



THIRD PARTY MONITORING OF BILLION TREES AFFORESTATION PROJECT IN KHYBER PAKHTUNKHWA Phase-II



**Monitoring conducted by:
WWF-Pakistan
July 2017**

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Monitoring conducted by:

World Wide Fund for Nature Pakistan (WWF-Pakistan)

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LIST OF ABBREVIATIONS

AT	Agror Tanawal
BTTAP	Billion Trees Tsunami Afforestation Project
CCF	Chief Conservator of Forest
CDE&GAD	Community Development, Extension & Gender & Development
CF	Conservator of Forest
Cft	Cubic feet
D I Khan	Dera Ismial Khan
DFO	Divisional Forest Officer
FD	Forest Department
FGDs	Focused Group Discussions
FP&M	Forest Planning & Monitoring
Ft	Feet
GIS	Geographic Information System
GPS	Global Positioning System
Ha	Hectare
I&HRD	Institutional & Human Resource Development & Management
JFMCs	Joint Forest Management Committees
KIIs	Key Informants Interviews
KPK	Khyber Pakhtunkhwa
LPG	Liquid Petroleum Gas
M	Meter
MAPs	Medicinal Plants
NGO	Non-Government Organization
NTFPs	Non Timber Forest Products
PSC	Project steering Committee
Rft	Running feet
R&D	Research and Development
RS	Remote Sensing
SDFO	Sub Divisional Forest Officer
Sft	Square feet
TORs	Terms of reference
UNDP	United Nations Development Programme
VDCs	Village Development Communities
WWF-Pakistan	World Wide Fund for Nature-Pakistan

EXECUTIVE SUMMARY

The “Billion Trees Afforestation Project in Khyber Pakhtunkhwa” shortly called as the BTAP is aimed at planning, designing, commencing and implementing “Green Growth Initiative” in the Forestry Sector of Khyber Pakhtunkhwa Province. The project is being implemented by the Khyber Pakhtunkhwa Forest Department in the entire province through its three forest regions i.e. Southern and Central region, Malakand region and Hazara region. Hazara region also includes the Watershed Management Circle.

This document is the Final of the three-report series of the third-party monitoring of the Billion Tree Afforestation Project. The first report was submitted in March 2016 covering all the Phase-I activities of the Billion Tree Afforestation Project (BTAP), while the second report was submitted in February 2017 covering activities of Phase-II till December 2016. Present report covers activities undertaken in Phase-II from January 2016 to June 2017.

The report presents an overall and region wise analysis of the monitoring information both in graphic and tabulated forms while detailed information at divisions and sub-divisions levels are provided as appendices. Field monitoring of the interventions carried out in 28 territorial and watershed divisions of the KPK FD covering 20% of the implemented activities except farm forestry and enclosures, which is 10%.

In order to ensure unbiased and effective monitoring a combination of various approaches and tools were employed during this assignment. These were aimed at collection of required quantitative and qualitative data as well as triangulation of collected information. These tools included desk review of secondary information, Key Informants Interviews (KIIs), Focused Group Discussions (FGDs) with project staff and beneficiaries, and detailed field surveys. For field surveys a combination of systematic random sampling technique were applied. A monitoring team of 18 professionals consisting of foresters, environmentalists, GIS experts and social scientists were launched to carry out this monitoring.

Against the total target of 2,850 closures under Phase-II the department had established 4007 closures showing an over achievement of 21.17%. The team monitored 403 closures with an area of 25009 ha while detailed data was collected in 253 closures having an area of 15682 ha. The average number of seedlings per ha was found to be 2412 showing a slight improvement as compared with the last year figures.

By end of June 2017 a total of 103973 ha plantations had been carried out by the KP Forest Department. Out of the total achieved target of 103973 ha plantations, WWF-Pakistan monitored 23221.13 ha at 263 sites with 53 sites in Southern Region, 71 in Malakand Region, 61 in Hazara Region and 78 in Hazara Watershed Circle

The average survival rate of block plantations was 84.79 % and while in roads and canal side plantations was 83.54 %. The overall survival rate of plants in woodlots was 75.84%. Under the phase-II a total of 15,000 ha were targeted to be planted through seed sowing and dibbling out of which 14,083 ha had been achieved by end of June 2017 with average 1473 per hectare number of sprouted seeds. Along

with conducting monitoring of Phase-II plantation, in 18 forest divisions monitoring of Phase-I plantation was re-monitored. The average survival rate was slightly reduced from 86.6 % to 85 % after two years.

Under the rehabilitation of saline and waterlogged areas a total of 9,884.3 ha had been treated against the target of 1000 ha out of which 2633 ha area was monitored. Suitable species had been planted with an overall survival rate of 83.4 %.

Out of the total target of 950 ha under reclamation of bad sites, the KP FD has treated 962 ha by end of June 2017. The WWF-Pakistan team monitored 326.36 ha (33.92%) of bad sites treated with various measures and techniques. The rehabilitation measures included loose stone check dams, gabion check dams, gabion spurs, vegetated loose stone retaining walls, soft gabion check dams, brushwood check dams, brushwood layering, cutoff drains and plantations mostly in Upper Dir, Alpuri, Kalam, Hazara Tribal, Siran, Unhar watershed and Buner watershed. Survival rate of vegetation material used in bioengineering structures was ranging from 82.79% in Daur Watershed to 35% in Bunner Watershed.

A target of 10 degraded watersheds had been fixed under Phase-II of the BTTAP project. By end of June 2017, six degraded watersheds have been treated i.e. Numla Badala in Bakot area, Narbeer in Manshera, Gulibut in Kohistan watershed, Sobatchari in Unhar watershed, Manoor in Kaghan and Jalora in Balakot area of Kaghan forest division. The WWF-Pakistan's team monitored the Numla Badala watershed in Kunhar Watershed Division during Part-1 and Jalora in Kaghan Forest Division during Part-2. Management plans have been developed for all these Six areas and have been submitted to the HR Directorate, which have been approved by the PD BTAP.

Under Departmental Forest Nurseries, the project had set a target of establishing 35 ha of potted and 136 ha bare-rooted nurseries to raise 60.04 million seedlings; 43.24 million through tube and 16.80 million seedlings through bare rooted nurseries. By end of December 2016 a total 182 ha departmental nurseries were established. Out of the 182 80.26 ha departmental nurseries (21.69 ha of tube and 58.57 ha of bare rooted nurseries) were monitored.

Total plants raised in the departmental tube nurseries monitored by WWF-Pakistan were 25.30 million out of which 5.83 million had been extracted and transported to plantation sites while 19.48 million were available for monitoring. The overall average success rate of seedlings in tube nurseries was found to be 85.80%. The net successful seedlings were 16.69 million out of which 10.43 million seedlings (62.52%) were fit for planting while 6.25 million (37.48%) were unfit at the time of monitoring. In bare rooted nurseries 5.88 million seedlings had been raised out of which 3.30 million had been extracted and transported to the plantation sites while 2.58 million were present at the time of monitoring. The overall average success rate of bare rooted plants was found as 89.45% i.e. a total of 2.31 million seedlings were assessed to be surviving in the nurseries out of which 91.68% were fit for planting while 8.38% were unfit.

A total of 8,990 units of private nurseries had been established out of which the WWF-Pakistan's monitoring team monitored 1668 units i.e. 18.55% of the achieved target. In private potted nurseries the overall survival rate was 91 % having 30.87 million survived seedlings out of which 20.23 million (65.45%) were ready for planting. In private bare rooted nurseries the survival rate was about 89.14%.

Out of the total 5.74 million successful seedlings 89.32% were of plantable size while 16.20% were still small and unfit for planting

Under the farm forestry 52.06 million seedlings had been distributed by the respective forest and watershed divisions. Out of this a total 5.1 million seedlings were monitored and verified. The overall survival rate was 61.27 % which is quite acceptable keeping in view different priorities and practices of the farmers.

Regarding capacity building the HRD unit of the KP Forest Department had conducted a series of trainings and trained over 7500 community members and local staff trained (including 1087 women).

As of March 2017, the NTFP directorate had conducted four baseline studies on NTFPs two each in Hazara and Malakand circles. Moreover, it had distributed 400 boxes of honey bees in Southern circle

The R&D directorate had initiated impact assessment of closures established during Phase-1 in three ecological zones i.e. Sub-tropical Broad-leaved and Scrub Forest, Chir Pine Forest, and Moist Temperate Forest. By end of March the R&D directorate had completed data collection while report writing was in progress.

In nutshell, the project has done an excellent job. Based on the data collected and general observations we come to the conclusion that by end of June 2017 the KP Forest Department under the BTTAP had planted 872.3 million seedlings through establishment of closures in degraded natural forests; block plantations and sowings on private, communal and state lands including the natural regeneration in these areas; linear plantations along roadsides and canal sides; woodlots on private farm and marginal lands; plantations and sowing on badlands and saline and waterlogged areas; provision of seedlings to farmers for linear plantation along farmlands. Out of these plantations 774.13 million are successful with an overall average survival rate of 88.75%.

Of the total 872.3 million plants about 59% comes from closures followed by 13.65% from Block plantation. Contribution of Farm Forestry & Mass Plantation Events, Woodlots, Sowing and Dribbling and Reclamation of saline and water-logged areas are 6.77 %, 6.62 %, 5.21 % and 4.94 % respectively.

Considering the overall species composition in all interventions of BTAP during Phase-I & II, Chir was raised more in quantity i.e 21 % of the total plants raised followed by Eucalyptus (19 %). Kail, Santhia, Phulai and Poplar were 14%, 7%, 6% and 5% respectively.

The project besides providing job opportunities to farmers through private nurseries has also engaged hundreds of thousands of labor in establishment of closures, carrying out plantations and soil conservation works.

