



*Evaluation Report on Project*

**AFFORESTATION OF BLANK AREAS IN  
CHANGA MANGA PLANTATION**



**DIRECTORATE GENERAL MONITORING & EVALUATION  
PLANNING & DEVELOPMENT BOARD  
GOVERNMENT OF THE PUNJAB  
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## Executive Summary

Forests and trees contribute to economic growth, employment, food security & energy generation as they play important role to check climate change, environment protection and combat the acute shortage of timber & firewood in the country. There is a rapid need of new plantation as well as filling blanks in the existing afforestation to meet the gap in supply and demand for both firewood & timber. The only one way to overcome this challenge is to utilize all areas for afforestation under the control of Forest Department for meeting the demand of timber, firewood and raw material for forest/agro based industries.

The project entitled “Afforestation in Blank Areas in Changa Manga Plantation” approved at PC-I cost of Rs. 15.940 million with gestation period of 36 months (2014 to 2017). This project had been conceived with the objective of afforestation in the blank areas in Changa Manga plantation. The scheme completed at the total cost of Rs. 15.940 million which entailed major component of afforestation carried out departmentally in Changa Manga Forest on an area of 200 acres. The major species planted were Eucalyptus, Frash, Toon, Ber, Jand and Shisham (726 plants per acre with spacing size of 10’ X 6’) in the project area.

The project was evaluated for its relevance, effectiveness, efficiency and sustainability. On the basis of DGM&E assessment and analysis, the project is fully relevant with the government development priorities and plantation, substantially effective on the basis of plantation target, percentage survival and plant’s height. Highly efficient in term of utilizing the released funds on the planned physical activities as 100% funds spent on plantation, highly sustainable if maintenance of plantation carries in future to achieve the long run targets.

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## 1. INTRODUCTION

The project titled “Afforestation of Blank Areas in Changa Manga Plantation” is in consistent with the overall objectives of the forestry sector. The project was formulated for improving the tree growth in the blank areas of Changa Manga tree plantation. The project carries tangible and intangible benefits to combat the environment degradation and producing timber and firewood. The acute shortage of timber and firewood in the country as well as huge gap between demand and supply necessitates for bringing maximum area under afforestation for contribution towards national economy.

The main objective of the project was to fill the blank areas in the existing afforestation at Changa Manga. Planting was carried out at 200 acres spacing (trench to trench distance 10 feet and plant to plant distance 6 feet), 726 plants per acre. Mix plantation viz., Eucalyptus, Jand, Frash, Tun & Ber with Shisham to some extent was carried out during 2014-15 and maintenance of the afforestation done during the subsequent two years (2015-17).

### 1.1 PROJECT BRIEF

**Table 1: Project Brief**

<b>Project Title</b>	Afforestation of Blank Areas in Changa Manga Plantation
<b>Sponsoring Ministry/ Agency</b>	Government of Punjab, Forestry, Wildlife and Fisheries Department
<b>Execution Agency (s)</b>	1. Conservator of Forests, Lahore Circle, Lahore. 2. Divisional Forest Officer, Kasur Forest Division at Changa Manga
<b>O &amp; M after Completion</b>	Divisional Forest Officer, Kasur Forest Division at Changa Manga
<b>Location of the Project</b>	Changa Manga Forest
<b>PC-I Original Cost</b>	Rs.15.940 million DDSC dated 31.10.2014
<b>PC-IV Actual Cost</b>	Rs.15.940 million

<b>Planned Start Date Original</b>	01-07-2014
<b>Planned End Date</b>	30-06-2017
<b>Gestation Period</b>	36 Months (2014-15 to 2016-2017)
<b>Beneficiaries</b>	General Public

## 1.2 PROJECTS OBJECTIVES

The project was planned with the following specific objective.

1. Afforestation during 2014-15 200 Acres
2. Maintenance of afforestation coup 2014-15 during 2015-16 & 2016-17

## 1.3 PROJECT ACTIVITIES

The project entitled, "Afforestation of Blank Areas in Changa Manga Plantation" had been conceived with the objective of rehabilitating and filling the blanks in Changa Manga plantation.

