coordinated by the Ministry of Agriculture and Forests (MoAF). In fact, Bhutan has already started some Sustainable Land Management (SLM) activities in the five LDN sites with assistance from Bhutan Trust Fund for Environmental Conservation (BTFEC) and UNDP GEF Small Grants. The major activities include establishing contour hedgerows, stone bunds in stony fields and gullies stabilization through construction of check dams, plantation of bamboos and other native species such as *Alnus nepalensis*. In Ladrong site, SLM activities are implemented in 8.10 ha, Bouchoeling 20.24 ha, Thongrong 28.34 ha, Nimshong 20.24 ha and 121.46 ha in Bosokha are brought under SLM activities together constituting total of 198.38 ha (Table 1).

2. Different Critical Processes and their Corresponding Key Drivers

The types of land degradation and its causes are discussed in Chapter IV of the NAP 2014 (pp 16-36) comprehensively. For the LDN Project, three tiered indicators were used: trends in land use/land cover, trends in land productivity and trends in soil organic carbon stocks between 2000 and 2010. UNCCD decided to use the European Space Agency's Climate Change Initiative Land Cover dataset (CCI-LC) as default source of land cover data as it is currently the most up-to-date global land cover data set. It has been processed with a consistent methodology to deriving global land cover from an overall remote sensing time series from 1998 to 2012 in distinct time steps at a spatial resolution of 300 m. Two epochs of 2000 and 2010 were used.

In comparison, the LCMP 2010 was based on digital image processing of multispectral ALOS (Advanced Land Observation System) images (AVNIR-2) from the 2006-2009 winter season with 10 m resolution combined with extensive ground validation.

Critical processes - comparison of land use/cover data between JRC and LCMP 2010

From Table 2, data from JRC shows decline in area of forest by 20.20 km² (0.05% of the total area of the country) between 2000 and 2010. This is in sharp contrast to the LCMP 2010 where forest area has increased significantly by 1265.90 km² (3.30% of the total area of the country) between 1995 and 2010. For shrubs, meadows and sparsely vegetated areas, both JRC and LCMP 2010 showed increased areas but scale of increase in LCMP 2010 is much higher (758.95 km²) than that of JRC (10.70 km²). For cropland/agricultural land, the findings of JRC and LCMP 2010 are again opposite (see section 1 above). For artificial areas, again the findings are different – JRC reported no change in artificial areas whereas LCMP 2010 reported an increase of 30.51 km² (almost 100% increase in 2010 compared to 1995). For wetlands and water bodies and bare lands and other areas, JRC reported no change between 2000 and 2010 while LCMP 2010 recorded decreased areas for both categories (Table 2).

As per JRC data, the area of forest showing declining productivity is 691.25 km² (1.7% of the country's area) while area of early stage of declining is 304.6 km² (0.7%). The area of stable but stressed forest is 1456.94 km² (3.6%). Fortunately 41.7% of the forest is stable and not stressed while 24.3% of the forest land showed increasing productivity. The SOC content of forest land is 62.34 ton/ha (Table 2).

For shrubs, grass and sparsely vegetated areas, the areas with declining productivity is 271.10 km² while stable but stressed area is 447.20 km². Again the area under stable not stressed (5369.10 km²) and area under increasing productivity (1306.10 km²) are much higher compared to declining productivity areas. The mean SOC content for shrubs, grass and sparsely vegetated areas is 55.19 ton/ha. The productivity trends and SOC for cropland has been described under section 1 of this report (see above).

The good part for Bhutan is that even the bare land and other areas has significantly more areas under stable not stressed category of land with SOC content of more than 49 ton/ha.

Key drivers of land degradation processes

It is true that land degradation is driven by very strong interplay of natural/geologic/climatic factors combined with anthropogenic factors especially in hilly areas like Bhutan. However, emphasis is made more on the anthropogenic factors as it can be managed up to a certain extent while it would be futile to even attempt taming natural causes. In the NAP 2014, the anthropogenic or human-induced forms of land degradation are identified as “forest fires, excessive use of forest resources, overgrazing, unsustainable agricultural practices, poor irrigation management system, infrastructure development without proper environmental measures, mining, industrial development and urbanization”.