1 INTRODUCTION AND BACKGROUND

1.1 Introduction to this document

This document is the third and final report of the three-report series of the third-party monitoring of the Billion Tree Afforestation Project. The first report was submitted in March 2016 covering all the Phase-I activities of the Billion Tree Afforestation Project (BTAP), second report was submitted in March 2017 covering activities of Phase-II (Part 1) till December 2016 while the present report covers activities undertaken from January to June 2017 along with activities of the second report carried out under Phase-II (Part-2).

The report presents an overall and region wise analysis of the monitoring information both in graphic and tabulated forms while detailed information at divisions and sub-divisions levels are provided as appendices.

The report has been organized into 12 main chapters i.e. 1) Introduction and background of the assignment, BTAP project and WWF-Pakistan 2) Methodology; TORs, monitoring methods and the monitoring team 3) Outcome of document review; The BTAP Project design, documentation of the activities and interventions, comparison of BTAP with other similar projects, 4) Findings of the field monitoring 5) Assessment of contracts/project vis-à-vis Government of Khyber Pakhtunkhwa safeguard policies and national environmental legislation/regulations, 6) Unmitigated environmental issues observed during field investigations 7) Project impacts 8) Best practices and lessons 9) Capacity building needs 10) Best performing staff members 11) Issues and constraints and 12) Conclusion and recommendations

A separate section titled “Project photo gallery” has been provided at the end of the document giving photographic evidences in support of the findings.

1.2 The Billion Trees Tsunami Afforestation Project

The “Billion Trees Afforestation Project in Khyber Pakhtunkhwa” shortly called as the BTAP is aimed at planning, designing, commencing and implementing “Green Growth Initiative” in the Forestry Sector of Khyber Pakhtunkhwa Province. The project is being implemented by the Khyber Pakhtunkhwa Forest Department in the entire province through its three forest regions i.e. Southern and Central region, Malakand region and Hazara region. Hazara region also includes the Watershed Management Circle. The project has been split into two phases i.e. Phase-I with a total cost of Rs 1912.0 million has been implemented during 2014-15, while Phase-II with a total cost of Rs 9826 million is under implementation during 2015-2017. Major objectives of the project are;

1. Support Khyber Pakhtunkhwa Forest Department, as a catalyst, to plan, design, and launch sustainable development in the Forestry Sector through active involvement of local communities;
2. Rehabilitate and improve existing forest ecosystems of the province through arresting environmental degradation;

3. Enhance forest resource base for livelihood improvement and job creation for rural youth at their door step.

The physical targets set for the Phase-II of the project are;

- Closure of depleted designated forests for increasing natural regeneration: 3500 VDCs
- Planting of multi-purpose fast growing tree species on communal and private lands between the natural forests and farmlands: 105000 ha
- Planting of multi-purpose tree species on woodlots: 30000 ha
- Plantation through sowing and dibbling: 15000 ha
- Rehabilitation of degraded watersheds: 10 watersheds
- Reclamation/ Rehabilitation of bad sites through soil water conservation measures, bio-engineering structures and planting of drought resistant species: 950 ha
- Reclamation of saline and water-logged areas: 1000 ha
- Planting along road, canal and railway tracts: 2000 ha
- Farm Forestry & Mass Plantation Events: 87.13 million plants
- Promotion of non-timber forest products like medicinal plants, mushrooms and honey: 4 Valleys/ sites
- Establishment of Central Model Nurseries (departmental nurseries):
 - Tube: 35 ha
 - Bare rooted: 136 ha
 - Walnut and Pecan: 28 ha
- Establishment of private forest nurseries (25000 plants/ unit):
 - Tube: 8497 units
 - Bare rooted: 1600 units
- Capacity building of farmer communities and entrepreneurs: 8000 persons
- Support Activities of Integrated Specialized Units (Directorates): 06 directorates

The project is executed by the KPK Forest Department through BTAP project directorate and implemented in 28 forest and watershed divisions of the three forest regions i.e. Central Southern, Malakand and Hazara. The forest and watershed divisions are supported by the specialized units of Forest Planning & Monitoring (FP&M), Community Development, Extension & Gender & Development

(CDE&GAD), Non-Timber Forest Products (NTFP), Research and Development (R&D) and Institutional and Human Resource Development (I&HRD) for internal monitoring, social mobilization, NTFPs, research and capacity building.

1.3 A brief introduction of WWF-Pakistan

WWF-Pakistan is an autonomous body registered under the Pakistan Societies Act of 1860 and governed by a Board of Governors. Established in 1970, the World-Wide Fund for Nature-Pakistan (WWF-Pakistan) is a not-for-profit organization, committed to: the conservation of the country's rich biodiversity; the sustainable use of natural resources; and the promotion of actions to reduce pollution and wasteful exploitation and consumption of resources. WWF-Pakistan is part of the global WWF Network, one of the world's largest and most experienced independent conservation organizations, with active on-the-ground conservation projects in more than a hundred countries.

WWF-Pakistan is currently the largest conservation NGO in Pakistan. With its Head Office in Lahore, six regional offices and 25 project site offices, WWF-Pakistan has a presence in all the provincial capitals, as well as outreach in targeted field sites and protected areas through project offices.

Due to its involvement in different aspects of biodiversity, WWF-Pakistan has rich experience in working in different ecosystems and geographical areas. WWF-Pakistan has successfully implemented projects and conducted studies in protecting and expanding forest cover.

2 METHODOLOGY

2.1 Terms of reference and scope of monitoring

Based on its best performance during the BTAP phase-I monitoring, maintaining independent and unbiased position and adopting well-conceived and widely accepted methodology, WWF-Pakistan has been assigned the task for the second time to conduct the third-party monitoring of BTAP Phase-II.

The third-party monitoring is aimed at ensuring transparency, quality, and effective and judicious utilization of development funds under the BTAP project. To achieve this objective, the scope of this assignment goes a step beyond monitoring and becomes a sort of evaluation. In addition to monitoring of the activities undertaken under the BTAP project the assignment includes tasks like review of project design, impacts, environmental compliance, capacity needs and best practices and lessons.

As mentioned in the TORs given as appendix-A the current report covers activities and interventions undertaken during Jan-Dec 2016 while the third report will cover activities from January-June 2017. WWF-Pakistan has already submitted the second report in March 2017 and this is the third report covering activities from January-June 2017. (Appendix-A):

- Introduction
- Study methodology
- Outcome of document review
- Outcome of the field investigations
- Unmitigated environmental issues observed during field investigations
- Salient gaps and outstanding experiences

- The socio-eco impact
- The analysis of activities
- The analysis of ISUs work
- Assessment of contracts/project vis-à-vis Government of Khyber Pakhtunkhwa safeguards policies and national environmental legislation/regulations.
- Capacity building needs
- Conclusions and recommendations
- Appendices (photographs, and any other relevant supporting details).

2.2 Field monitoring methods

With slight modifications, the same methods as employed during the first phase were used during the second phase monitoring. Similar approaches and tools were used consisting of desk review of secondary information, Key Informants Interviews (KIIs), Focused Group Discussions (FGDs) with project staff and beneficiaries, and detailed field surveys and data collection through sample plots.

1. Project documents, management plans, progress reports, compartment history files, nursery journals, plantation records and internal monitoring reports along with maps and other available data were reviewed to have a clear picture about the implementation approaches, designs, location, extent and status of works carried out during Phase-II.
2. The information collection checklist, questionnaires and data collection tally sheets were reviewed and updated based on the secondary data review and consultations with the BTAP project team. More parameters such as counting of natural regeneration in plantations and signs of biodiversity in closures were also added.
3. Like last year this time too the field survey tools and techniques were pilot tested and refined. Moreover, the field staff was also trained in use of these tools and techniques.

Similarly, the combined stratified random and systematic sampling design as adopted during phase-I were also used during phase-II. The target areas and sites were stratified according to the administrative, geographic and ecological characteristics. Moreover, it was ensured that all forest regions and forest divisions including ecological zones/ forest types falling in these regions and divisions are covered with proportionate sample size based on the work carried out.

For sites selection list of sites in each forest division and ecological zone of each intervention were prepared and numbered. The random numbers were generated and selected from the lists keeping in view the total target to be monitored under each intervention.

Comparing with the last year's works this time the quantity of implemented works was almost five times more. This year up to twenty percent of the total implemented targets was monitored (Table-1). Two sets of information were collected in the field that is; 1) general aspects and management related information and 2) specific monitoring data collected through sampling.

For block plantations, woodlots, roadside, railway tracks and canals side plantations, sowing and dibbling, reclamation of saline and waterlogged areas and closures systematic plots were laid out at 100 meters spacing along randomly selected transects with five percent sampling intensity. The number of

transects and plots were worked out based on the total area of each site keeping in view its geometry and terrain. Parameters like altitude, aspect, soil, slope, species, total number of plants planted, survival rate, spacing, pit size, species wise naturally regenerated plants and signs of damage were recorded in each fixed circular plot measuring 1000 m². Prior to plots/ transect surveys location of each site was recorded and area measured using GPS.

For interventions like rehabilitation of degraded watersheds and reclamation of bad sites a combination of methods was used. General information about existence of management plans, designs of planned structures, communities' involvement etc. were collected. For plantation works under these categories the abovementioned method used of block plantations was used while for the soil conservation and reclamation structures such as engineering and bio-engineering and other structures 10% sampling intensity was adopted and data about parameters such as location, design, size, material used, species planted, spacing and survival rate were collected. Moreover, general observations regarding implementation modalities, site suitability, species suitability and designs were also recorded.

