

# **Forest Management and Conservation**

(District Forest Office- Bara, Chitwan, Nawalparasi, and Rupandehi)

## **Final Report of Environment Audit, 2016 (2072)**

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**Office of the Auditor General, Nepal  
Kathamandu, Nepal.**

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**Introduction**

1. **Background** - Forest is one of important renewable national resources. Effective management and proper use of this resource could significantly contribute in economic and social development of a country, protection of environment and availability of essential goods and services to the majority of people residing in remote area. If forest resources are not properly managed, many environment problems may emerge caused by the degradation of forest resources. Sustainable and scientific management of forests are imperative to address the concerns of climate change and REDD (Reducing Emissions from Deforestation and Forest Degradation). Existing Forest Policy and laws aim to achieve economic and social development through implementation of developed concepts in sustainable forest management, environment protection, bio-diversity and climate change. District Forest Offices have been established to achieve the specific objectives through forest management and conservation. As per the classification of Department of Forests, District Forest Offices, Bara and Nawalparasi lie in 'A(KA)' category, and District Forest Offices- Chitwan and Rupandehi lie in 'B (KHA)' category.

**Key Performance Indicator (KPI)**

  - Systematic demarcation of forest
  - Removing Forest Encroachment
  - Implementation of Agreement
  - Protection and monitoring of afforestation
  - Controlling grazing and forest fire
  - Controlling export smuggling
  - Scientific forest management
  
2. **Rationale for Environment Audit** - Despite of efforts made for forest management and conservation, several environmental problems have been emerging as a result of continued degradation of forest areas due to various reasons inclusive of unclear marking of forests, forest encroachments, forest fire, export smugglings and use of forest lands in other purposes. This topic has been selected for environment audit in view of need to report and provide recommendations on overcoming the current environment problems through

studying and analyzing the effectiveness of forest management and conservation.

3. **Policy Provisions** - Forest Policy 2014 (2071) aims to maintain balance between the improvement in livelihood of poor people and ecology system through the generation of employment and increasing income with due attention to protection, preservation and utilization of forests, vegetation, herbs, wildlife, conserved area, bio-diversity and watersheds. The following policies have been adopted to achieve the above mentioned objectives:
  - Increase the productivity of forest sector and the production of forest products through sustainable forest management,
  - Ensure lawful distribution of benefits receivable from environmental service like: biodiversity and conservation of resources,
  - Implement integrated protection and management for watershed areas to raise the productivity of land through the preservation of water resources and land areas,
  - Make lawful allocation of benefits by making community-managed forests (inclusive of community, leaseholds, buffer-zone community, protected, religious forests) ecologically, economically and socially efficient,
  - Value add and generate green employment through promotion of forestry-based entrepreneurship, diversification and marketing of products involving private sector in forest development and extension,
  - Undertake measures to mitigate adverse effects of climate change and improve favorable environment, and
  - Enhance management capability for the promotion of good governance, inclusiveness, and social justice in forestry sector.
4. **Legal Provision** - Forest Act, 1993 (2049) and Forest Rules 1995 (2051) have been implemented to improve the forest management, development, conservation and proper utilization of forest products. Scientific Forest Management Guidelines, 2014 (2071) has also been prepared and implemented to bring consistency in application of provisions mentioned in Forest Act and Rules through making provisions easily and clearly understandable. Likewise, Environment Protection Act, 1997 (2053) and

Rules, 1998 (2054), have provided the provisions for preliminary environment assessment and environmental impact assessment.

5. **Objective and Target** -In Five-year Forest Management Work Plans prepared by District Forest Offices, targets have been set to support in economic development through sustainable forest management ensuring access to all stakeholders of the district on forest resources. Objectives set by these offices include prevention and control forest fire, export smuggling of forest products; removing encroachment of forests and prevent from further encroachment; improving the status of forest category through scientific management (protection and promotion) of forest; increasing greenery through tree plantation in waste or uncultivated land, river beds and forest areas in districts having lower status; making arrangements for the supply of timber & woods within district; generating revenues from collection, sale or distribution of dry or fallen timber & woods; and making arrangements for systematic collection of stone, pebbles, and sand etc. The objectives also encompass preparing local and district level plan and conducting program to address the queries related to climate change and REDD.
6. **Financial Status** - Status of the last three years annual budget and expenditure of the District Forest Offices included in this audit scope are given in the following Table 1:-

**Table No.1: Annual Budget and Expenditure**

(Rs. in Thousands)

District Forest Office	2012/13 (2069/70)		2013/14 (2070/71)		2014/15 (2071/72)	
	Budget	Expenditure	Budget	Expenditure	Budget	Expenditure
Bara	67,223	57,700	90,570	81,211	108,403	107,086
Chitwan	40,978	40,609	76,094	64,557	83,593	751,204
Nawalparasi	53,868	50,106	80,825	67,690	93,274	88,269
Rupandehi	41,159	40,775	67,837	59,860	84,629	69,390
<b>Total</b>	<b>203,228</b>	<b>179,190</b>	<b>315,326</b>	<b>273,318</b>	<b>369,899</b>	<b>1,015,949</b>

Source: Financial Statement of District Forest Offices

- 6.1. Main revenue sources of District Forest Offices are auction and sale of timber, firewoods stone, pebbles, sand and herbs existed in the forest areas and monies receivable from penalty, fine, forfeiture and lease. The revenue incomes generated by above mentioned four District Forest Offices in previous 3 years are given in the following Table 2:-

**Table No.2: Generation of Revenue Income**

District Forest Office	(Rs.in Thousands)		
	2012/13 (2069/70)	2013/14 (2070/71)	2014/15 (2071/72)
Bara	137,196	67,000	51,545
Chitwan	41,998	25,321	31,340
Nawalparasi	31,750	39,782	15,874
Rupandehi	13,451	6,427	33,862
<b>Total</b>	<b>224,395</b>	<b>138,530</b>	<b>132,621</b>

*Source:* Financial Statements of District Forest Offices

## Part -2 : Audit Objective, Scope and Methodology

7. **Objective** - The audit objective is to assess whether the activities undertaken by District Forest Office- Bara, Chitwan, Nawalparasi, and Rupandehi in the area of forest management and conservation are performed efficiently and effectively on the basis of environmental aspects and report findings thereon along with suggestions.
8. **Scope** - The audit scope includes District Forest Offices- Bara, Chitwan, Nawalparasi and Rupandehi. Audit has covered the forest conservation and management activities of the offices conducted during the 3 year period between 2012/13 (2069/70) and 2014/15 (2071/72). Pursuant to matters included in periodic forest plans of the concerned district forest offices, the audit scope has been extended to cover the facts before the period 2012/13 (2069/70) as per necessity.

9. **Methodology** -Subject matters of this audit risk areas have been selected on the basis of Forest Act, 1993 (2049) and Forest Rules 1995 (2051), work plans and publications of the selected entities, understanding entities' business, evaluation reports, and internal controls assessment and risks identification & assessment. Based on identified risks, matters of potential significance have been determined, and for justifying the matters of study areas, audit has carried out inquiries/discussions with the related stakeholders and field observations. For further assurance, facts and data have been collected through questionnaires and necessary analytical procedures have also been followed. This report has been prepared by performing field observations, study/ analysis of records, and using computation & comparison methods. For this audit purpose, primarily process-oriented as well as result-oriented methodologies have been adopted.
10. **Limitations**- This report has been prepared on the basis of information, records and description received from secondary source. This audit may have limitations of not having adequate analysis on environmental issues because of non-availability of necessary information, wide coverage of activities, availability of limited time and not taking the expert's service of relevant field in course of the audit.