The major causes of land degradation in forest land including shrub areas are follows:

- i) Forest fires in fir, mixed conifer and blue pine areas
- ii) Excessive use of forest products – timber and firewood
- iii) Conversion of forests to other land use types
- iv) Construction of roads
- v) Mining and industries
- vi) Overgrazing by both livestock and wild animals

The major driving forces of land degradation in agricultural land are (i) imbalanced use of chemical fertilizers and plant protection chemicals; (ii) steep slope agriculture; (iii) poor management of irrigation water; (iv) construction of roads – farm roads; (v) mining and industrial activities; and (vi) urbanization. The details are also given in Analytic Report on NAP (2015) submitted to UNCCD as requirement for LDN Project.

3. National Land Management Plan

The NATIONAL LAND MANAGEMENT PLAN has 2 parts: summary tables and strategic framework

A) Summary tables

Table 2. Presentation of national basic data using the LDN indicators framework from JRC in comparison with LCMP 2010 (only for landuse/cover)

Land-Use Category	Land area (2000)	Land area (2010)	Net change in area (2000-2010)	Net land productivity change (km ² , 2000-2010)					Soil organic carbon (2010)
	km ²	km ²	km ²	Declining	Early stage of declining	Stable but stressed	Stable not stressed	Increasing	ton/ha
Forest land	28769.80	28749.60	-20.20	691.25	304.60	1456.94	16596.31	9691.05	62.34
	25787.00	27052.90	1265.90						
Shrubs, grasslands and sparsely vegetated areas	7459.70	7470.40	10.70	271.10	59.90	447.20	5369.10	1306.10	55.19
	4822.00	5580.95	758.95						
Cropland	649.90	659.40	9.50	3.80	5.00	16.60	243.40	390.60	56.95
Cultivated Agricultural land	3146.00	1125.55	-2020.45						
Wetlands and water bodies	56.30	56.30	0.00	7.30	0.00	12.37	35.70	0.20	52.80
	339.00	278.88	-60.12						
Artificial areas	41.30	41.30	0.00	0.10	0.10	0.71	17.34	23.02	51.10
	31.00	61.51	30.51						
Bare land and other areas	2842.50	2842.50	0.00	391.32	4.56	482.0	1271.22	10.65	49.31
	5951.00	4290.90	-1660.10						
Balancing term	0.00	0.00	0.00						

Total	39819.50	39819.50	0.00					
	<i>40077.00</i>	<i>38394.00</i>	<i>-1683.00</i>					

Note: Figures in bold & italics are national data from LCMP 2010

Table 3. LDN target setting for Bhutan

Negative trends	Area (km ²)	Corrective measures	LDN target		Investments required (M USD)
			Area (km ²)	Time (year)	
Conversion of forests into other landuse; declining productivity & early stage of declining productivity	1016.05	Reforestation with native species in open areas	25.00	2035	3.85
	 Avoid further productivity decline through various means & maintain SOC at 50 ton/ha		2030	0.50
Stable but stressed forest due to harvesting of forest products especially timber	1456.94	Promote wood substitute products with subsidy and avoid further decline in productivity		2030	1.50
Declining productivity of shrubs & meadows from overgrazing + stable but stressed areas	778.20	Promote improved pasture	0.50	2025	1.75
	 Promote improved breeds		2030	0.50
Land degradation due to erosion processes & declining productivity in cropland	25.40	Implement SLM measures as identified in the NAP Avoid further LD and maintain SOC atleast at 50 ton/ha	35.07	2025	4.00
Disturbance of wetlands & water bodies	19.67	RAMSER Framework	1.83	2040	1.90
Land degradation in artificial area	0.91	Plantation in open areas	0.10	2035	0.50
Land degradation in bare and other areas	877.88	Restoration/reclamation of degraded areas	0.50	2035	1.50
Total	-		63.00		16.00

A total of 63.00 km² has been set as LDN target till 2040 which would cost approximately 16.00 million USD. The achievement of the LDN target would heavily depend on availability of external funds for example from donor funded projects.