Plants distributed among the farmers under the farm forestry and mass plantation intervention were verified from the list of farmers provided by the concerned CDOs and forest staff in each forest and watershed division. The verification was done in two stages i.e. first interviewing the randomly selected beneficiaries either face to face or through telephone and second physically verifying the planted plants. Ten percent of the total distributed planting stock was verified randomly from the lists and parameters like species wise number of plants received, number of plants planted and survival rates were recorded.

For nurseries two types of information were collected; information from the nurseries' records and data based on actual observations, measurements and counting through sampling. Location of each nursery was recorded and area measured using GPS. This was then followed by species wise counting of 10% of the planting stock, survival rate and plant-able and un-plant-able sizes. Moreover, nursery management operations such as cleaning, weeding, watering, shifting and root pruning were also recorded.

Regarding activities undertaken by the Integrated Specialized Units/ Directorates such as FPM, CD&GAD, R&D, NTFP and HRD their plans were reviewed, progress and results assessed and verified using questionnaires, checklists and field observations. As the CD&GAD was mandated the social mobilization process for the establishment of closures and free distribution of seedlings among farmers, there progress, results and impacts were assessed along with these activities. The R&D being responsible for conducting relevant research to support the BTAP interventions, their research studies were reviewed and validated. Similarly, the NTFP directorate was given the task to conduct four studies regarding NTFPs and distribution of 400 Honey bee Boxes in southern districts of KP. Their progress was assessed through interviews of the project staff and beneficiaries and then finally verified through field observations. The HRD had been assigned the task to train farmer communities, entrepreneurs and community Negahbans (watchers) in effective nursery raising, planting, sowing and watch and ward techniques. Their progress and results were assessed through interviewing the staff and beneficiaries as well as field observations during monitoring of nurseries, plantations and closures.

Present and intended ecological, social and economic impacts of the project interventions were also assessed on the bases of the above-mentioned field monitoring data for each intervention.

Best practices along with best performing beneficiaries and project staff that showed commitment, achieved good results and implemented innovative ideas were also identified and documented during field monitoring. A list of criteria was developed and the interventions and individuals were assessed using these criteria (

Table 1: Targets achieved and monitored (Phase-II till 31 Dec 2016 & June 2017)

Activity	Target PC-1	Target Achieved by FD (Phase-II)	Target Monitored (Till Dec 2016)	Target Monitored (Till June 2017)	Target Monitored (Total)	%
Closure of depleted designated forests for increasing natural regeneration (No.)	2850	4007	362	41	403	10
Planting on communal and private lands between natural forests and farmlands (ha)	105000	103973	15888	7332.4	23221.13	22.34
Woodlots (ha)	30000	13418	1827.6	795.47	2623.07	19.55
Sowing and Dibbling (ha)	15000	14082.6	3935	824	4759	33.80
Rehabilitation of degraded watersheds (number of watersheds)	10	6	1	1	2	33.33
Reclamation/ Rehabilitation of bad sites (landslips and landslides) (ha)	950	962.17	227.06	99.3	326.36	33.92
Reclamation of saline and water-logged areas (ha)	1000	9884.3	2364	269	2633	26.63
Planting along road side, canal side and railway tracts (ha)	2000	2664.7	745.9	49	794.9	29.83
Farm Forestry & Mass Plantation Events (Million plants)	87.13	52.07	5.10	0	5.10	9.79
Establishment of Central Model Nurseries-Tubes (Ha)	171	182	79.929	0	79.929	44.03
Private forest nurseries (No of units; 1 unit=25,000 plants)	10097	8990	1668	0	1668	18.55
Capacity building of farmer communities and entrepreneurs (No. of beneficiaries)	8000	7500	2056	160	2216	29.54
Promotion of non-timber forest products (medicinal plants, mushrooms and honey) (Valleys/ Sites)	400 Honeybee Boxes and 4 reports	400 Honeybee Boxes and 4 reports	100 Honeybee Boxes and 4 reports	0	100 Honeybee Boxes and 4 reports	25%

2.3 Monitoring team and coordination

The monitoring team consisted of experts, field monitors and surveyors. The monitoring team was split into three units i.e. the coordination and implementation unit, the experts' unit and the field surveyors and monitors (Table-2).

Table-2: Monitoring team

Name and title	Role	Thematic Area/ Expertise
Rab Nawaz, Biodiversity expert	Overall supervision	Oversee all the process and provide overall directions. Give input in biodiversity related aspects
Muhammad Ibrahim Khan, Senior Manager Forests WWF-Pakistan	Team leader/ Forest Monitoring and Watershed management specialist	Overall technical support in designing the monitoring tools and surveys. Watershed Management and Badlands reclamation. Documentation of best practices and development of overall monitoring report.
Syed Kamran Hussain, Manager/ Head KP region WWF-Pakistan	Management and coordination/ forest inventory and survey expert	Overall management and coordination of the monitoring teams. Expertise in forest inventories, surveys and mensuration. Data compilation and analysis
Muhammad Waseem, Project Coordinator Watershed Project WWF-Pakistan	Coordination in Hazara Region Bio-engineering expert	Coordination of field teams in Hazara Region
Malik Mudassar Ahmad, Environmentalist	Coordinator and field monitor	Hazara region
Gul Rukh, Biologist	Field monitor	Hazara region
Ahmad Raza, Environmentalist	Field monitor	Hazara region
Murtaza Ali, Sociologist	Field monitor	Hazara region
Haider Ali, Environmentalist	Field monitor	Hazara region
Haleema Saad, Forester	Coordinator and field monitor	Central and South Region
Faheem Ullah, Forester	Field monitor	Central and South Region
Atif Ullah, Forester	Field monitor	Central and South Region
Muhammad Hanif, Forester	Field monitor	Central and South Region
Ijaz Ahmad, Environmentalist	Coordinator and field monitor	Malakand region
Kamran Khan, Forester	Field surveyor	Malakand region
Muhammad Hashim Khan, Forester	Field surveyor	Malakand region

3 OUTCOME OF THE DOCUMENTS REVIEWED

3.1 The BTTAP Project design;

Comparing with phase-I, the phase-II project document is very much improved. Most of our previous comments have been properly incorporated and addressed.

- The concept, objectives, process of establishing closures and its record keeping has been explained thoroughly and systematically. The timeframe for management of closures has been given as four years; i.e. after post project the community watch and ward system will remain functional till June 2020. However further details of future management as well responsibilities of stakeholders after expiry of the project are again missing.
- Adoption of Forest is an excellent approach to rehabilitate the degraded forests through corporate and NGO partners. Its again very well-conceived concept, however to put this into practical approach would be needed on the part of the KP Forest Department to access and motivate the donors and partners. Moreover, adopt a forest would need some legal coverage to safeguard the interest of all parties involved as well as prevent any misuse and grabbing of state land by any group or individual.
- Our last years' findings and recommendations regarding planting of multi-purpose fast growing tree species on communal, private and state-owned lands have been fully incorporated in the Second phase PC-1. The process, planting standards including pit size, spacing, choice of species, watch and ward and post plating management have been explained thoroughly.
- Further clarity provided on the rehabilitation and reclamation of degraded watersheds, badlands and saline and waterlogged areas. The PC-1 has made it mandatory to develop management plans before hand with details regarding design and specifications required for each activity to be undertaken under these categories of interventions.
- The PC-1 has also good explanation on farm forestry and mass planting events. Support from NGOs and other partners have also been explained in the PC-1, which is a good approach.
- The project has also improved in privatizing the production of seedlings. This year more targets have been allocated to private nursery growers than the department. More targets specified for different segments of society i.e. youth, senior citizen, women and progressive farmers are worth appreciation.
- New category of semi forest and fruit nurseries of Walnut and Pecan is again an innovative approach to attract farmers to plant the highly threatened walnut species in Pakistan as well as raise the income of the farmers.
- As recommended last year, provision regarding awards for best performing professionals has been given in the PC-1.
- The PC-1 also gives good explanation regarding roles and responsibilities of ISUs/ directorates including their targets in the BTAP project. Community mobilization process properly explained, capacity building by the ID&HRD directorate, major interventions for promotion of NTFPs in four valleys by the NTFP directorate and development of applied research agenda and assessment of closures and standardization of the mechanism for closures by the R&D directorate.

- Though the second phase project document covered most of our comments yet an important one regarding future management of the interventions carried out under this project is still not addressed. The R&D directorate in partnership with the PFI could have been given this role.