### **Section- 3 Audit Observations**

- **Positive Aspect** - Positive aspects of forest management are formulation and implementation of periodic work plans for district forest management, initiative taken for scientific forest management, regular patrolling for control of forest encroachment and export smugglings of forest resources, and afforestation.
- **Problems and Challenges** - Unclear forest demarcation, encroachment of forests, use of forest land for other purposes, forest fire, open grazing, export smugglings, lack of preservation of plantation work, implementation of scientific forest management have appeared as major problems and challenges.

- **Areas Requiring Improvement** - Areas that required to consider for improvements are identifying/managing forest boundaries, removing forest encroachments, controlling forests fire, managing grazing, controlling export smugglings of forest products, and implementing scientific forest management.

11. **Work Operation Process-** District Forest Offices have important contribution in assisting environmental conservation through forest management and protection. While analyzing the operational processes of the forest offices (as shown in Annex-1 operation segment model), the following matters have been observed:-

- Each office has performed forest management and protection works with the approval periodic forest work plan,
- Forest conservation works have been undertaken by making forest boundary management in accordance with annual program,
- Regular patrolling have been carried out to control export smuggling of forest resources and forest encroachment, and have also made the attempt to remove previous encroachments,
- Conservation of forests have been done by making plantation in uncultivated land,
- While providing forests or land for various purposes, agreements have been made with the provisions of requiring replacement plantation and receiving alternative lands,
- Programs have been implemented to control the open grazing and forest fire, and
- Scientific forest management has been initiated in partnership forest area.

In order to make effective the work operations process, the operating processes along with strategic management concerning work flow chart as per organization structure, Standard Operating Procedure (SOP), and input-output should be properly managed.

12. **Demarcation of Forest-** Section 3 of Forest Act, 1993 (2049) provides that a District Forest Officer may mark the boundaries of national forest of concerned district by demarcating boundaries. Section 2 (b) of same Act defines forest boundary as 'a mark indicated in the map prepared by surveying

and measuring the lands pursuant to prevailing laws' and Section 49(m) prohibits to remove, alter, change, erase or damage to the forest boundaries. Pursuant to demarcating forest boundaries, programs have been generally included in work plans of concerned District Forest Offices. Major observations relating to this are given below:-

12.1. The office record of Nawalparasi district shows approximately 300 KM of forest boundary has been demarcated since fiscal year 1973/74 (2030/31) to present date. Out of them, the forest boundaries already encroached by local people are required to be repaired. There have been situations that the maintenance and reinstatement works of old, disappeared or erased boundaries are to be undertaken through this program and the forests area are to be demarcated by identifying protected and productive forest areas. The boundaries and range post adjoined to Chitwan National Park's buffer zone and the boundaries of Ilaka (Area) Forest Office's work jurisdiction are also to be reinstated and re-determined.<sup>1</sup>

12.2. Although forest demarcations were performed adequately in Rupandehi District in past years, no boundary pillars have existed at present in any of those demarcated places. Presently, the Department of Forests has, however, not given continuity to forest demarcation works. To protect forests, the government has adopted the policy of converting forests into community forests that lying near settlements area and new encroachments

**Problem and Challenge**

- Unclear demarcation of forest,
- Forest encroachment,
- Other use of forest land,
- Forest fire,
- Grazing
- Export smugglings
- Lack of plantation & conservation,
- Absence of scientific forest management

have not been noticed in such community forests area. However, some of encroached areas were included while transferring forests to the communities. It is because of this reason, the converted community forests also have encroached forest areas. In view of the forest boundary becoming a complex problem, forest demarcation will be conducted on the basis of preferences along with mapping of forest areas using GIS technology, if budget, program

<sup>1</sup>District Forest Office, Nawalparasi- Five-year Forest Management Work plan {2013/14 (2070/71) to 2017/18 (2074/75)} Page no.27 and 28

and political commitment and support are received with clarity of policies during the work plan period.<sup>2</sup>

- 12.3. Forest boundaries demarcated previously in Bara district are now not in workable condition due to lack of proper repair and maintenance. Since 1992/93 (2049/50) onwards, no demarcating work of forest boundary is undertaken in the district.<sup>3</sup> Chitwan office has given any clarification to forest boundary demarcation citing that old record have not been found. The office has acknowledged that it has no program for demarcation at present and old data have not been found, and updating of forests demarcation is essential with use of GPS technology.
- 12.4. All four District Forest Offices have stated that they have constructed necessary wooden demarcation pillars and concrete reference pillars at interval of each 1 KM for the demarcation of forests. When conducted field observations of Varandavar area of Chitwan and Saljhandi area of Rupandehi in course of audit, the remainders of such boundaries are found in disappeared condition in most of places. In the places where such boundaries have existed, they are founded in damaged condition with barbed wire broken everywhere. The remains of reference pillars, that was constructed at a interval of 1 Km, are not noticeable. When questioned with the employees of Sector / Area Forest Offices of the concerned districts, they have mentioned that such pillars have not been noticed in their forests area.
- 12.5. All four District Forest Offices have not conducted mapping work of the national forests by surveying forest land as per Section 2(b) of Forest Act 2093 (2049). The work has not been performed due to lack of resources, clear policy & rule and programs. It appears this may affect in the overall process of forest conservation. It is observed that the District Forest Offices are not in a position to manage the forest boundaries properly due to reason that forest boundaries constructed in past have become old and the offices are also not able to implement the maintenance programs in subsequent years. In addition, the demarcation of forest boundaries have also been affected as a result of non-

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<sup>2</sup>District Forest Office, Rupandehi- Five-year Forest Management Work plan {2013 (2070) to 2018 (2075)} Page no.39

<sup>3</sup>District Forest Office, Bara- Five-year Forest Management Work plan {2013/14(2070/71) to 2017/18 (2074/75)}

receipt of budget to the District Forest Offices in accordance with their approved forest work plan.

- 12.6. Forest is common resources to all, but the protection of forests is becoming complex as it relates to human value, norms and ethics. As such, it will be difficult to protect forest boundaries and safeguard of forest resources only with the efforts of District Forest Offices. It is because of this reason, forest areas have been decreasing day by day. Since forest area of all four districts are segregated by East-West Highway and side area and central courtyard land of the Highway are becoming commercially significance, there has been rise in number of open grazing, export smuggling of forest products, forest area encroachments and boundary disputes. Protection of forests has been affected in absence of clear and strong boundary line to demarcate between forest area and cultivated area. It appears that the environment will also be affected with the decrease in the forest areas.
- 12.7. Overall boundary lines of forests of the districts should be re-determined by identifying the demarcated forest boundaries and unmarked boundaries, conducting survey with the use of GPS technology, provisioning necessary annual budget & program sufficient to manage such forest boundary demarcation, and constructing permanent pillars to reinstate/repair damaged or broken pillars.
13. **Encroachment of Forest-** Section 49(a) of Forest Act, 2093 (1949) provides that no person shall use the forest area land to deforest, plough, dig or cultivate or construct house or hut. Section 50(a) of the same Act has provisioned penalty or punishment for the person committing such offences. As per details received from the concerned forest offices, it is mentioned that altogether 13 thousand 342 hectares of forest area land have been encroached in the 4 districts as shown in Table No.3 given below:

**Table No. 3: Description related to Forest Encroachments**

<b>District Forest office</b>	<b>Area in Hectre</b>
Bara	1,194
Chitwan	1,366
Nawalparasi	2,436
Rupandehi	8,346

*Source:* Five-year Forest Management Work Plans of District Forest Offices

Major observations relating to this are given below:

- 13.1. Areas of Nawalparasi district inside the Lokmarga (People's Highway) are commonly in the rush of individual encroachment and the areas besides the Lokmarga are being encroached by institutions like schools, colleges, hospitals etc. Pursuant to encroachment controls, the practice of giving political patronage to the encroachers has been a major problem.<sup>4</sup> Forest encroachment problems have been rising because of people's migration from mountain to tarai area in search of getting appropriate education, health facilities and employment, and tendency of rural areas becoming urbanization. Areas of this district (Chitwan) inside the Lokmarga are commonly in the rush of individual encroachment and the adjoining areas of the Lokmarga are being encroached by institutions like schools, colleges, hospitals etc. Pursuant to encroachment controls, the practice of giving political patronage to encroachers has been a major problem.<sup>5</sup> Since all encroachments were made many years earlier, permanent big physical infrastructures have already been constructed, and all government services have already been easily available in such places, removing encroachers from the encroached places is becoming a difficult task. In such situation, in accordance with Government of Nepal's approved Encroachment Control Strategy 2011(2068), efforts will be made to control the forest encroachments of the district through cooperation and coordination of all stakeholders.<sup>6</sup>
- 13.2. Forest areas of the districts have been encroached because of several causes like; political transition, natural calamities (floods), migration, landless people (sukumbasi) problems. The distribution of landlord certificates of encroached land to the same persons residing in such encroached areas as per the decision of the commission constituted time to time, has built up the people beliefs that certificates of such encroached lands will also be distributed in future and this

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<sup>4</sup>District Forest Office, Nawalparasi- Five-year Forest Management Work plan {2013/14 (2070/71) to 2017/18 (2074/75)} page no.27

<sup>5</sup>District Forest Office, Chitwan- Five-year Forest Management Work plan {2013/14 (2070/71) to 2017/18 (2074/75)} page no.32

<sup>6</sup>District Forest Office, Rupandehi- Five-year Forest Management Work plan {2013 (2070) to 2018 (2075)} page no.39

has encouraged to people committing the forest encroachments. Likewise, it has been acknowledged during discussions with stakeholders that lack of clear responsibility for removing highway/roads sides and un-systematic roads construction by District Development Committees/Village Development Committees' with use of bull-dozers have also provoked in forest encroachments. Forest encroachments have caused the decline in forest area and depletion in forest products. Since encroachers have not been removed from the encroached areas by taking actions as per the Forest Act's provisions, more people are provoked to commit encroachment of forest lands to cultivate and construct house/huts. The following Picture No. 1 and Picture No. 2 show the status of encroached area of Chitwan and Bara district:-

*Picture No.1*



*Picture No.2*



*Cultivated area of Simaldhap of Chitwan and Ratanpuri of Bara after encroachment of forests*

- 13.3. In the districts, causes like- political transition, natural calamities, migration, landless problems have contributed in encroachment of forests. There has been difficulty in removing encroachers from the encroached places due to olden encroachments, construction of permanent large physical infrastructures, and the availability of all government services in encroached areas. In view of the difficulty, Encroachment Control Strategy, 2011(2068) has been promugated. However, the Strategy has become ineffective because of failure to receive unanimous acceptance in legislative-Parliament for the tabled motion and difficulty in receiving unanimous acceptance at local level. Consequently, the forest encroachments control effort is not becoming effective. Forest encroachments tend to decrease forest area and may also defuse the positive effect of forests on environment. As such, on the basis of all political parties consensus, the encroached areas should be cleared and

previous forest boundaries demarcation should be reinstated in accordance with the Encroachment Control Strategy, 2068.

14. **Use of Forest Land :** As per the prevailing legal provision, while providing forest area land for other purposes, there should be arrangements for mitigating the effect on environment after handover land and should also provide the provision for complying with the agreement. In accordance with the official records maintained by the Offices, the following four District Forest Offices selected in this audit, have provided 1 thousand 759 hectares of land for other purposes as given Table No. 4:-

**Table No.4: Forest Land provided for other purposes**

<b>Name of Project</b>	<b>Handover Year</b>	<b>Area in Hectre</b>
<i>Bara</i>		
Construction of 132 KV sub-station of Nepal Electricity Authority, Pathlaiya	2008 (2065)	2.00
<i>Chitwan</i>		
Hetauda-Bardaghat 220 KV Electricity Transmission Line Project-Second phase	2011 (2069)	5.79
Hetauda-Bardaghat 220 KV Electricity Transmission Line Project- New Bharatpur Sub-Station Construction	2010 (2068)	10.20
Mankamana Cable Car Pvt. Ltd	2012 (2070)	4.96
Bharatpur Sub-Metropolitan	2010 (2068)	9.90
<i>Nawalparasi</i>		
Hetauda-Bardaghat 220 KV Electricity Transmission Line Project-Second phase (Hetauda-Bardaghat)	2011 (2069)	187.39
Navajagaran Multiple Campus, Tamasariya	2013 (2071)	0.75
Tamasariya V.D.C.	2013 (2071)	0.4
<i>Rupandehi</i>		
Electricity Sub-station Construction and Operation	2002 (2060)	0.5
Lubmini Cable Car	2004	0.2

	(2061)	
Butwal Pavilion (Mandap) Construction	2006	11.25
	(2063)	
Integrated Military Training Center Construction and Operation	2009	1502.3
	(2066)	
33 KV Industrial Fidder Charge Construction	2011	1.169
	(2068)	
Korea-Nepal Institute of Technology	2008	6.3
	(2065)	
Cotton Factory	1992	1.4
	(2049)	
Establishment of Riot Control Troop (Gana)	2011	10.0
	(2068)	
Construction of Butwal Municipality landfill site	2011	4.84
	(2068)	
<b>Total</b>		<b>1759.349</b>

*Source:* Concerned District Forest Offices

Major observations pertaining to this are given below:-

- 14.1. Pursuant to Hetauda-Bardaghat 220 KV Electricity Transmission Line Construction Project- Second phase (Bharatpur-Bardaghat), an agreement was entered between Department of Forest and Nepal Electricity Authority on 2012/01/13 (2068 /09/29), that has authorized the project to use of forest area land and harvesting trees. However, the following works mentioned in the agreement have not been accomplished:-
  - 14.1.1. Section 3 of the agreement provides that the environment protection and damage mitigation measures that suggested in Environment Impact Assessment (EIA) Report and also approved by project's decision dated 2011/12/15 (2068/08/29), should be mandatorily complied; environment audit should be mandatorily conducted within 1 month of implementation of the project and the report of such audit should be submitted to the Department and Ministry; and the concerned project and district forest office should jointly carry out periodic monitoring concerning the matter that whether the project has followed the environment damage mitigation measures and such monitoring report should be submitted to the Ministry, Regional Forest

Directorate and the Department. However, the works mentioned in the agreement have not been carried out.

- 14.1.2. Section 6 of the agreement mentions that altogether 215 hectares of land (7 hectares of Chitwan and 208 hectares of Nawalparasi) including 194 hectares land to be used by the project and 21 hectares land requiring new plantation at the rate of 1:2 ratio as a compensation of 16 thousand 257 trees to be harvested, should be carried out plantation with the appropriate plants suitable to local climate at project's own cost in the places as specified by the District Forest Office along with the preparation of the work plan. It states that such planted trees should be handed over to the concerned District Forest Office by taking care & making protection works up to 5 years. The agreement further states that if the project fails to carry out the specified works, the amount as provided in cost estimate should be compensated to the concerned District Forest Office. On scrutiny of office's record, it has been revealed that 270 thousand plants in 2013/14 (2070/71) and 130 thousand plants in 2014/15 (2071/72) were produced from the amount received from the project in accordance with the later provisions, however, such produced plants were distributed without using in specified area and outstanding plants were kept in stock. This clearly shows that the works specified in the agreement have not been carried out. Nawalparasi district office has received Rs. 9 million from Nepal Electricity Authority during this year and using the received money, it has planted 61 hectares of land of various places along with 24 hectares of Jyotikunja Community Forest and 9 hectares of Jana Kalyayan Community Forest. For the rest of works, no money has been received up to current year audit period.
- 14.1.3. Section 7 of the agreement has provided that the project, on recommendation of District Forest Office, should purchase and handover the 3.28 hectares of private lands (consisting of 0.11 hectare of Chitwan and 3.17 hectares of Nawalparasi) in the name of Government of Nepal within one year equivalent to adjoining forest areas occupied by the physical structures of towers as mentioned in the project's submitted letter dated 2012/05/03 (2069/01/21), however, the specified handover work has not been yet accomplished.
- 14.1.4. In accordance with Section 12 of the agreement, the project is required to submit a progress statement on status of agreement implementation, activities

undertaken in the forest area that received for use, and annual monitoring report on environment conservation management to District Forest Offices, Department of Forest and Regional Forest Directorate within 2 months of end of every fiscal year. But, the reporting works have not been accomplished by the project.