4. LDN Centered NAP SWOT Analysis

Summary of realigned NAP 2014

For Bhutan, the first version of the NAP was prepared and produced in 2010. As per UNCCD requirement (as decided in COP 8), the NAP document was again realigned with UNCCD's 10 years Strategy (2008-2018) in 2014. The NAP alignment process started on 19 Oct 2013 with the conduction of an inception workshop. Numerous consultations were held at different levels for aligning the NAP with the UNCCD's 10 year Strategy. During the preparation of the realigned NAP 2014, the 11th FYP of Bhutan (Jul 2013 – Jun 2018) was also reviewed to identify activities for addressing LD. The 11th FYP of Bhutan (2013-2018) fitted very well within the UNCCD's 10 year Strategy (2008-2018) period.

The realigned NAP 2014 was approved and launched on 5th Dec 2014 coinciding with the World Soil Day and then submitted to the UNCCD later in the same month. The NAP 2014 contains five thematic areas corresponding with the five operational objectives of the UNCCD's 10 years strategy to address LD: (i) Advocacy & Capacity Building; (ii) Institutional Strengthening & Coordination; (iii) Policy & Legislative; (iv) Research & Knowledge Management; and (v) Support to SLM Technologies.

The activities to curb LD were identified for all stakeholders (by Ministry/ Department/ Division) by the five thematic areas and listed in the NAP 2014. In total there are 88 Action Points listed in the NAP 2014 pertaining to different stakeholders. Therefore the NAP 2014 is a very comprehensive document for combating land degradation containing all the essential parts. With starting of the LDN project, the NAP 2014 was again reviewed and found that it augers very well with the LDN concept.

For implementation of the NAP 2014, there is NAP Monitoring & Coordination Committee (MCC) involving members from 16 Agencies which meets once in 2 years and is responsible for policy & coordination issues. At the lower tier, representatives from each agency are appointed as focal persons and are responsible for implementation of NAP 2014 activities in their Agencies. They submit progress reports to the NAP MCC annually.