Project activities aimed afforestation on total area of 200 acres on flow irrigation during 2014-15 and maintenance of afforestation during the two subsequent years (2015-17). Forest species Shisham, Eucalyptus, Kikar, Toot and Poplar were planned to be planted at 10' x 6' spacing (726 planting per acre + 182 restocking during 2<sup>nd</sup> year + 109 restocking during 3<sup>rd</sup> year) over a period of 36 months.

## 1.4 THE EVALUATION PURPOSE & STRUCTURE

The purpose of the evaluation is to assess whether the project was relevant and successful in meeting its objectives and also the extent to which the project design has been successful in achieving its desired results. The evaluation therefore is covering following aspects:

***Relevance:*** The evaluation intends to analyze the project's anticipated potential and contribution towards the problem identified during project identification such as reducing carbon sequestration tool to mitigate the climate change and afforestation to blank areas. As mentioned in PC-I of the scheme. Following scale will be used for the analysis. (Fully relevant/Substantially relevant/Moderately relevant/Partially relevant/Not relevant).

**Effectiveness:** The aspect of effectiveness will be analysed in terms of planned objectives of plantation and area. The standards of plantation which are crucial for achieving the planned results and achieving the expected output will be analysed using height and survival rate of plantation. Following scale will be used for the analysis (Substantially effective/moderately effective/not effective).

**Efficiency:** The assessment of efficiency of the project includes the analysis of project cost, planned physical targets of the project & maintenance of plantation. Following scale will be used for the analysis (Highly efficient /moderately efficient /not efficient).

**Sustainability:** The sustainability will be explored through the maintenance of plantation and survival rate of the plantation. Following scale will be used for the analysis (Highly sustainable/Moderately sustainable/Not sustainable).

This evaluation report is structured in different sections covering purpose of project evaluation, introduction of the project and its objectives, evaluation methodology, DGM&E assessment and observations/recommendations and conclusion.

## **2. METHODOLOGY**

The project evaluation has been carried out analyzing the aspect of relevance, efficiency, effectiveness and sustainability of the project. The detailed methodology includes document review, field visits, physical maintenance, direct observations and key informant interviews.

### **Data Collection Method and Source**

The data has been collected through a comprehensive desk review of the relevant documents provided by the department, available literature, inspection and assessment of different components of the site/project, meeting with the project team and concerned stakeholders. Stratified Random sampling technique was used in this project evaluation.

## 2.1 TEAM FORMATION

Meeting was held in Directorate General Monitoring & Evaluation and the competent authority assigned the project to **Mr. Muhammad Iqbal, Individual Consultant.**

## 2.2 DOCUMENTS REVIEW:

Following project documents, evaluation tools and techniques were consulted.

- I. **PC-I document** was reviewed and project objectives, cost, time and scope parameters were validated by the data provided in the PC-I document
- II. **PC-IV Document** provided information of planned and actual targets of the project in terms of time, cost, scope and objectives particularly and compared the same with those of mentioned in PC-I document to conclude results.
- III. **Sponsor's Report** provided information about the status of the project targets at time of reporting period, particularly about the financial and physical achievements.

## 2.3 IDENTIFICATION OF KEY INDICATORS:

Project Performance was gauged on basis of following indicators:

### 1) Process Indicators

- i) Project's physical analysis
  - Project's cost analysis
  - Planned & actual plantation
  - Project time duration

### 2) Objective Indicators

- i) Afforestation 200 Acres.
  - No of pits
  - No of plants available
  - No of empty pits
  - Survival Rate
  - Types of species
  - Height of plants
  - Plantation Accuracy

## 2.4 DATA COLLECTION METHODOLOGY

The evaluation report is based on pre-visit desk study of the relevant documents, physical measurements, field monitoring, assessment of different components of the site/project, meeting with different stakeholders of the project. To get concise and precise information of the project before visiting the sites, a comprehensive desk study of different documents/literature was completed. For this purpose PC-I and related documents were collected from the office of DG M&E, Planning & Development Board, Government of the Punjab & Forest Department. The documents were reviewed to collect suitable and relevant data. Following sampling methodology was used for data collection.