14.2. Pursuant to the construction of New Bharatpur Transmission Line of Hetauda-Bardaghat 220 KV Electricity Transmission Line Project, an agreement was signed between Department of Forest and Nepal Electricity Authority on 2012/03/02(2068/11/19) authorizing the project to use forest area land and harvesting trees. The following provisions mentioned in the agreement have not been accomplished:-

14.2.1. Section 2 of the agreement provides that the environment conservation and damage mitigation measures as suggested in approved Environment Impact Assessment (EIA) Report dated 2008/12/30 (2064/09/15) and Supplementary Environment Impact Assessment Report dated 2011/01/27 (2067/10/13) should be mandatorily complied; the environment audit as mentioned in the report should be mandatorily conducted within 1 month of implementation of the project and the report of such audit should be submitted to the Department and Ministry; and the concerned project and district forest office should jointly carry out monitoring periodically concerning the matter that whether the project has followed the environment damage mitigation measures and such monitoring report should be submitted to the Ministry, Regional Forest Directorate and the Department. However, the works mentioned in the agreement have not been accomplished.

14.2.2. Section 6 of the agreement provides that altogether 25 hectares of land including 10.2 hectares land to be used by the project and 14.8 hectares land requiring replacement (14.8 hectares land required for planting 23 thousand 850 plants as a replacement of 954 trees to be harvested -at the rate of multiplication by 25 for each tree harvested), should be carried out plantation with the appropriate plants suitable to local climate at project's own cost in the places as specified by the District Forest Office along with the preparation of the work plan, and such planted land should be handed over to the concerned District Forest Office by taking care & protection of plants up to 5 years. The agreement further states that if the project fails to carry out the stated works,

the amount as provided in cost estimate should be compensated to the concerned District Forest Office and the District Forest Office with the amount will undertake the plantation and protection works. In the condition the District Forest Office fails to avail the required land for afforestation, Department of Forest will coordinate to avail the land area of neighboring district or the encroached land of Sagarnath Forest Development Project for the afforestation. But, the afforestation works as provisioned in the above section have not been carried out.

- 14.2.3. Section 7 of the agreement has provided that the project, on recommendation of District Forest Office-Chitwan, should purchase and handover the private lands in the name of District Forest Office within 3 months equivalent to adjoining 3.02 hectares forest land occupied by the physical structures of towers, as mentioned in the project's submitted letter dated 2012/02/21 (2068/11/09), however, the handover work has not been carried out. Likewise, section no.11 of the agreement states that the project is required to submit a progress statement on status of agreement implementation, activities undertaken in the forest area that received for use, and annual monitoring report on management of environment conservation to the District Forest Offices, Department of Forest and Regional Forest Directorate within 2 months of end of every fiscal year. But, these works have not been carried out by the project.
- 14.3. Pursuant to the construction of land field site for the waste management of Bharatpur Municipality, an agreement was signed between Department of Forest and Bharatpur Municipality on 2012/03/05 (2068/11/22) authorizing the municipality to use forest area land. The following provisions mentioned in the agreement have not been complied:-
  - 14.3.1. Section 3 of the agreement provides that environment conservation and damage mitigation measures that suggested in Environment Impact Assessment Report as approved by Ministry of Local Development on 2010/02/21 (2066/11/09), should be mandatorily complied and should also submit a report to the Ministry, Regional Forest Directorate and the Department by carrying out joint monitoring concerning the matter that whether the project has followed the environment damage mitigation measures and has implemented environment management plan. However, the

reporting/monitoring work mentioned in the agreement has not been accomplished.

- 14.3.2. Section 6 of the agreement provides that as a compensation of 9.9 hectares of land to be used by the project, it should carry out afforestation with the appropriate plants suitable to local climate at municipality's own cost in the places as specified by the District Forest Office along with the preparation of a work plan, and should hand over to the concerned District Forest Office taking care & protection of plants up to 5 years. But, the afforestation work as per the provision of agreement has not been carried out.
- 14.3.3. Section 7 of the agreement has provided that as a compensation of 9.9 hectares of forest area to be used as land field site, the municipality should purchase equivalent private land adjoined to the forest in the name of District Forest Office within 3 months and handed over to the forest office. However, the District Forest Office has not yet received such land in accordance with the provision of the agreement.
- 14.4. Section 5 of the agreement signed between Department of Forest and Tamsariya VDC on 2014/07/06 (2071/03/22), has mentioned that 0.4 hectares area equivalent land with similar topographic and ecological condition of forest area land to be occupied by VDC, are to be provided by the VDC to the District Forest Office, Nawalparasi as a replacement making registration in the name of the office. However, the land handover is yet to be completed.
- 14.5. As per the records maintained by District Forest Office, Rupandehi, 1 thousand 538 hectares of forest area lands have been provided to 10 different entities. Pursuant to forest area lands such provided, none of the entities have carried out replacement afforestation works in accordance with the signed agreements. In addition, replacement lands that required to be provided by the entities in accordance with the agreement, have not been acquired by the District Forest Office.
- 14.6. In accordance with the agreements above mentioned, the works of adopting environment conservation and mitigation measures as suggested in approved environment impact assessment reports have not been carried out; submission of reports to Department, Ministry by conducting environment audit within one month of project implementation as prescribed in Environment Impact

Assessment Report have not been carried out; receiving replacement land for the forest land use has not been accomplished; and afforestation work in place of forest land use have not been carried out. Sections that provisioned in agreements to mitigate the adverse impact on environment resulting hand-over of the forest lands, have not been implemented.

The above mentioned circumstances may affect in implementatin of State's policy 'to maintain the forest area in necessary lands for ecological balance' that stipulated in the Constitution of Nepal. Hence, attempts should be made for removing olden encroachments, checking new encroachment, and providing forest area land only after the receipt of replacement land.

15. **Tree Plantation:** The conservation of forests should be made by making plantation in vacant or uncultivated and encroached or encroachment prone forest area lands. Major observations related to plant production, plantation and preservation are as follows:-

15.1. As per the statement received from the concerned 4 forest offices, it is found that they have approved programs for carrying out plantation of 1,138 hectares of land during last three years. Against the approved program, Bara office has performed in accordance with target set, Rupandehi office has performed more than the target set, but the remaining two offices have performed less than the set targets. Altogether 1,079 hectares of land as given below have been used for afforestation during the period.