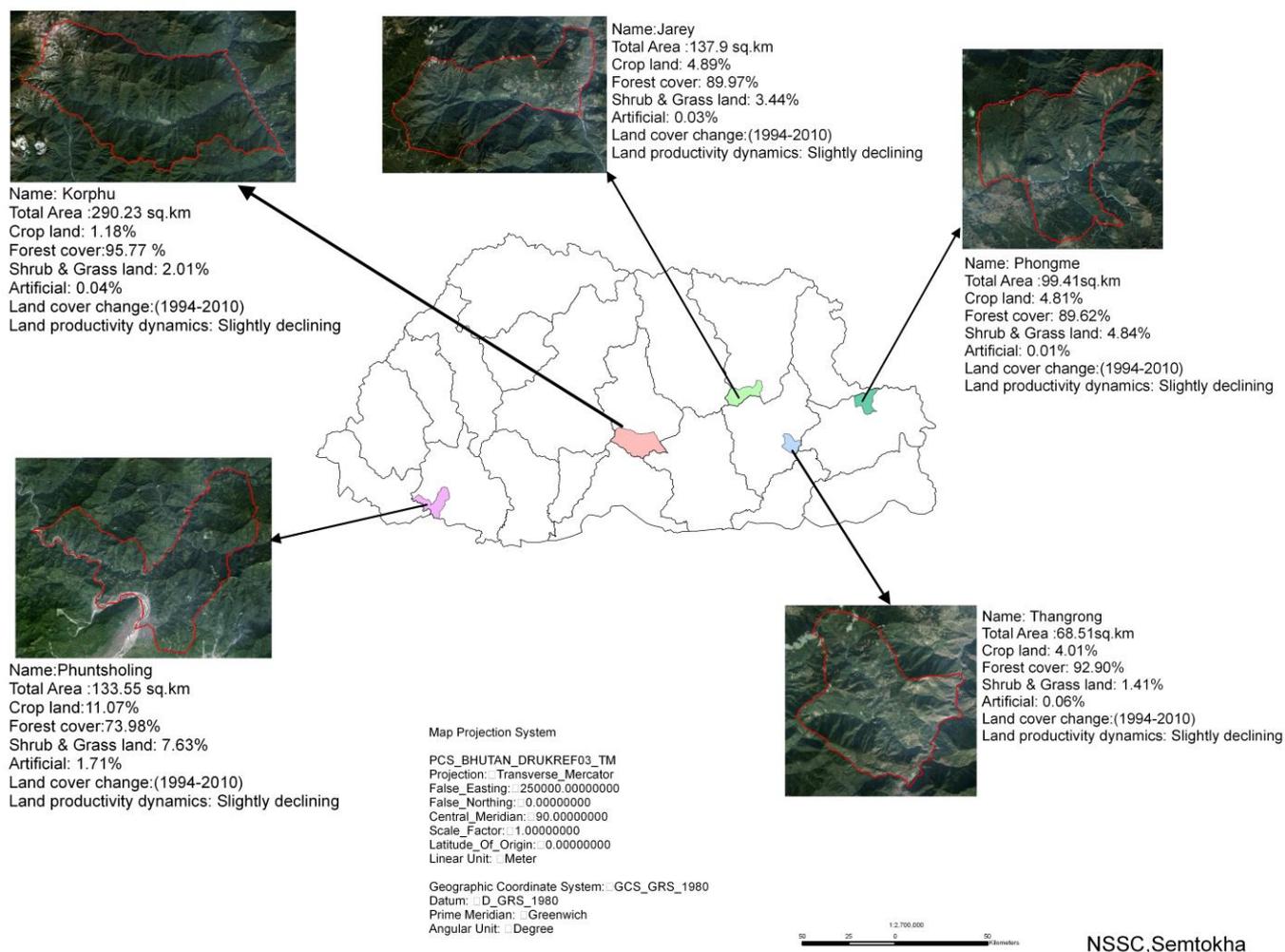
SWOT analysis of the NAP in relation to LDN

The SWOT analysis of the NAP in relation to LDN was done by two groups of the Working Group members of NAP/LDN and separately by the Country Consultant. The three outputs of the SWOT analysis were presented in a plenary and discussed further. The three presentations on SWOT are combined together and given below after incorporating comments and suggestions from the Working Group for NAP/LDN.

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none">• Enabling legal framework/ various acts and policies in place to support LD issues• NAP in line with UNCCD strategy and 11th FYP	<ul style="list-style-type: none">• Weaker implementation of policies/loop holes <p>Implementation of NAP may increase cost of other development projects by having to adhere to terms</p>

<ul style="list-style-type: none"> • Identification of thematic areas & action points for all different stakeholders – comprehensive plan for LD in NAP • NAP activities are all in line with LDN concept • Clear strategies and funding sources to implement the Action Point • Good management of external funds • Some promising innovative funding sources (BTFFEC, PES, REDD+) • NAP can be used as basis to explore funding or to develop project proposals • Identification of all relevant stakeholders 	<p>and conditions of NAP fulfillment</p> <ul style="list-style-type: none"> • Most action points not implemented due to lack of funds • Limited forecasting on natural disaster such as flood/landslide/wind storm • Budget constraints due to budget sharing between various developmental activities • Long & tedious processes for REDD+ • Limited exposure /knowledge of LDN • Poor coordination among stakeholders • Lack of information on indicators
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Include LDN in NAP to attract external funding for LD • Use watershed management approach • Potential to build up from the past experiences and current practices • To include adequate provisions on land use in draft land policy • Way forward for achieving food self-sufficiency through SLM • Platform for strengthening coordination within relevant agencies • Enhance coordination among sectors • More projects in future • Improve coordination amongst national focal points of CBD, UNFCCC, and UNCCD 	<p>THREATS</p> <ul style="list-style-type: none"> • External funds may not be available or easily available • Farmers not adopting SLM technologies due to limited landholding as SLM measures may take some of the land out of production • Increasing priority on infrastructural development (townships, roads, mining) • Limited budget for SLM implementations • Rural-urban migration and resultant urbanization • Economic interest such as pursuing mining and livelihood depending on detrimental activities such as lemon grass oil leading to forest fire • Non-cooperation from stakeholders