3.2 Documentation of the activities and interventions

Like last year this year too availability and status of all documentation such as nursery journals, plantation journals, management plans, MoUs and agreements of all the activities and interventions were reviewed. Following are the general findings regarding documentation;

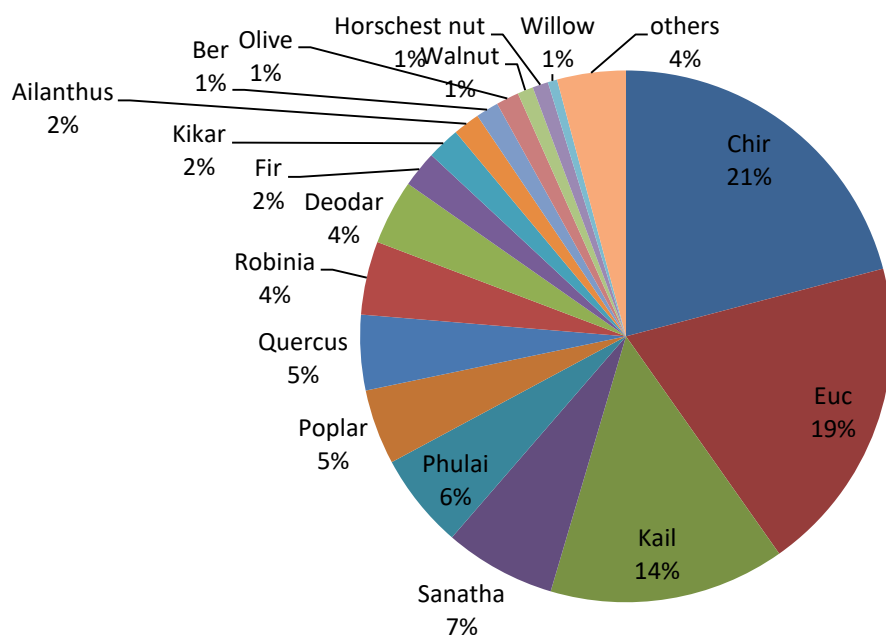
- Regarding departmental nurseries 100% nurseries had nursery journals out of which 91% had been maintained properly.
- Regarding private nurseries documentation was improved as compared to the previous phase but still in 60% nurseries there was no such formal documentation. It is therefore recommended to develop a system of documentation of the private nurseries as well.
- For departmental plantations, formal plantation journals were maintained for 166 sites while 11 sites had partially maintained plantation journals and other documentation.
- Regarding forest enclosures 100% of the sites had been notified with proper agreements signed by the concerned DFOs and community representatives. However, there were no formal management plans available for any of these enclosures.
- Regarding farm forestry during phase-II all the 28 forests and watershed divisions had properly maintained record containing name, address and contact of beneficiaries and number of plants provided.
- For rehabilitation of badlands, saline and waterlogged areas there were no management plans as well as plantation journals however some basic information including measurement of different structures were available and provided to the monitoring team.

4 FINDINGS OF THE FIELD MONITORING

4.1 Progress on the BTTAP interventions (quantitative and qualitative progress)

4.1.1 Overall species composition in all interventions

Considering the overall species composition in all interventions of BTAP during Phase-I & II, Chir was raised more in quantity i.e 21 % of the total plants raised followed by Eucalyptus (19 %). Kail, Sanitha, Phulai and Poplar were 14%, 7%, 6% and 5% respectively.



Overall species composition in all interventions

4.1.2 Closure of depleted designated forests for increasing natural regeneration and restoration of landscape ecosystem

Under the BTTAP project areas of degraded natural forests having 10 to 30% tree cover and sufficient number of mother trees are closed against grazing and other anthropogenic activities for a specified period of four years to support the recovery of natural vegetation of the forest including biodiversity.

In Phase-II the scope of establishing closures has been broadened both in terms of objectives and process. Regarding objectives forest landscape restoration has been added along with encouragement of natural regeneration of local and indigenous species in designated and non-designated natural forests. Regarding process of establishing closures, some good points have been added. These include clarity of roles and responsibilities of different stakeholders, definition of degraded patches of natural forests by providing a range of forest density (10-30%), inclusion of communal or private forests, establishment of baselines and mapping including fixed point photography, increasing the minimum area of closure from 40 ha to a forest compartment, fencing of strategic and vulnerable points and social

profiling including community rights. Moreover, during phase-II the wildlife department and watershed management circle have been assigned the task of establishing the closures.

Against the total target of 4000 closures under Phase-II the department had established 4007 closures showing an under achievement of 21.17%. The team monitored 403 closures with an area of 25009 ha while detailed data were collected in 253 closures having an area of 15682.14 ha.

Parameters like process adopted for the establishment and management of closures and the achieved results including site selection, existence of VDCs, engagement of community watchers (Community Negahban), boundary demarcation, maps and fixed-point photography, baselines studies, signs of grazing, signs of wildlife and species wise status of regeneration were recorded.

Comparing with the last year this time understanding of the concept of closures was much clear among the field staff including community watchers. However due to involvement of two departments' clarity on roles and responsibilities among the wildlife and forest department officials was still missing.

Regarding selection process and management of closures most of the interventions were followed properly except baseline studies, maps and fixed-point photography. Baseline studies had been conducted for 39.7% closures while maps and fixed-point photography were available for 21.3 % closures only (figure 1)

Selection Process and Management of Closures

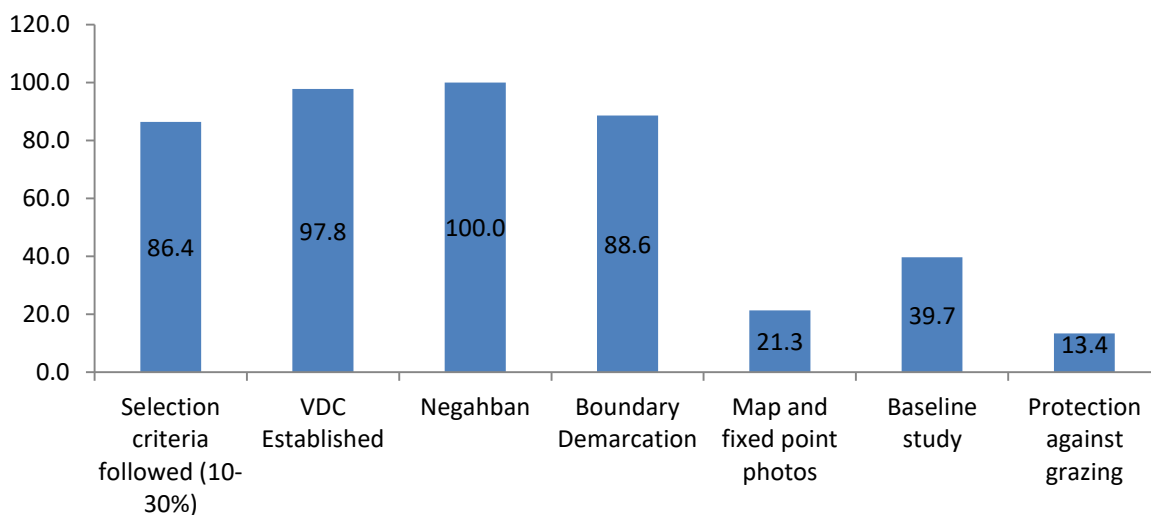


Figure 1. Selection Process and Management of Closures

The average number of seedlings per ha was found to be 2412 showing a slight improvement as compared with the data collected during Phase-II Part-1 and about 4% more than last year figures (Figure-2). This improvement could be due to more clarity of the concept, proper identification of the sites, sensitization of local communities and trainings of the community watchers and field staff.

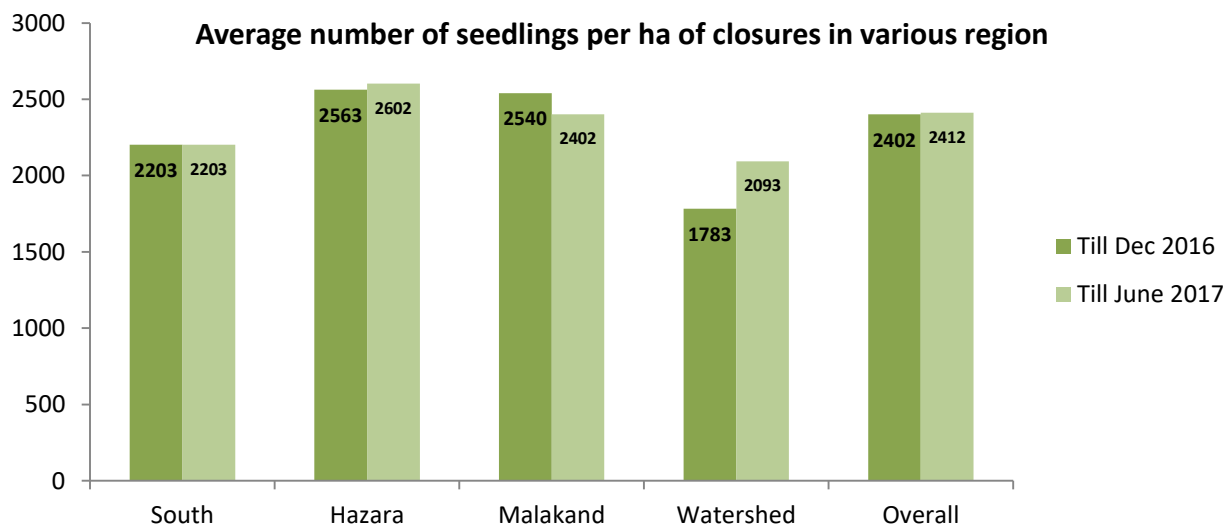


Figure 2. Average number of seedlings per ha of closures in various region

Regarding average number of seedlings per ha of closures in different ecological zones, the sub-tropical Chir pine zone is again on top followed by sub-tropical broad leaved and scrub zone, moist temperate zone, tropical thorn zone and lastly the dry temperate zone (Figure-3 and Appendix-D). Comparing with the Phase-I this time a significant increase in regeneration was recorded in closures falling in moist temperate, sub-tropical Chir pine and sub-tropical broad leaved forests while in dry temperate and tropical thorn a slight increase was noted (Figure 4).