**Table 5: Statement relating to afforestation target and achievement**  
(In Hectre)

Office	2012/13 (2069/70)		2013/14 (2070/71)		2014/15 (2071/72)		Up to 2014/15 (2071/72)	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Bara	60	60	40	40	260	260	360	360
Chitwan	5	5	290	155	22	22	317	182
Nawalparasi	44	9	74	60	127	134	245	203
Rupandehi	70	70	70	151	76	113	216	334
<b>Total</b>	<b>179</b>	<b>144</b>	<b>474</b>	<b>406</b>	<b>485</b>	<b>529</b>	<b>1,138</b>	<b>1,079</b>

Source: District Forest Offices' Work Plans and Annual Progress Reports

15.2. For the purpose of making the afforestation and distribution of plants in accordance with the approved programme, budget and programs have been provided to District Forest Offices under heading of plant production. Of the budget received, the 4 District Forest Offices have produced 8 million 269 plants during last 3 years and out of them 7 million 302 thousand plants have been distributed. Except Chitwan and Rupandehi offices, Bara and Nawalparasi offices have distributed all produced plants. Details of production and distribution of plants are presented in Table 6 given below

**Table No.6: Production and Distribution of Plant**

(Plant in Thousands)

Office	2012/13 (2069/70)		2013/14 (2070/71)		2014/15 (2071/72)		Up to 2014/15 (2071/72)	
	Production	Distribution	Production	Distribution	Production	Distribution	Production	Distribution
Bara	741	741	936	936	1,232	1,232	2,909	2,909
Chitwan	304	22	1,500	1,107	718	487	2,522	1,616
Nawalparasi	355	355	600	600	622	622	1,577	1,577
Rupandehi	230	230	531	500	500	470	1,261	1,200
<b>Total</b>	<b>1,630</b>	<b>1,348</b>	<b>3,567</b>	<b>3,143</b>	<b>3,072</b>	<b>2,811</b>	<b>8,269</b>	<b>7,302</b>

*Source:* Concerned District Forest Offices

15.3. Plants are to be produced in view of the requirements of plantation. When compared the status of plantation with plant production of the last 3 years, there has been significant difference between the two numbers. On the basis of Department of Forests' approved norms requiring 1 thousand 600 plants for plantation in each hectre land, total of 1 million 726 thousand plants are required in 3 years for plantation in 1,079 hectares land areas of 4 districts (as shown in Table No. 5), however, the Offices have produced 8 million 269 thousand plants during the period. Thus, the district offices have produced an excess of 6 million 543 thousand plants (379 percent). The production cost of excess plants produced becomes Rs. 52 million 344 thousand at the rate of Rs.8 per plant. Though the offices have acknowledged those plants are distributed to private sector at free of cost, there has been no monitoring conducted in respect to proper utilization of the distributed plants. Afforestation conducted in uncultivated land and river elevated banks tend to bring positive result in environment through stopping land erosion and increasing greenery. Since the forest offices lack the knowledge about usage

of the distributed plants, it could not be ensured that afforestation works have created the positive impact on environment conservation of the districts.

- 15.4. Out of remaining balance of the produced plants, Rupandehi office has run multi-year forest nurseries, but Chitwan office has arranged no such nurseries. While conducted field observation of Vojad nursery of Chitwan on 2072/10/11 (2016/04/24) in course of audit, the plants produced in previous years have been found in unusable condition. It appears the plants remaining in stock can be utilized partially only in absence of the establishment of multi-year nurseries by the office.
- 15.5. Nawalparasi has received budgets/program for afforestation of 245 hectares of land during last 3 years, but has performed afforestation of 203 hectares of land. The office has acknowledged that watchers have been deputed for the protection of fenced land afforested under Nepal Electricity Authority run program; wire fencing has been constructed for the afforested land under National Forest Development Program; however no proper protection arrangements have been made for the afforestation conducted under Rastapati-Chure Conservation Program. In the office's monitoring report prepared in 2013/14 (2070/71), it has been mentioned that out of plants planted in river elevated lands and river banks, 65 percent of Jamun (*Syzyguim cumini*), Khayer (*Acacia Catechu*), Tik and Kadam plants have survived, but Nim (*Azadirachta indica*), Shiris, Bakaino (*Melia azedarach*), Masala (*Eucalyptus spp*), Amala (*Phyllanthus emblica*) and Casiya plants have survived up to 30 percent only.
- 15.6. When conducted field observation of the plantation work carried out in 64 hectares forest land of Kawasoti Municipality 3 in Nawalparasi, it has been found that the lower area of land is invisible condition due to existence of bushes; plants afforested in around 1 hectre upper area land are in damaged condition caused by fire due to human movement in newly opened motorable road; and the remaining plants are also not in growing condition in the planted area. Of the forest lands adjoined with East West Highway, 195 hectares are yet to be handed over to the user groups. Out of them, 90 hectares of land are still found unutilized condition. So, the vacant unutilized areas should be preserved by making afforestation.

15.7. Bara district office has acknowledged that it has arranged the wire fencing as well as watchers for the afforested area and also provided handover letters to local community along with the written acknowledgement to conserve all afforested areas. Although the office has prepared a report on Rastapati Chure Program in this year by monitoring the works of previous afforestation works, the reports has not spelled out anything about prevalence of live plants. Hence, the status of live plants existed in the area has been unclear. When conducted field observation related to afforestation work carried out in 41 hectares area of (elevated bank of Bakaiya River) Bara district, most of afforested plants are not found in growing condition. The office has acknowledged that the plants have not survived due to lack of wetness in the river bank.

Every year, afforestations are being undertaken in new areas through the money received from various programs, but regular caretakers and wire fences of afforested areas have not been provided. This has affected in achieving the overall success of afforestation program. Hence, afforestation works should be carried out with due consideration to local landscape, climate and environment and the selection of right species of plants. This could be undertaken on the basis of business principle i.e. selecting product based plants where possible. Afforested forests should also be protected with the arrangements of wire fences, caretakers and the local people's participation.

16. **Development of Forest** - Forest Rules, 1995 (2051) mentions that the forest development works should be implemented along with the works of weeding, bushes cleaning, thinning, pruning and preserving re-generation in accordance with work plan. While assessed the set targets and achievements of forest development works of the 4 district forest offices of the period 2012/13 (2069/70) to 2014/15 (2071/72), it has been revealed that Chitwan office has carried out none of the specified activities during the period; Bara and Rupandehi offices have carried out 6.5 hectares and 10 hectares of re-generation preservation works respectively; and Nawalparasi and Rupandehi office has conducted 10 hectares and 13 hectares of weeding activities respectively. All four forest offices included in this audit scope have not set any target for thinning and pruning activities. The weeding, bush cleaning and re-generation protection works included in their annual programs, have also not been

implemented in adequate number. Absence of forest protection works has affected in environment conservation of all four districts as a result of the growth of offensive plants like maekemenia and stoppage of the natural re-generation process of forests. Hence, the stipulated forest development activities should be implemented in order to control the growth of offensive species of plants.

17. **Collection of Timber and Firewood:** Pursuant to the collection of timber and firewood in accordance with the approved forest management work plan, Bara district office had signed an agreement with Timber Corporation of Nepal (TCN) on 2014/05/19 (2071/02/05) and 2015/03/16 (2071/12/02) concerning the harvesting fallen/ dried trees of 32 plots of national forest area. In accordance with the agreement, the corporation is required to harvest marked 3 thousand 908 fallen/dried trees in 2013/14 (2070/71) that existed in 25 plots and marked 1 thousand 696 fallen/dried trees in 2014/15 (2071/72). Matters related to implementation of the agreement are mentioned below:
  - 17.1. In assessment report of the fiscal year 2013/14 (2070/71), it has been mentioned that 152 thousand 999.76 cu. ft. of timber and 219.93 stock pile of firewood could be produced from the marked 3 thousand 908 trees that existed in 25 plots, but only 138 thousand 429.87 cu.ft. of timber and 87.50 stock pile firewood have been shown as actual production after harvesting 3 thousand 575 trees. Out of them, 69 thousand 220.41 cu.ft. timber and 44.50 stock pile firewood have been obtained by District Forest Office. As per the proportion fixed during the assessment period i.e. receiving 219.93 stock pile firewoods through harvesting 3 thousand 908 trees, a total of 201 stock pile of firewoods should have been produced from harvesting 3 thousand 575 trees, but only 87.50 stock pile of firewoods have been shown as production from the harvested trees. Since firewoods production is shown in lesser quantity as compared to the proportion fixed during assessment period, there has been revenue loss with the amount equivalent to the proportion. In addition, no penalty has been levied to the contractor for the failure to harvest the required number of trees as specified in the contract agreement.
  - 17.2. The assessment of the fiscal year 2014/15 (2071/72) stated that 85 thousand 511.83 cu. ft. of timber and 124.53 stock pile of firewood could be produced from the marked 1 thousand 686 trees that existed in 7 plots, but only 70

thousand 485.87 cu.ft. of timber and 32.25 stock pile firewood have been shown as actual production after harvesting of 1 thousand 297 trees. The timber and firewoods thus produced are still remaining to be allocated. As per the proportion fixed during the assessment period i.e. receiving 124.53 stock pile firewoods harvesting 1 thousand 686 trees, a total of 95.79 stock pile of firewoods should be produced from harvested 1 thousand 297 trees, but only 32.25 stock pile of firewoods have been shown as production. Since firewoods production is shown in lesser quantity as compared to the proportion fixed during assessment period, there has been revenue loss with the amount equivalent to the proportion. In addition, no penalty has been levied to the contractor for the failure to harvest the required number of trees as specified in the contract agreement.