5. National Map of Selected LDN Hotspots



6. Optional Section Six

Part 1: Presentation of the LDN national working group and key milestones

Instead of forming a new LDN National Working Group which could take lot of time, the existing NAP National Working Group was requested to function as the LDN Working Group coordinated by the National Soil Service Center (NSSC) under the Ministry of Agriculture and Forests.

The first group meeting took place in mid-March where the group was appraised about the LDN project, reviewed the NAP 2014 document and conducted SWOT analysis of the NAP in relation to the LDN. A second meeting was scheduled towards end of July to verify the national database and to discuss on the LDN sites. However, all members couldn't convene for that meeting. The third meeting took place on 3rd Sep 2015 where the members verified the national database and more importantly, discussed on the Bhutan Country Report to UNCCD.

The composition of the LDN National Working Group of Bhutan is as follows:

- 1 Tenzin Norbu, Survey Engineer, National Land Commission Secretariat, (Public/Govt)
- 2 Dago Tshering, Research Officer, Royal Society for Protection of Nature, (Private Sector/NGO)
- 3 Asta Tamang, PBO, National Biodiversity Center, (Public/Govt)
- 4 Pema Wangda, Sr. Forest Officer, Department of Forests & Park Services, (Public/Govt)
- 5 Ugyen Chopel, Statistician, Department of Hydromet Services, (Public/Govt)
- 6 Tshewang Zangmo, Planning Officer, National Environment Commission Secretariat, (Public/Govt)
- 7 Chhimi Rinzin, Chief Agriculture Officer, Department of Agriculture, MoAF (Public/Govt)
- 8 Choden, Assistant Engineer, Department of Roads, Ministry of Works and Human Settlement (MoWHS), (Public/Govt)
- 9 Sangay Tshering, Geologist, Department of Geology and Mines, Ministry of Economic Affairs, (Public/Govt)
- 10 Sonam Peldon, Asst. Manager, Druk Green Power Corporation, (Public Corporation)
- 11 Sonam Desel, Dy. CEO, MoWHS, (Public/Govt)
- 12 Ugyen M Tenzin, Chief Urban Planner, MoWHS (Public/Govt)
- 13 Sonam Deki, Sr. Planning Officer, Department of Disaster Management, Ministry of Home and Cultural Affairs, (Public/Govt)
- 14 Ashit Chhetri, Planning Officer, Natural Resources Development Corporation Ltd, (Public Corporation)
- 15 Sigyel Dema, Dy.Chief Forest Officer, Department of Forests & Park Services (Public/Govt)

- 16 National Council, Environment Chair Person (Member of Parliament)
- 17 National Assembly, Environment Chair Person (Member of Parliament)
- 18 Dasho Thrompon, Thimphu City Corporation (Municipal Corporation)
- 19 Council for RNR Research of Bhutan, MoAF (Science/Academy)
- 20 Greener Ways (Private Sector/NGO)

Part 2: Who, Where, and When

The national LDN targets are given in Table 2 above. The LDN activities will be implemented by relevant agencies as given below.