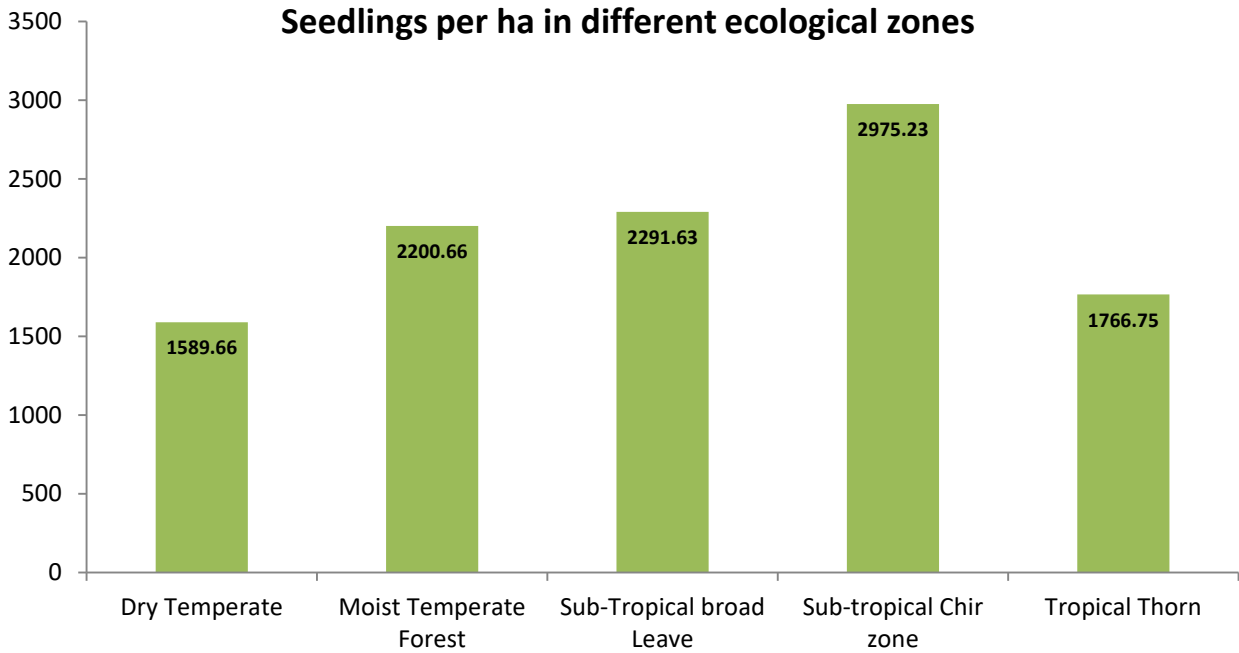


Figure 3. Seedlings per ha in different ecological zones

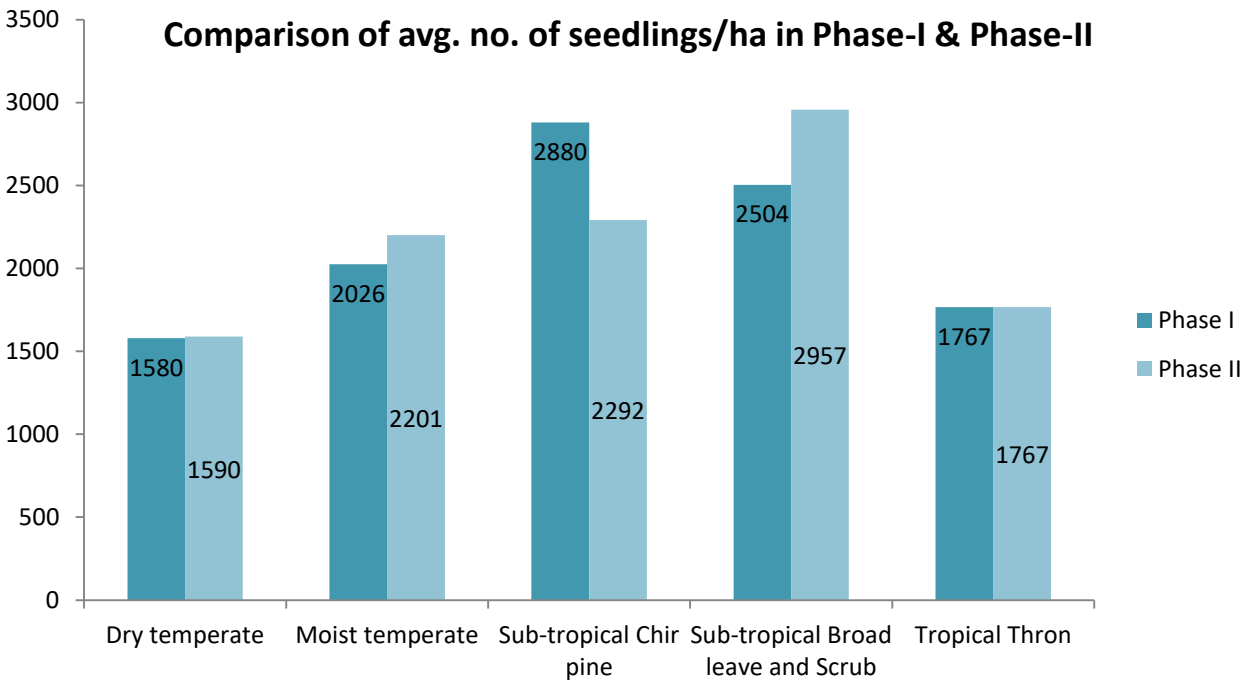


Figure 4. Comparison of avg. no. of seedlings/ha in Phase-I & Phase-II

Major species regenerated in closures are Chir pine, Blue pine, Sanatha, Quercus, Phulai, Eucalyptus, Kikar, Deodar, Olive, Ber, Fir and several the other species (Figure 5).

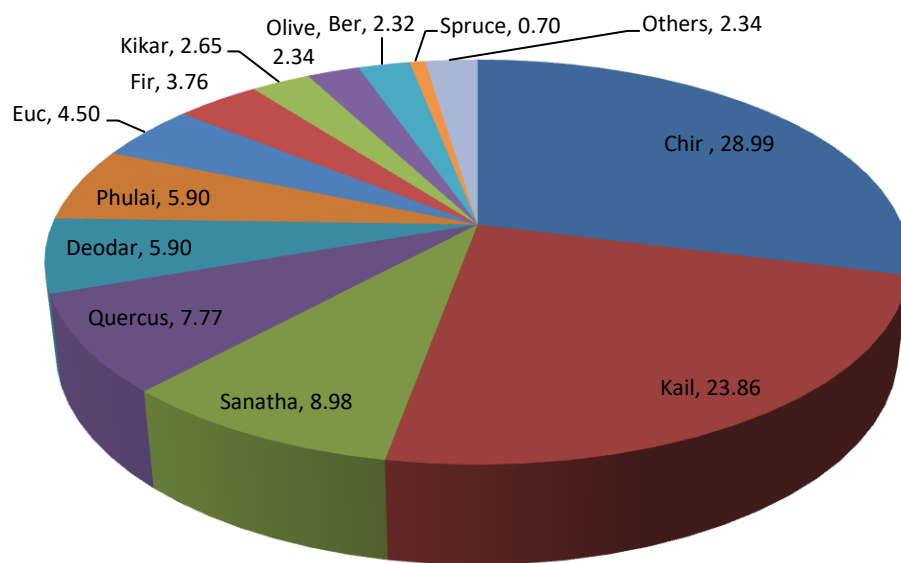


Figure 5. Major species composition regenerated in closures



Natural regeneration of Chir in Karakar Buner



Natural regeneration Shergarh Agror Tanawal

4.1.2.1 Closures of Phase-I

For comparative assessment closures of Phase-I verified and data collected, at least one closure in each ecological zone. A total of 15 closures were revisited mostly of Sub-tropical Chir Pine. The average regeneration were found 2579 per ha, which is about 11.36% more than the previous year (Table 3).

Table-3. Average regeneration in Phase-I closures

Region	Division	Sub-division	Name of VDC	Zone	Average Regeneration per ha
South	D.I.Khan	Sheikh Baddin	Saidabad	Tropical Thorn	1342
South	Kohat	Hangu	Wach Bazar	Sub-tropical board leave	2232
Malakand	Kalam	Behrain	Balakot	Dry temperate	1284
Malakand	Chitral	Chitral	Birir	Dry temperate	1432
Hazara	Haripur	Makniyal	Makniyal	Sub-Tropical Chir Pine	4378
Hazara	Gallies	Beringali	Lower Chatri	Moist temperate zone	2642
Hazara	Siran	Shankiryri	MuKhria, Khan Dheri	Sub-Tropical Chir Pine	3885
Hazara	Agror Tanwal	Sherghar	Pabel Shrif	Moist temperate zone	1763
Hazara	Agror Tanwal	Sherghar	Pabel Shrif	Sub-Tropical Chir Pine	3494
Hazara	Hazara Tribal	Hilal	Deshan Gingbori	Sub-Tropical Chir Pine	3113
Hazara	Thor Ghar	Aleema Banda	Muratta Okazai, Pakband,	Sub-Tropical Chir Pine	2801
Average regeneration per ha					2579



Closure of Haripur Forest Division Phase-1

4.1.3 Planting of multi-purpose fast growing tree species on communal, private and government lands including designated forests devoid of trees

As compared with Phase-I this time the government waste land and deforested designated forest lands were also included in addition to the communal and private lands broadening the scope of this category of plantations from just meeting the fuel wood and timber demand to rehabilitation of the existing forest ecosystems. The objective of this broadening of scope was to bring back the encroached forest lands under tree cover. According to the project document following standards had been set for carrying out these plantations (BTTAP PC-1, 2016):

- Identification of the village having areas suitable for block plantation.
- Identification of stakeholder community/owner/owners.
- Motivation of the concerned community to play its role and efforts to organize them.
- Joint demarcation of the area selected for plantation.
- Conclusion of terms of partnership (ToP) between owner / community.
- Choice of species selection jointly keeping ecological, social and economic consideration into view.
- Quality planting stock will be planted at 10' x 10' spacing after incorporating slope factor.
- Pit size will be 2' x 1.5' x 1.5' for bare-rooted & 1.5' x 1' x 1' for tube plants
- Area will be measured through GPS & mapped, while its revenue record/ fard will be obtained.
- Immediately after plantation, Chowkidar will be employed through community who will be responsible for watch & ward coupled with beating up of failure. Chowkidar will be paid after his work duly verified by the community as well as concerned staff.
- Separate history file / plantation journal will be maintained for each plantation area. History file should consist of pre-activity photo, during currency of work and after completion of work through fixed point photography coupled with GPs-Coordinates and map of the area. It will also contain detailed description of area so that change can be detected later.