- 17.3. Chitwan District Forest Office has signed an agreement with Timber Corporation of Nepal (TCN) on 2015/05/19 (2072/02/05) concerning the harvesting fallen/dried trees of various 11 plots of protected forest and the agreement has mentioned that 558 fallen/dried trees existed in the area shall be harvested. The agreement provides that total quantity of 28 thousand 218.44 cu.ft. timber and 34.28 stock pile of firewood shall be produced, but 28 thousand 88.29 cu. ft. timber and 6.5 stock pile of firewoods have been shown as production. Although the office has shown the production of timber in accordance with the local volume table, the quantities of produced firewoods are found below the volume table set norms, as such, the amount equivalent to price of 27.78 stock pile of firewoods shown as less quantity of firewoods production, should be considered as the revenue loss.
- 17.4. The agreement made by the Nawalparasi district forest office with Timber Corporation of Nepal (TCN) on 2014/04/27 (2071/01/14) concerning the harvesting fallen/dried trees of various 8 plots of national forest area mentioned that 439 fallen/dried trees existed in the plots would be harvested. Though the agreement provided that total quantity of 21 thousand 759.92cu. ft. timber and 26.48 stock pile of firewood could be produced, but only 19 thousand 490.71 cu.ft. timber and 10 stock pile of firewoods have been shown as production harvesting 344 trees. The reasons for harvesting only 344 trees instead of the specified 439 trees have not been clarified. Considering the proportion of the assessment receiving 26.49 stock pile firewoods through

harvesting 439 trees, total of 20 stock pile of firewoods should have been produced from harvested 344 trees, but only 10 stock pile of firewoods have been shown as production. Hence, the amount equivalent to lesser quantity of firewoods produced should be treated as revenue loss.

- 17.5. Whereas the district forest offices require to collect timber in accordance to the annual approved work plan, but Rupandehi forest office has granted the permission to harvest an excess of 6 thousand 529.77 cu.ft. timber in the following community forests as compared to the quantities fixed in approved work plans. Consequently, excess quantities of timber as shown in Table 7 have been collected without complying with the arrangements of the work plan.

**Table No. 7: Tree harvesting approval granted to Community Forests**

(Quantity in Cu.ft.)

<b>Community Forest User Group (CFUG)</b>	<b>Annual approved harvesting</b>	<b>Permitted harvesting</b>	<b>Excess cutting or collection</b>
Pragati CFUG, Devdaha	5,117.09	6,255.01	1,137.92
Janapriya CFUG, Devdaha	5,665.62	6,412.07	746.45
Palpali CFUG, Devdaha	6,552.97	7,205.98	653.01
Kanchan CFUG, Saljhandi	4,803.68	5,005.55	201.87
Budhha CFUG, Dehabari	1,685.74	2,077.63	391.89
Rajapani CFUG, Saljhandi	5,405.36	8,803.99	3,398.63
<b>Total</b>	<b>29,230.46</b>	<b>35,760.23</b>	<b>6,529.77</b>

*Source:* District Forest Office, Rupandehi

- 17.6. Considering the collection of firewood in comparison to number of trees harvested, 218 stock pile of firewoods have been found as less collected. Compared to number mentioned in the agreement, 817 trees have been less harvested and the harvested branches of dried trees requiring collection are also left in the forests. It has caused revenue losses to the office and has also increased the risk of forest fire due to existence of harvested tree branches. Hence, Nepal Timber Corporation should be asked to accomplish the works in accordance with agreement and in the case remaining works are not performed, necessary revenues losses caused by the non-accomplishment of works should be recovered. In addition, the office should stop the work of

granting excess permits to community forests for collecting timber and firewoods than the quantities specified in respective work plans.

18. **Target and Progress-** District forest offices should achieve the targets set in their approved annual programs. However, the following activities shown in Table No. 8 have not been accomplished despite of the receipt of budget disbursements in accordance with their approved annual programs:

**Table No. 8: Forestry activities-targets not achieved**

Program	Activities	Target	Budget (Rs. in 000)	Progress	Expendi- -ture
<i>Chitwan</i>					
Multi Stakeholder Forest Program	Entrepreneurship Development Support Program	1 No.	250	0	0
Purchase of plants produced from leasehold forest groups	Training related to scientific forest management	10 thousand	100	0	0
Regional Cooperation Promotion Project for Wildlife Conservation	Wildlife conservation encouragement	1 district	15	0	0
Community Forest Development Program, National Forest Development Program	Green Employment-oriented Entrepreneurship development	1	100	0	0
	Wildlife crime information collection		20	0	0
	Digital Demarcation/ Mapping and Recording including various type forest areas and encroached areas of districts	1	250	0	0
Rastapati Chure Tarai Madhesh Conservation Program	Stone, pebble and sand collection, management and control and monitoring		100	0	0
<i>Nawalparasi</i>					
Multi-stakeholder Forest Program	Community forest user group formation, registration, preparation of work plan and facilitation in handover of forests	5 Nos	125	0	0
	Community climate change favorable plan implementation support	1	50	0	0
	District level REDD work group meeting	3	18	0	0
	Equipment purchase		180	0	0
Community Forest Development Program	Review of community forest work plan	5	25	0	0
National Forest Development and	Control of tree cutting for smuggling		200	0	0

Management Program			Wildlife conservation and wildlife crime information collection	20	0	0
Rastapati Madhesh Program	Chure Conservation	Tarai	Plantation in river elevated land	10 hectares	250	0
			Grant for community forest groups to make Chure area community forests conservation-oriented	5	250	0
<i>Rupandehi</i>						
Multi-stakeholder Forest Program			Encroachment control coordination committee/ security agencies meeting		250	0
			Community forest user group formation, registration, preparation of work plan and facilitation in handover of forests	3 Nos	75	0
			District level REDD work group meetings	3 times	18	0
			District level multi-stakeholders meeting	1 time	17	0
			Climate change favorable plan preparation and implementation	1 No	150	0
Regional Cooperation Promotion Project for Wildlife conservation			Wildlife conservation encouragement	1 district	15	0
Community Forest Development Program			Grants for green Employment-oriented Entrepreneurship Development	1	100	0
National Forest Development and Management Program			Partnership forest management work plan renewal	1No	400	0
			Wildlife crime information collection	1	20	0
<b>Total</b>					<b>2,998</b>	<b>0</b>

*Source:* Concerned District Forest Offices

Although forestry activities including scientific forest management training, green employment-oriented entrepreneurship, recording of the encroached areas, management of stone, pebble & sand collection, controls & monitoring, forest work plan, control of tree harvesting for smuggling etc. are useful for environment conservation through the preservation of forest and wildlife, and budgets of Rs. 2 million 998 thousand have been received for this purpose, the district forest offices have failed to execute the specified activities by preparing necessary work plans. Consequently, the targeted benefits

attainable by running programs have not been achieved. Hence, attempts should be made to carry out activities in accordance with the approved annual programs.