LDN Activities	Who	Where	When
Reforestation with native species in open areas Avoid further productivity decline through various means & maintain SOC at 50 ton/ha	DoFPS	Deforested areas	2020-2035
Promote wood substitute products with subsidy and avoid further decline in productivity	DoFPS	Pilot sites	2020-2035
Promote improved pasture Promote improved breeds	DoL	Suitable areas	2020-2030
Implement SLM measures as identified in the NAP Avoid further LD and maintain SOC atleast at 50 ton/ha	DoA/NSSC	5 Pilot sites	2015-2030
RAMSER Framework	WMD	RAMSER sites	2020-2040
Plantation in open areas	Municipal Corporation	Town areas	2020-2040
Restoration/reclamation of degraded areas	DoFPS DoL DoA/NSSC	Affected areas	2020-2040

Note: WMD = Watershed Management Division under DoFPS

The National Soil Service Center (NSSC) under the Department of Agriculture under Ministry of Agriculture and Forests would coordinate the LDN activities as NSSC is the National Focal Point for UNCCD. The implementing agencies would be Department of Forests and Park Services, Department of Livestock, Department of Agriculture, and City Corporations for the various LDN activities.

The activities reflected in realigned NAP 2014 will definitely contribute to LDN targets. About 89 activities are given in realigned NAP 2014 (pp 46-64) segregated by five operational objectives of UNCCD and by different implementing agencies.

Part 3: Legal Regulatory Framework

Generally there is strong policy support for use of land. There are about 15 policies, acts and strategic documents related to land and landuse of which The Land Act of Bhutan 2007 is most relevant. However, it is felt that a well-defined policy perspective on national land use and management would still be very useful. A draft National Land Policy exist, the development of which was coordinated by the National Land Commission.

Despite strong policy support and presence of acts, rules and regulations, it appears that implementation has fallen behind due to lack of adequate law enforcement personnel, ambiguity in institutional mechanisms and lack of technical and financial resources.

There is a weak coordination among the stakeholders in addressing LD problems and issues. The current institutional set up is that NSSC is the National Focal Point for UNCCD but it is

responsible only for agricultural land management as NSSC is under the Department of Agriculture. Therefore NSSC can have only limited influence on other agencies especially those outside the MoAF, which reduces its efficiency to oversee and coordinate SLM across different sectors.

It is clearly stated in the NAP 2014 that “there is an urgency to identify an entity at the national level to take lead in coordinating the land use and land management programs of different sectors within and outside MoAF”. Who should be this “entity” is a question for the decision makers. It could be an upgraded NSSC with a bigger mandate along with the NAP Taskforce from different sectors with separate mandate and other provisions. Another option could be the Watershed Management Division under the Department of Forests and Park Services who already has a coordinating role to develop watershed management plans at the national level and land management is an integral part of watershed management. The third option could be Policy and Planning Division of the MoAF. Whoever is the “entity” it would be important to have representatives from different sectors on board for communication, coordination and implementation of land management plans and activities.

Although land management activities such as terracing and contour bunding started as early as the Third Five Year Plans in the 70s, serious efforts into land management has been on and off along the way until 2005 when the land management campaigns started. Now the land management campaigns are regular features at the district level with support from the NSSC. The MoAF perhaps is the only organization which plans and budgets for SLM activities annually. But even within the MoAF budget allocation for SLM activities is comparatively low – only 1% of the budget of RNR in the 11th Five Year Plan is for SLM. This may be due to other priorities such as farm roads gaining more importance.

Part 4: LDN Monitoring, Reporting, Evaluation and Verification System

The existing monitoring and evaluation system of NAP shall be used to monitor, verify and evaluate LDN activities. A two-tier committee has been formed for the NAP which can also be used for the LDN. The high level NAP monitoring and coordination committee consists of 16 members while the lower Working Group has 18 members.

The high level committee would meet atleast once in two years and is responsible for any policy and coordination issues. The Working Group members are responsible for implementation of the NAP/LDN activities. They would submit annual progress report to the higher level committee.

The LDN activities would also be monitored and evaluated by the Royal Audit Authority both for financial and physical progress just like any other activities for each agency.