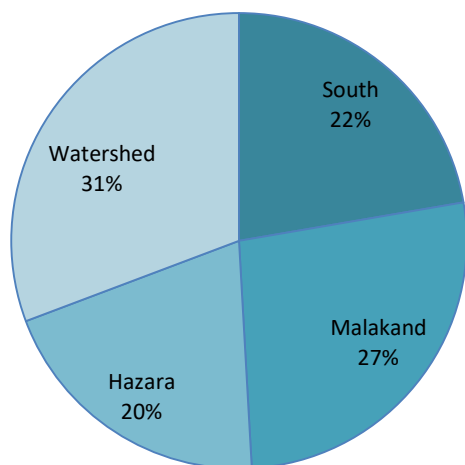
Frash and Kikar plantation D.I.Khan



Shisham Plantation in Ghazi, Haripur

By end of June 2017 a total of 103,973 ha plantations had been carried out by the KP Forest Department. Out of the total achieved target of 103973 ha plantations WWF-Pakistan monitored 15888.73 ha in round first and 7332.4 in second round which makes a total 23221.13 ha at 263 sites with 53 sites in Southern Region, 71 in Malakand Region, 61 in Hazara Region and 78 in Hazara Watershed Circle (Appendix-E).

Area wise %age of plantation monitored in different Regions



Number wise %age of plantation sites monitored in different Regions

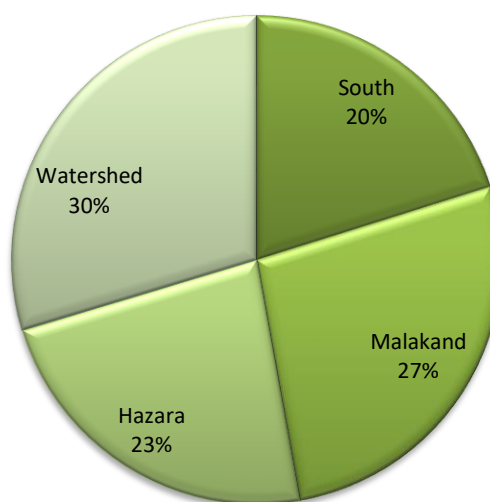


Figure 6. Area and number wise %age of plantation monitored in different Regions

4.1.3.1 *Plantation areas and number of plants planted*

The overall in Phase-II a slight shortage of 0.53% in area was recorded. On measuring the plantations' areas, a very insignificant difference of -0.60% was found in the areas claimed by the KP FD in part 1 i.e. till December 2016 and -0.37% in part 2 i.e. till June 2017. In Southern region, the areas turned out slightly more by 0.42% in part 1 and 3.40% in part 2. During part 1, in Malakand region, Hazara region and Watershed circle there was a shortage of 0.52%, 2.74% and 0.19% respectively while during part 2 monitoring watershed circle area is slightly more by 1.25 while in Malakand region, Hazara region again there was a shortage of 2.94% & 2.11% respectively (Table 4).

Similarly, 1.18% shortage was recorded in number of plants claimed by the forest department and verified by WWF-Pakistan from January 2016 to June 2017. In southern region, the shortage turned out 0.29%, in Malakand region 0.86%, in Hazara region 0.25 and watershed circle 1.16% (Table 4). Division level details are given in (Appendix-E).

Table-4. Area and Number of plants claimed and verified

Region	Area of plantations claimed and verified				Number of plants in plantations claimed and verified			
	Claimed (ha)	Measured (ha)	Difference (ha)	Percentage	Claimed (ha)	Measured (ha)	Difference (ha)	Percentage
South	5178	5237.56	59.56	1.15	5077874	5063201	-14673	-0.29
Malakand	6224.5	6141.2	-83.3	-1.34	6689222	6631831	-57391	-0.86
Hazara territorial	4681.52	4564.11	-117.41	-2.51	5086774	4959429	-127345	-2.50
Hazara watershed	7137.11	7155.62	18.51	0.26	7656394	7567804	-88590	-1.16
All regions	23221.13	23098.44	-122.69	-0.53	24510264	24222265	-287999	-1.18

4.1.3.2 Species suitability and overall survival rate

Like phase-I this time too the KP FD has planted more than 27 species in these plantations. Major species are Eucalyptus, Chir pine, Robinia, Phulai, Ailanthus, Deodar, Kikar (*A. nilotica* and *A. farnesiana*), Shisham and Bakine. Though comparing with the phase-I the Eucalyptus has been increased from 17% to 44% of the total plants plated other species have been dropped (Figure-7) while in Phase-II part 2 the Eucalyptus has been decreased 48% to 44%. The reason behind this increase was mainly farmers' preference of Eucalyptus over other species due to its fast growth, quick return, less water demand and resistance to salinity and water logging. Mostly Eucalyptus was raised in Saline and waterlogged areas of Southern districts including D I Khan, Bannu, Lakki Marwat and Kohat.

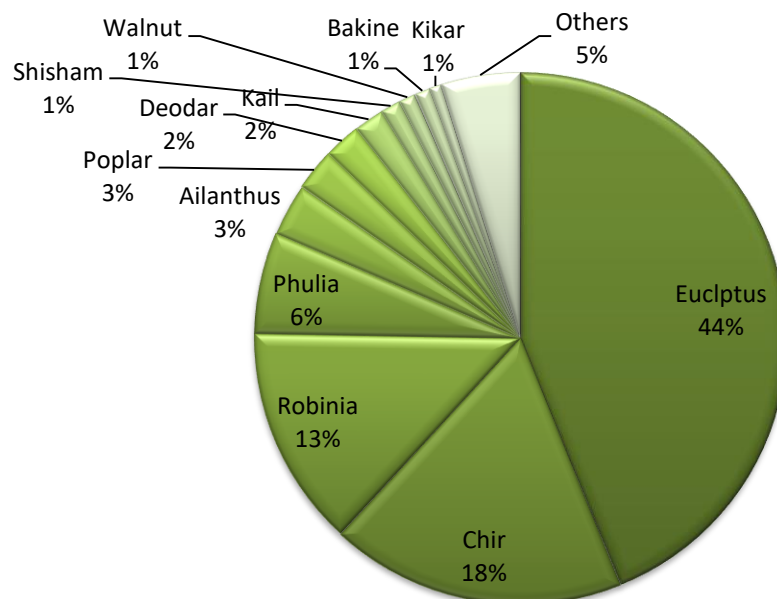


Figure 7 Species Composition in Block Plantation

The overall average survival rate of plants was found 84.79% in Phase-II with 89.73% in Southern region, 83.59% in Malakand region, 84.35% in Hazara region and 81.51% in Hazara watershed circle (Figure-8).

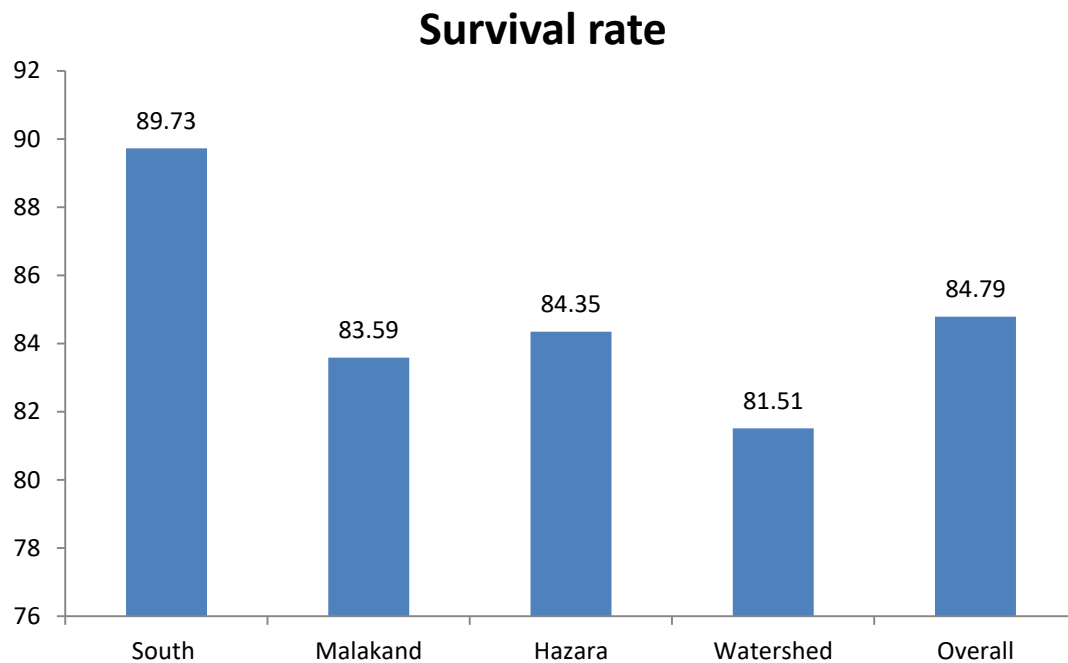


Figure 8 Overall survival rates of plants in block plantations in Phase-II

The average survival rate of plants was found 83.88% during monitoring of Part 1 i.e. till December 2016 and 84.78% in part 2 till June 2017. In Southern region survival rate was 90.17 & 83.61%, in Malakand region 83.95 & 83.42% in Hazara region 80.73 & 88.99% and in Hazara watershed circle 80.69 & 83.08 % respectively (Figure-9).