### Sampling Technique

The plantation was carried out in 6 compartment areas viz., 48-A, 48-B, 150, 188, 21, 126. All compartments were arranged in increasing order. Four compartments (21, 48-A, 48-B, 126) were selected at random with the help of website *www.random.org*. Total eight sample plots of size 50x50 feet were taken for inspection. GPS coordinates of all sample plots were also recorded.

## 2.5 SITE VISIT FOR DATA COLLECTION:

For in-depth analysis of project activities, Changa Manga plantation was visited to assess and evaluate the specific objectives as described in PC-I. The detail of visit is given in **Table 2**.

**Table 2: Evaluation Site Visit**

LOCATION	DATE OF VISIT	TEAM MEMBER
Changa Manga Plantation District Kasur	12-03-2019	Muhammad Iqbal Individual Consultant

## 2.6 INTERVIEWS WITH PROJECT OFFICIALS:

During project evaluation and field survey, a series of interviews were conducted with the following project officials.

**Table 3: Detail of the Project Officials Interviewed**

SR #	NAME	DESIGNATION	DEPARTMENT	CONTACT #
1.	Mr. Imran Sattar	Divisional Forest Officer Kasur	Forest Department	0331-6106030 049 - 4381561
2.	Mr. Agha Hussain	Sub Divisional Forest Officer, Changa Manga	-do-	0333-6849122
3.	Muhammad Hanif	Block Officer Changa Manga	-do-	0345-4598951
4.	Rana Shoukat Ali Babar	Block Officer Changa Manga	-do-	0300-6549636

## 3. PROJECT PHYSICAL & FINANCIAL ASSESSMENT

DGM&E assessment vis-à-vis physical and financial activities of the project are given as following.

### 3.1 PHYSICAL ANALYSIS:

Details of project planned activities and physical achievements as reported by sponsoring agency and randomly assessed by evaluation team are given below in Table 4.

**Table 4: Project Physical Achievements (As Per Pc-Iv)**

Year	Items (As per PC-I)	Unit	Target/Quantity	Actual Achievement
2014-15	Sowing & Planting	Acres	200	200
2015-16	Maintenance of plantation Coup(2014-15) + Restocking	Acres	200	200
2016-17	Maintenance of plantation Coup (2014-15) + restocking	Acres	200	200

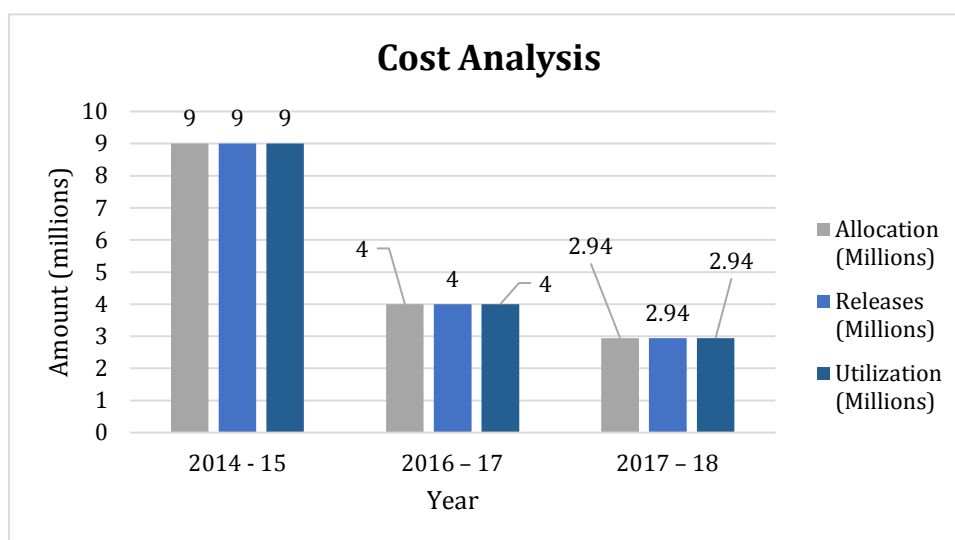
The quantitative analysis of the component-wise targets and their actual achievements is done as given in ensuing paragraph.