19. **Grazing** - Section 49(c) of Forest Act 1993 (2049) prohibits to let animals enter or grazing in forest area. Major findings pertaining to this are given below:
  - 19.1. All four district forest offices have not controlled the forest grazing by identifying specific places for grazing. It has been acknowledged during discussions on audit findings that some of forests' user groups transferred to communities, has taken measures to control open grazing after such handover. However, the controls on grazing have not been effectively done in case of national forest areas. Keeping in view the damage occurred in natural re-generation due to lack of grazing control in forests, the district forest offices have formulated the operational policy of contributing significantly in the practices of providing stock feeding foodstuff through keeping coordination with other offices including district veterinary service offices. Despite of approaching to final year of the implementation of work plans, the programs specified in work plans have not been implemented and uncontrolled access to grazing has been hindering in natural re-generation process of the forests.
  - 19.2. Animal grazing have not been properly managed in districts due to non-operation of programs related to plantation of floor grass and fodder trees (Dale ghas), stock feeding, rational grazing; lack of proper arrangements for barbed wire fencing; and surrounding of forest areas by human settlements.
  - 19.3. The process of natural re-generation of various species of plants has been adversely affected because of reason that people residing near the forest area used to keep or breed a large number of cattle, buffalos, sheep, and let them graze in the forest areas. Lack of proper management of grazing has also been adversely affecting in protection and preservation of national forests and hindering the process of natural re-generation.
  - 19.4. For the management of grazing, programs related to sowing of floor grass & fodder trees, stock feeding, rational grazing should be implemented and barbed wire fences should also be constructed. For this purpose, coordination

with related agencies including District veterinary Office should also be maintained to promote awareness to the local communities.

20. **Forest Fire** - Whereas Section 49(b) of Forest Act, 1993 (2049) prohibits conducting any act that will cause fire in forest area, but firing in forest has been outbreaking due to natural and human causes. To prevent firing in forest and mitigate possible loss & damage in case of outbreak of fire, preventive as well as curative both types of measures are to be adopted. Major findings pertaining to this are given below:

20.1. In view of the occurrence of damage in forest products/ natural re-generation and bio-diversity caused by fire in the forests every year, Nawalparasi and Chitwan offices have classified the forest areas in their Five-year Forest Management Work Plans into three main categories, namely- highly sensitive, sensitive and low sensitive as given below in Table 9 on the basis of fire proneness. As per the classifications, forests adjoining to highway area have been put as highly sensitive areas.

*Table No.9: Classification of forests on the basis of fire proneness*

<b>Highly Sensitive</b>	<b>Sensitive</b>	<b>Low Sensitive</b>
<i>Nawalparasi</i>		
<i>Forest fire appeared 2 or more times in a year-</i>	<i>Forest fire appeared once in a year-</i>	<i>Forest fire appeared in alternate year or below the number-</i>
Dumkibas, Naya Belhani, Prashauni, Tamasariya, Deurali, Narayani, Shivamandir, Agyeuli, Kumarbarti,	Rakachuli, Makar, Dawoonnedevi, Sunawal, Mainaghat, Hupsekot, Ratanpur, Dandajheri, Panchanagar, Tilakpur, Ramnagar, Ruchang, Rakuwa, Kot-thar, Amaraut, Kolhuwa	Gaidakot, Mukundapur, Amarapuri, Rajahar, Dibyapuri, Devchuli, Kawasoti, Pragatinagar, Tribeni Susta, Rupauliya, Dedhgaun, Mithukaram, Bharatipur, Upallo Arkhala, Naram, Bulingtar, Jaubari, Pithauli
<i>Chitwan</i>		
<i>Forest fire appeared 2 or more times in a</i>	<i>Forest fire appeared once in a year-</i>	<i>Forest fire appeared in alternate year or below</i>

<i>year-</i>		<i>the frequency-</i>
Baratpur Municipality 1	Korak, Lothar,	Birendranagar,
Ramnagar, Bharatpur	Shaktikhor, Siddi,	Bhandara, R.
Municipality 11,	Kawoole	Municipality, Padampur
Bharatpur Municipality		
12, Dahakhani,		
Kabilasa		

*Source:* Concerned District forest Offices

- 20.2. Though Bara and Rupandehi district forest offices have not classified the forest fire sensitive areas in their Five-year Forest Management Work Plans, they have recognized the prevalence of forest fire problems.
- 20.3. For the control of forest fire, District Forest Offices should implement various programs including creating people's awareness, construction of fire routes in national and community forest, formation and mobilization of fire control networks, dissemination of forest fire control information in local radio, televisions, and newspapers during summer time etc. When assessed the forest fire control activities conducted by the offices in last three years, the following mix situations have been noticed as given in Table No. 10:

**Table No.10: Work performance related to control of forest fire**

District Forest Office/Activities	Bara	Chitwan	Nawalparasi	Rupandehi
Poster, pamphlet printing	×	×	×	√
Hoarding board writing	×	×	×	√
Miking	×	×	×	√
Arranging of fire watcher for controlling fire	×	×	√	√
Conduct of workshop for controlling forest fire	√	√	×	√
Purchase of necessary equipment for controlling forest fire	√	√	√	√
Construction of necessary forest path in national forest area	√	√	×	×
Construction of necessary fire control line in national forest area	×	×	×	×
Maintenance of fire line	×	×	×	×

Adoption of preventive measures like-cleaning of bushes, control burning in national forest area to control fire	×	×	×
Formation of fire control network	√	×	×
Preparation of forest fire control plan	√	×	×

*Source:* Statements received from concerned District Forest Offices

- 20.4. It has been acknowledged by the concerned forest offices that people used to set fire in forests to grow good grasses, conduct illegal hunting, encroach the forests areas, and drive away wild animals. Likewise, forest firings have not been come into control due to reasons like: lack of people's awareness on forest firing, absence of construction and maintenance of fire lines, existence of public paths/ roads in forest areas etc. In addition, there exist situations that the precautions that required for controlling forests firing have not been adequately taken. District Forest offices are of the opinion that forests firing in Tarai districts tend to damage more in re-generation process rather than damages to the trees/plants because they are generally of the ground fire type. In absence of adequate control measures for forest firing, the possible losses or damages resulting from crown (top) fire could be in huge.
- 20.5. Measures taken to control the forest fire are not sufficient to minimize the possible loss & damage. More control measures to be adopted should include- arrangements of required watchers with extension of mass publicity and enhancement of people's awareness, construction and maintenance of forest route & fire lines, arrangements of necessary forest-fire control tools, cleaning of bushes etc.
21. **Export through smugglings**-Section 49(d) and (e) of Forest Act 1993 (2049) have prohibited to do any act of remove, traffic or sell and distribute forest products, cut trees and plants or their branches, extract rosin and barks or damage in any type. Section 50 of the same Act has provided the punishment for the person committing the offences. Major findings pertaining to this are given below:
- 21.1. Though export smuggling is punishable act as per the Forest Act, such acts have not come into control. In all four office premises, there have been many vehicles and pile of woods (Picture No. 3 and 4) that were seized from export smugglers and are lying in premises awaiting a long time for the decision

from the concerned courts. In the four districts, there are 154 outstanding forest related lawsuits up to mid July 2016 that fall under jurisdiction of the concerned district forest officers. It is because of nearness from Lokmarga and easy accessibility, illegal harvesting of forest products and export smugglings have been found as one of the major problems in the districts. Easy availability of transportation means for exporting and high demand of forest products in markets have eased the situation of immediate marketization of smuggled forest products. This has proliferated the problem of illegal cutting and export smugglings of forest products.