Table-5. Overall survival rates of plants in block plantations in Phase-II

S.No	Region	Avg. survival rate
1	South	89.73
2	Malakand	83.59
3	Hazara	84.35
4	Watershed	81.51
5	Overall	84.79

Though, a slight drop has been noticed in the survival rate as compared with the Phase I probably because of huge target covered under Phase II with limited human resources and long dry spell in 2016, however improvement in overall survival rate has been observed during part 2 of Phase-II.

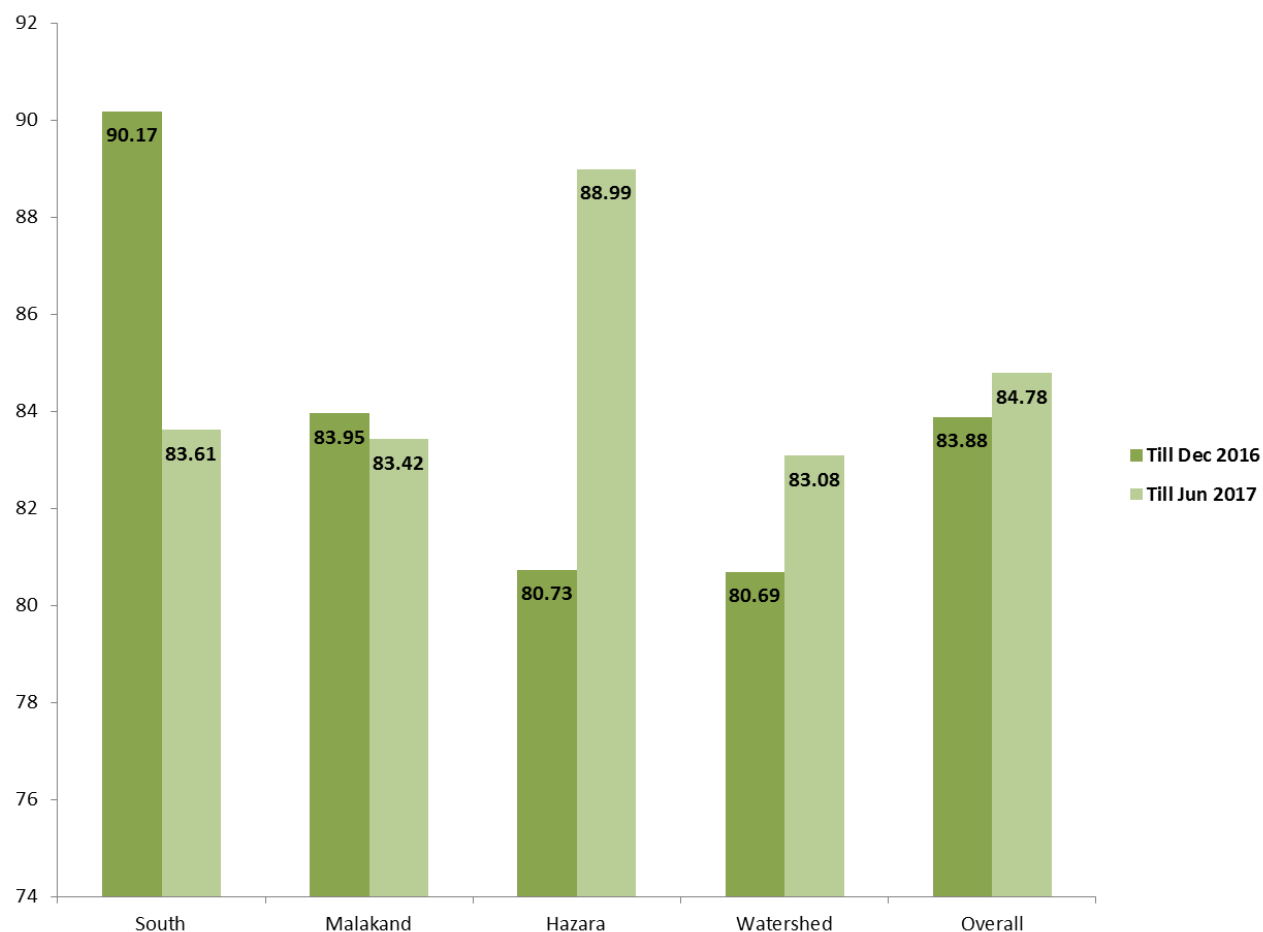


Figure 9 Average survival rates of plants in block plantations

In Southern region, the plants survival rate ranges from 83.33% in Kohat Forest Division to 93.67% in D I Khan Forest Division, the highest one. During mointering, it has been observed that the maxium survival rate especially in D.I.Khan and other southern forest divisions was mainly because of frequent visit and mointering by sernior mangment. Moreover, provision of watering has not been given in other regions, followed by extrem drought and natural fire incident has reduced the survival rate in Malakand and Hazara circle. In Malakand region, the average survival rate ranges from 70.56% in Alpuri to 92.30% in Chitral. In Hazara it ranges from 76.17% in Haripur to 90.17% in Thor Ghar forest division. Similarly in watershed circle the survival rate ranges from 78.38% in Kohistan to 85.85 in Kunhar watershed division (Figures: 10, 11, 12 & 13).