### 3.2 PROJECT COST ANALYSIS

Detailed analysis of the project cost (e.g. original & revised cost along with overall actual expenditures) was carried out to gauge the financial performance of the project after its completion. The rationale of PC-I estimates and actual expenditure was also figured out by calculating its percentages and showing its trends accordingly.

**Table 5: Financial Phasing as per PC-I Allocation and Expenditure (Rs.million)**

Year	PC-I Phasing	PSDP Allocation	Releases	Expenditure as per PC-IV	% age Utilization against Releases
2014-15	9.000	9.000	9.000	9.000	100
2015-16	4.000	4.000	4.000	4.000	100
2016-17	2.940	2.940	2.940	2.940	100
<b>Total</b>	<b>15.940</b>	<b>15.940</b>	<b>15.940</b>	<b>15.940</b>	<b>100 %</b>



**Figure 1: Year-wise Expenditures against Releases (Rs. Million)**

## 4. Data Collection and Analysis

The Changa Manga plantation was visited on 12.03.2019 to collect the data described earlier in heading 2.4 and other project's location where work had been done as per project objectives. A simple questionnaire was developed to get basic information about maintenance of species, height, condition and distance between plants.

### 4.1 AFFORESTATION

Different sample plots were selected for checking at different sites of afforestation and maintenance.

### 4.2 Survival Rate

Survival rate of plants is calculated by number of plants available/survived. The sample wise survival rate was calculated on projection of sample number of plants shown in Table No. 6.

**Table 6: Afforestation**

Target No. of Plants/ Acre as per PC-I	Actual No. of Plants per Acre	Mortality	Survival Rate (%age)	Afforestation Area (Acres)	Target No. as per PC-I	Actual No. of Plants	Diff.
726	659	67	90.77%	200	1,45,200	1,31,800	13,400
<b>TOTAL</b>					<b>1,45,200</b>	<b>1,31,800</b>	<b>13,400</b>

## 5 DGME ASSESSMENT OF THE PROJECT OBJECTIVES:

Sr. No.	Physical Targets and Achievements	Unit	A .... Achieved (100%) PA .... Partially Achieved (50%) NA .... Not Achieved (<50%)				
			A	PA	NA	Quality	Remarks
1.	Afforestation	200 Acres	√			Satisfactory	The selected sample plots of size (50 sft) showed that on the average, 37 plants were available in the pits against the Forest Department's standard of 10x6 i.e., 41 plants per 2,500 sq.ft. This indicates that about 91% achievement of the objective of afforestation attained with plantation height (about 12-14 ft.).
2.	Maintenance of afforestation	200 Acres	√			Satisfactory	Maintenance of the afforestation achieved satisfactorily.

### 5.1 Relevance

The evaluation intends to analyze the project's anticipated potential and contribution towards the problem identified during project identification such as reducing carbon sequestration tool to mitigate the climate change and afforestation to blank areas. As mentioned in PC-I of the scheme. Therefore, the project has **full relevance** to the development priorities of the government.

## 5.2 Effectiveness

The aspect of effectiveness will be analysed in terms of planned objectives of plantation and area. The standards of plantation which are crucial for achieving the planned results and achieving the expected output will be analysed using survival rate. On the basis of plantation, 100 percent achievement against the planned target and counted as efficiency. In terms of percentage survival of the plants, the data shows 91% survival rate. Considering all these analyses and site observations, the project is rated as **moderately effective**.