Part 5: Budget and Financing Plan

Internal sources of funding

The Department of National Budget (under the Ministry of Finance) is responsible for allocation of budget to different sectors and agencies and oversees budget processes. It examines, coordinates and approves requests for funds. The DNB also reviews the annual funding request and interacts with budgetary agencies for discussion and negotiation. The NAP 2014 describes the budget preparation process and its schedule (pp 71-72).

The total budget allocated to MoAF varied between 9-14% of the country's total budget from 2008-2014. The actual figures ranged from Nu.3392.24 to Nu.5362.92 million for the 2008 to 2014. Lack of fund has been recognized as a major constraint for SLM but a bigger concern is the inability to use the allocated budget. According to NAP 2014, looking at MoAF's budget from 2003-2007, the actual expenditures were consistently below the allocated budget with utilization rate of 56-70% overall and for capital component is below 50%. This is a major concern and calls for addressing the causes for such under-utilization of budgets. The causes for under-utilization of budgets are identified as late approval of the appropriation bill by Parliament; delays in tendering process; non-compliance by contractors; technical capacity constraints; overestimated and unrealistic budget proposals.

External sources of funding

The country has relied heavily on external funds to finance its development activities. From 1st to the 10th FYP, external resource percent to outlay remained almost above 50%. Only for the 11th FYP (2013-2018) has it reduced to 27.49%. In terms of actual figures, external funding has been consistently increasing from the 1st to the 10th FYP (Nu.174.7 to 72,684.16 million) with a slight decrease in the 11th FYP (Nu.58,638.7 million) (NAP 2014).

The Government of India is the main source of external funding to Bhutan starting from the 1st FYP (1961-1966) when the country first started its development programs. For the 11th FYP, there are eight bilateral donor countries pledging Nu.53,741.04 million and multilateral agencies such as ADB, EU, GEF, IFAD, UN and WB plus some NGOs and Foundations. The total fund committed by multilateral agencies is Nu.14,519.53 million for the 11th FYP. The policy of the country is to meet the recurrent expenditures through internal revenue and use external funding only for capital works. The preferred choice of assistance is in the form of grants and where grants are not available, loans are sought for high priority programs with commercial potential.

Besides financial resources, technical assistance has been an important aid component and the country will continue to seek technical assistance where required. The broad strategy of the country has been to concentrate the efforts of donors in particular fields or sectors where their experience or technology has been preferred within the context of Bhutan's development.

As external funds forms a substantial component of the country's financing, the government has put in place institutions and systems to ensure effective coordination and management of external resources. This has resulted in high accountability of the external resources. In the near future, the country wants to shift from project mode to program financing and gradually to budget support modality. This strategy would provide both the parties to focus on larger goals and objectives and benefit from economies of scale and scope.

The NAP 2014 reflects a list of potential donors for SLM and also has recommendations for improving resource mobilization from external donors (pp. 81-82).

Innovative sources of funding

Innovative sources of financing mechanisms are non-traditional funding sources aimed to supplement traditional funding for development. The innovative funding mechanisms are required to finance long term programs and are sustainable forms of funding in the absence of donors (bilateral and multilateral). The NAP 2014 lists a number of such innovative funding mechanisms which could be applicable to Bhutan (Air-ticket tax, Tackling tax evasion, Carbon tax – tax on carbon content of fuels, Global lottery or global premium bond, Assigned Amount Unit Auction – emissions allowances). Some of the innovative funding mechanisms which are more relevant to Bhutan are:

i) Environmental Trust Fund

Bhutan Trust Fund for Environmental Conservation (BT FEC) was established in 1993 with a Royal Charter and with initial capital of US\$ 20 million. Currently the capital has reached almost US\$ 40 million from which the interest generated is annually given as grants to various agencies and NGOs (based on competitive proposal submission) for conservation programs.

ii) Environmental Revolving Fund (ERF)

Currently there is no ERF in the country and NAP 2014 suggests to set up one through collecting nominal fees from tourists. This might be bit tricky as tourists are already paying royalty of \$65 per day per tourists and as tariffs are already high. Rather than from tourists, it would be viable through corporations such as Druk Green Power Corporation and Mining companies and also other businesses and individuals.