*Picture No.3*



*Picture No.4*



*Seized vehicles and logs kept in the premises of District Forest Office-Chitwan and Bara which were used for export smugglings.*

- 21.2. Export smuggling and encroachment have not come into control due to population growth, growing urbanization, price rise of wood products, prevalence of dependency on forest products for livelihood, inadequate human and physical resource mobilization for smuggling control. Since export smuggling tend to destruct the forest resources, regular patrolling should be arranged to control export smuggling and legal action should also be taken to the defaulters with timely decision of lawsuits. For this, necessary co-ordination and cooperation should also be maintained with the local community, the police and local administration.
22. **Collection of stone and pebbles:** In Forest Management Work Plans of the four districts covered within this audit scope, it is mentioned that total of 30 million 862 thousand stone, pebbles, sand and gravel to the maximum could be taken out every year (as shown in Table No. 11) from the rivers flowing in the forests area (based on Environment Impact Assessments). Since the

concerned District Development Committees are involved in making the contract arrangements of such materials as per court's decision to implement one window system, and the concerned forest offices have also not obtained any details relating to these contract arrangements, it could not be ensured that whether an excess quantity of materials have been collected from rivers than the quantity that specified in forest work plans.

*Table No.11: Description related to stone, pebbles and sand collection*

(Quantity in Thousands Cu.ft.)	
<b>District Forest Office</b>	<b>Quantity</b>
Bara	21,127
Chitwan	5,500
Nawalparasi	1,435
Rupandehi	2,800
<b>Total</b>	<b>30,862</b>

*Source:* Five-year Forest Management Work plan of District Forest Offices

By establishing coordination between the concerned District Forest Offices and District Development Committees, materials should be collected as per specified quantities and places in the Environment Impact Assessment Reports and the measures suggested in such reports for improvement of the environment should also be implemented.

23. **Scientific Forest Management** - Forest Act 1993 (2049) and Forest Rules 2051 (1995) stipulate that the management of Nepal's forests shall be carried out in accordance with government managed forest, community forest, leasehold forest or religious forest. In previous forest policy it was mentioned that the management of Tarai area forest will be conducted by dividing into blocks or compartments. In 2014 (2071), Scientific Forest Management Procedures has been formulated in order to scientifically manage such forests. Major findings pertaining to this are given below:
  - 23.1. On the basis of social, economic and environmental appropriateness and to give continuity or raise the goods and services delivered by forests, forest areas specified in scientific forest management have been determined to 80 years crop-cycles and 10 years of re-generation period. To manage the forests accordingly, Bara, Nawalparasi and Rupandehi district offices have approved

their work plans categorizing 11 thousand 521 hectares of forest lands as partnership forest given in Table No. 12.

**Table No.12: Description related to Partnership Forests**

		<i>(In Hectre)</i>
<b>District</b>	<b>Name of Partnership Forest</b>	<b>Area</b>
Bara	Tamagadhi partnership forest	2,579
	Sahajnath partnership forest	2,260
	Halkhoriya partnership forest	1,938
	Gadhimai partnership forest	970
Nawalparasi	Buddhashanti partnership forest	1,781
	Madhyabindu partnership forest	672
Rupandehi	Lumbini partnership forest	1,321
<b>Total</b>		<b>11,521</b>

*Source:* Concerned District Forest Offices

- 23.2. Amongst the four districts covered under this audit scope, except Chitwan district, all three districts offices have approved their work plans under partnership forest management model. Lumbini Partnership Forest, Rupandehi has implemented scientific forest management since Fiscal Year 2012/13 (2069/70) and out of 2 thousand 144 trees grown in 3 plots of forest land during three years period, the office has permitted to harvest 1 thousand 753 trees and retained 391 motherhood trees as given in Table No. 13.

**Table No.13: Description of work performance of Lumbini Partnership Forest**

<b>Fiscal year</b>	<b>Total Number of tree</b>	<b>Number of tree permitted for cutting</b>	<b>Number Motherhood Tree</b>
2012/13 (2069/70)	719	584	135
2013/14 (2070/71)	721	592	129
2014/15 (2071/72)	704	577	127
<b>Total</b>	<b>2144</b>	<b>1753</b>	<b>391</b>

*Source:* District Forest Office, Rupandehi

In the area having majority of Sal species of trees, the status of natural regeneration in the plots, that permitted for tree cutting in 2012/13 (2069/70) and 2013/14 (2070/71), has been found in good condition, but the works of bushes cleaning and thinning & pruning are still to be carried out. Though

Bara and Nawalparasi district offices have established the partnership forests during the same time period, the works of scientific forest management has not been initiated up to this year.

- 23.3. Nawalparasi district has approved 2 work plans under partnership forests. Out of them, mapping and marking works have been completed for Buddhashanti Partnership Forest, whereas only mapping work has been undertaken in case of Madhyabindu Partnership Forest. In the partnership forests approved by Bara district, none of works of scientific forest management have yet started. In all four districts covered under this audit scope, scientific forest management work plans have been selected for 5 community forests in each district, that are under process of implementation in this year.
- 23.4. Forests grown naturally are now generally becoming old, hollow and over-matured condition. Forests managed by communities are becoming protective. In the situation of the promulgation of Scientific Forest Management Procedures, 2014 (2071) to improve the management aspects of forests, the condition of forests is likely to improve with the rise in supply of forest products, growth in revenues, and the development of new forests with natural re-generation. Therefore, Bara and Nawalparasi district offices should also implement the scheme of scientific forest management in a similar way as Rupandehi district. In addition, since the scientific forest management provisions to retain only 15 to 20 percent of motherhood trees and harvest the rest of trees, the motherhood trees so retained also need to be harvested after coming 10 years, which may lead to excessive trees harvesting in coming days. If the management of forest is not done properly, it will likely to affect the environment of the districts. Hence, there should be proper arrangements for the conservation of natural re-generation of forests.

## Conclusion

24. **Conclusion-**Forest is one of the important natural resources of Nepal. The forest has been contributing to economic and social development of the country by creating healthy environment and increasing natural beauty of the forest areas. As such, efforts should be made to maximize the benefits through proper management and conservation of the forests. For this, the forest management works like- demarcation and determination of forests area,

control of encroachment of forests, afforestation and forest conservation, control of export smugglings and forest fire, regulating grazing and providing forest land for other purposes should be managed more prudently.

In course of auditing, it is observed that the conservation of forests have been affected due to lack of clear demarcation between forests area and cultivated land area or disappearance of previously fixed boundaries due to lack of regular care taking and maintenance; inability to remove the encroached areas of forests and no proper recording of the increasing on-going encroachments; non accomplishment of replacement afforestation; not attaining of receivable replacement lands; non accomplishment of afforestations and forest protection works in accordance with targets set and not undertaking of adequate protection works for the planted saplings; and non monitoring of the distributed saplings.

<b>Recommendations</b>
<ul style="list-style-type: none"><li>• Identify and manage forest boundaries</li><li>• Remove encroachment by implementing Forest Encroachment Control Strategy 2068 (2011),</li><li>• Implement agreement provisions while leasing forest sector land ,</li><li>• Control forest fire by implementing Forest Fire Management Control Strategy 2067 (2010),</li><li>• Manage grazing,</li><li>• Control export smuggling of forest products through coordination with local administration and the police</li><li>• Implement scientific forest management</li></ul>

Similarly, the conservation of forests have been affected because of not achieving of desirable results from the export smuggling control measures; not managing of animals grazing properly; and inadequate preventive and curative measures taken to control of forest fire.

On basis of the assessment of districts' status, audit has noticed several weaknesses in management and conservation of the forests in the audited districts. To overcome the observed problems, necessary corrective measures should be adopted to regularize and make effective the management and conservation of forests, which will further contribute in conservation of the environment of the districts.