## 5.3 Efficiency

The assessment of efficiency of the project includes the analysis of project cost, planned physical targets of the project (Plantation in riparian blank forest). A project cost analysis shows that project utilized the released funds on the planned physical activities, 100 percent was spent on plantation & maintenance. Considering all these analyses and site observations, the project is rated as **fully efficient**.

## 5.4 Sustainability

The sustainability will be explored through the maintenance of plantation and survival rate of the plantation. If the maintenance of plantation carries further on in future then in term of sustainability, the project is **highly sustainable**.

The risks to the project will be identified based on the sustainability of the project and the inefficient monitoring system is a risk to project objectives of plantation. The 9 percent mortality rate in the plantation is a risk to project. If the plants mortality continues, the targets of plantation will not be achieved and lead to **medium risk**

## 6. OBSERVATIONS

The observations recorded during evaluation of the project are given as per documentation given by the Forest Department in the ensuing paragraphs:

1. The core component of the scheme afforestation on 200 acres was fully achieved.
2. At random selected sites, the plantation was found in good condition.

3. Samples taken during site visit revealed the growth of the plantation satisfactory with respect to tree's height and size and proper maintenance after afforestation.
4. During evaluation visit, the proper signage of project area clearly highlighting the compartments number, year of work, GPS coordinates, species etc., was observed missing.

## 7. CONCLUSION

The project was evaluated for its relevance, effectiveness, efficiency, Impact and sustainability. The conclusion is based on DGM&E assessment and analysis that the project is **fully relevant** with the government development priorities, **moderately effective** on the basis of plantation target, 91% percentage survival rate, height of the plantation. **Highly sustainable** in term of maintenance of plantation carries on in future and Medium risk based on survival of plants in this project if the plants mortality continues, the targets of plantation will not be achieved and lead to high risk.

## 8. RECOMMENDATIONS

- As the objectives regarding afforestation of 200 acres achieved, therefore, there is an urgent need to take care of the above stock, so that long term economic and financial objectives could be achieved.
- Periodic inspection or monitoring of the targeted sites is necessary so that, better results may be achieved in long run.
- Maintenance of plants is most important factor for its survival. So, it is a dire need to pay attention for maintenance of existing plantation.
- Proper signage of project area specially of plantation raised in targeted compartments as recorded in observations with clear land marks be erected.
- Funds worth Rs.1.200 Million for only one year (2018-19) is recommended for proper care of the plantation carried during development phase (Details in Annex-B).

**ANNEXURE A: PROJECT PICTORIAL**



**ANNUAL RECURRING COST****ANNEXURE-B**

(Rs. Million)

Year	Components	Demand of the Deptt:	Recommended by Evaluator	Recommended Recurring Cost
<b>2018-19 (ONE YEAR)</b>	Maintenance of afforestation 200 acres	2.940 @ Rs.14,700 per acre	1.200 @ Rs.6,000 per acre	To be discussed and finalize in ECM
		<b>2.940</b>	<b>1.200</b>	

**Breakup of the Expenditure: ( for One Acre)**

Particulars	Area	Demand of Deptt:			Recommended by Evaluator		
		Qty	Rate (Rs.)	Amount (Rs.)	Qty	Rate (Rs.)	Amount (Rs.)
Weeding 1 Time	1 Ac	10 CD	400	4,000	5 CD	425	2,100
Cost of plants for restocking 15% including carriage		109 No.	5	545	-	-	-
Restocking of plants	1 Ac	109	2	218	2 CD	425	850
Clearance of slots	No.	726		580	-	-	-
Reopening of trenches	1 Ac	5 CD	400	2,000	3 CD	-	1,275
Noke Safai/ Silt clearance of Khals / Passels	1 Ac	5 CD	400	2,000	4 CD	425	1,700
Irrigation 16 times		8 CD	400	3,200	-	-	-
Re-stubbing of Kana/mesquite	1 Ac	5 CD	400	2,000	-	-	-
Unforeseen expenses			L/S	157	-	L/S	75
<b>TOTAL</b>				<b>14,700</b>			<b>6,000</b>

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