iii) Watershed Management Fund

Hydropower is the backbone of the country and the country has embarked on an ambitious plan to develop 10,000 MW of hydropower potential by 2020 in partnership with the Government of India. Realizing the strong link between watershed management in the upper water sources and sustainable hydropower generation, the Bhutan Sustainable Hydropower Development Policy 2008 stipulates to provide 1% of the royalty from hydropower generation for watershed management. The fund should be used for the intended purpose. Perhaps it would make greater sense to merge the watershed management fund with the ERF.

iv) Payment for environmental services (PES)

Payment for Environmental Services is an incentive-based direct approach to conservation of natural resources whereby service providers receive payments that are conditional on acceptable conservation performance. It is based on the beneficiary-pays rather than the polluter-pays principle. The core principles of PES schemes are that those who provide environmental services (ES) should be rewarded for doing so, and those who use the ES should pay for their provision. PES represents a form of accounting for the value of ES and ensuring adequate investment in their maintenance.

Among the innovative funding mechanisms, PES has a good potential for Bhutan as there is strong policy support for PES. The PES project implemented by Watershed Management Division under the DoFPS has developed a PES Framework and also PES Field Guide for establishment and implementation of PES schemes in the field. The project also has started two PES schemes in the country (see Box 1 and 2 – for detailed reports, contact Watershed Management Division). In future other PES on biodiversity conservation, scenic beauty and PES with hydropower shall be explored. One main activity for PES could be SLM be it for drinking water protection or water for hydropower or for irrigation purpose.

The other innovative funding mechanisms (as mentioned in NAP 2014) are Carbon Market, Clean Development Mechanism, Reduced Emissions from Degradation and Deforestation, and Voluntary Carbon Markets. These mechanisms are all related to carbon and are not only complex but time consuming processes are involved. However, the country is preparing a REDD+ readiness report with support from UN REDD.

Foreign Direct Investment is a means to bring in hard currency to support investment projects through private public partnership (PPP). The MoAF has started hazelnut plantations in the eastern part of the country and is being scaled up to other parts of the country. Marginal land is being used for the plantations thus promoting SLM.

Considering donor fatigue and graduation of the country from LDC status to middle income group and limited scope of increasing internal revenue, it is prudent to develop innovative financial mechanisms to support SLM in the long run.

List of members of the LDN National Working Group of Bhutan

Community	Name	Functional title	Institution
Government	Tenzin Norbu	Survey Engineer	National Land Commission Secretariat
Civil Society	Dago Tshering	Research Officer	Royal Society for Protection of Nature
Government	Asta Tamang	Planning Biodiversity Officer	National Biodiversity Officer
Government	Pema Wangda	Sr. Forest Officer	Department of Livestock
Government	Ugyen Chophel	Statistician	Department of Hydromet Services
Government	Tshewang Zangmo	Planning Officer	National Environment Commission Secretariat
Government	Chhimi Rinzin	Chief Agriculture Officer	Department of Agriculture
Government	Choden	Assistant Engineer	Department of Road
Government	Sangay Tshering	Geologist	Department of Geology and Mines
Government	Sonam Peldon	Assistant Manager	Druk Green Power Corporation
Government	Sonam Desel	Deputy CEO	Ministry of Works and Human Settlement
Government	Ugyen M Tenzin	Chief Urban Planner	Ministry of Works and Human Settlement
Government	Sonam Deki	Senior Planning Officer	Department of Disaster Management
Business and Industry	Ashit Chhetri	Planning Officer	Natural Resources Development Corporation Ltd
Government	Sigyel Dema	Deputy Chief Forest Officer	Department of Forests & Park Services
Civil Society	Kinlay Dorji	Mayor	Thimphu City Corporation
Science	Kailash Pradhan	Chief Research Officer	Council of RNR Research of Bhutan
Government	Haka Drukpa	SSF&PNM Officer	National Soil Services Centre