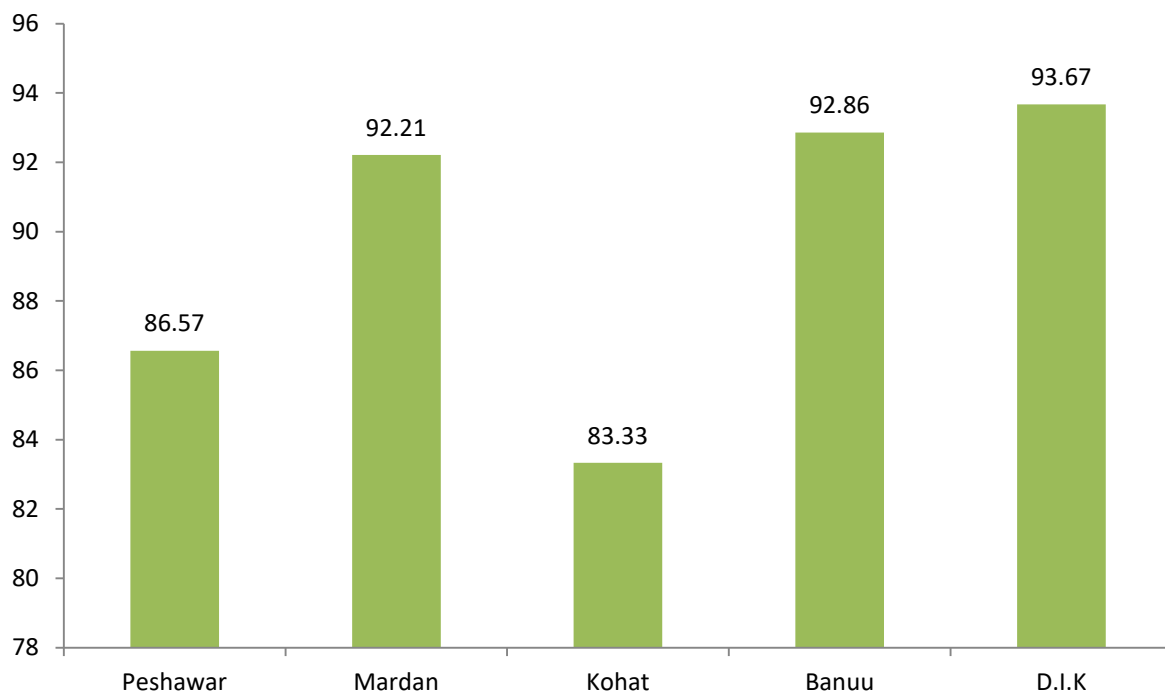


Figure 10 Division wise survival rate in Southern region

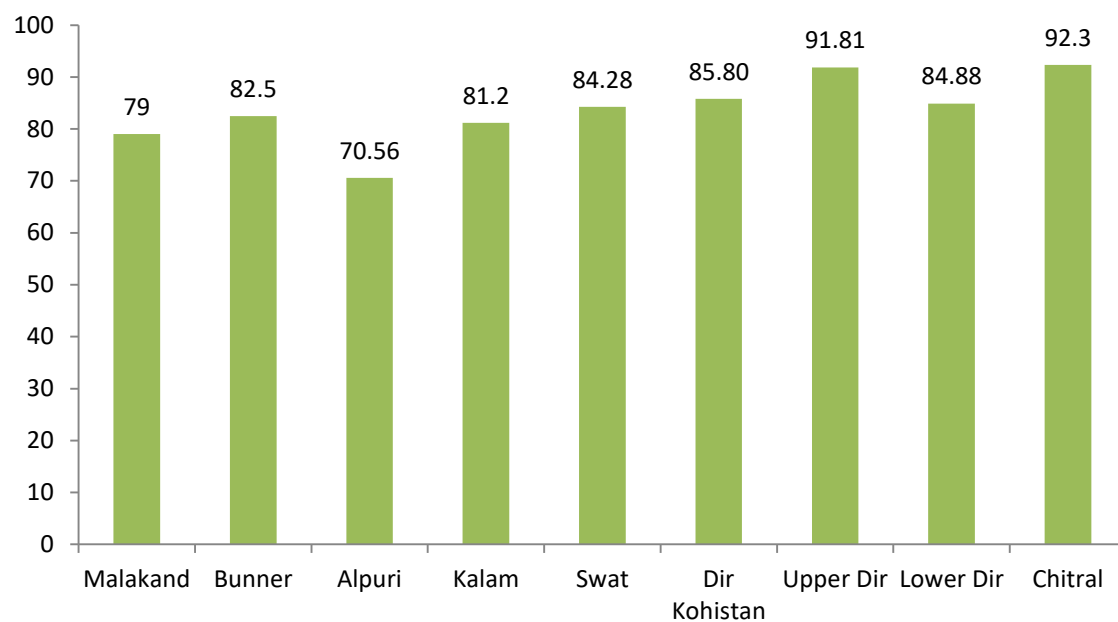


Figure 11 Division wise survival rate in Malakand Region

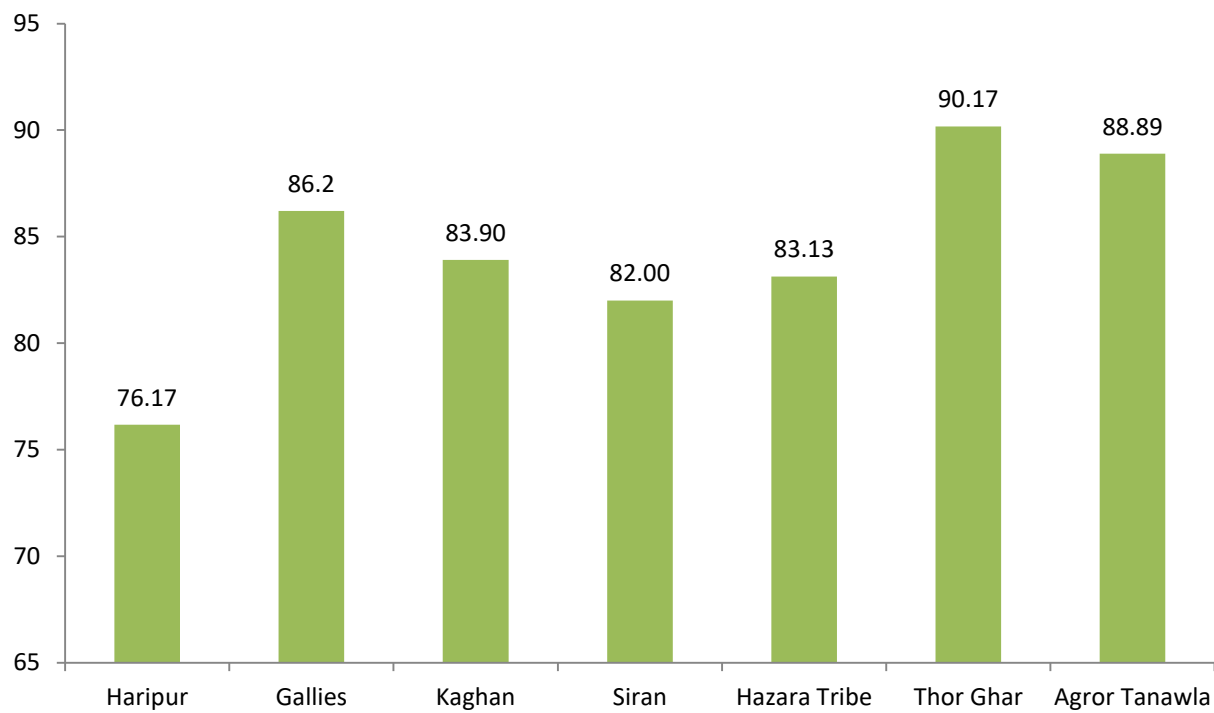


Figure 12 Division wise survival rate Hazara region

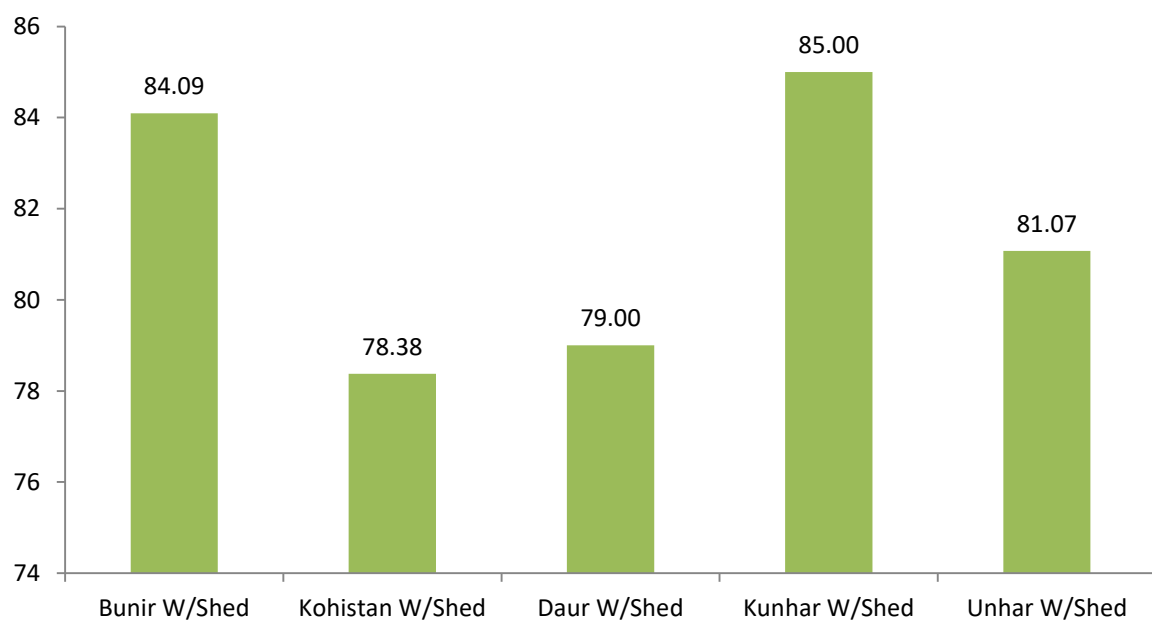


Figure 13 Division wise survival rate in Watershed

This year the monitoring team also collected data on plants coming up naturally due to protection and improved management of the plantation areas. On average 27 seedling were recorded per hectare. This is an added benefit and an indicator of good maintenance and management (Figure 14).

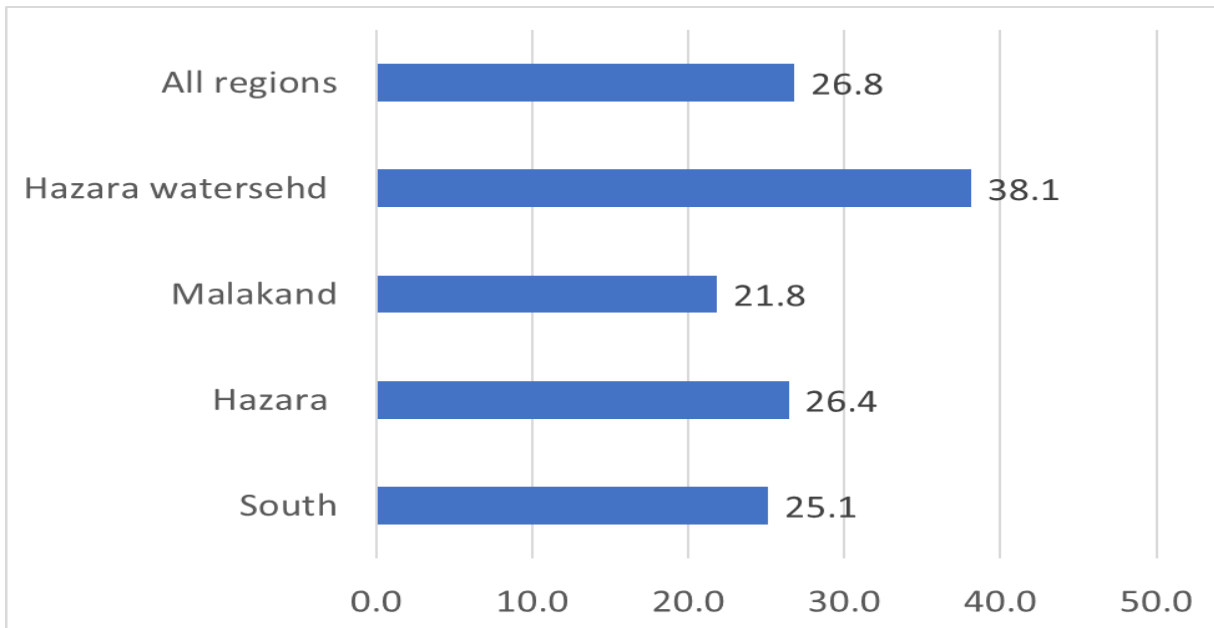


Figure 14. Natural Regeneration in Block Plantation

4.1.3.3 *Plant to plant spacing and pit size*

Regarding plant to plant spacing the overall average is 9.97 feet, which is well within, the prescribed standards. In Southern region plantations have the minimum spacing i.e. 9.64 ft meaning that they have planted more plants. In other regions, the average spacing is around 10 feet (Figure 15). Earth work especially pit sizes have also been found according to the specification. The average pit size was found 2.01ft by 1.44 ft, which is according to the recommended size provided in the PC-1 (Table 6).

Table-6 Average spacing, volume and pit size

Region and circle	Avg Spacing (ft)	Avg. Pit Size and Vol			
		W (ft)	D (ft)	Vol (cft)	Vol. (m3)
South	9.64	2.043	1.441	4.996	0.130
Malakand	10.09	2.05	1.441	3.83	0.11
Hazara	10.06	1.97	1.441	3.85	0.11
Watershed	10.09	1.97	1.441	3.63	0.10
All Region	9.97	2.01	1.44	4.08	0.11

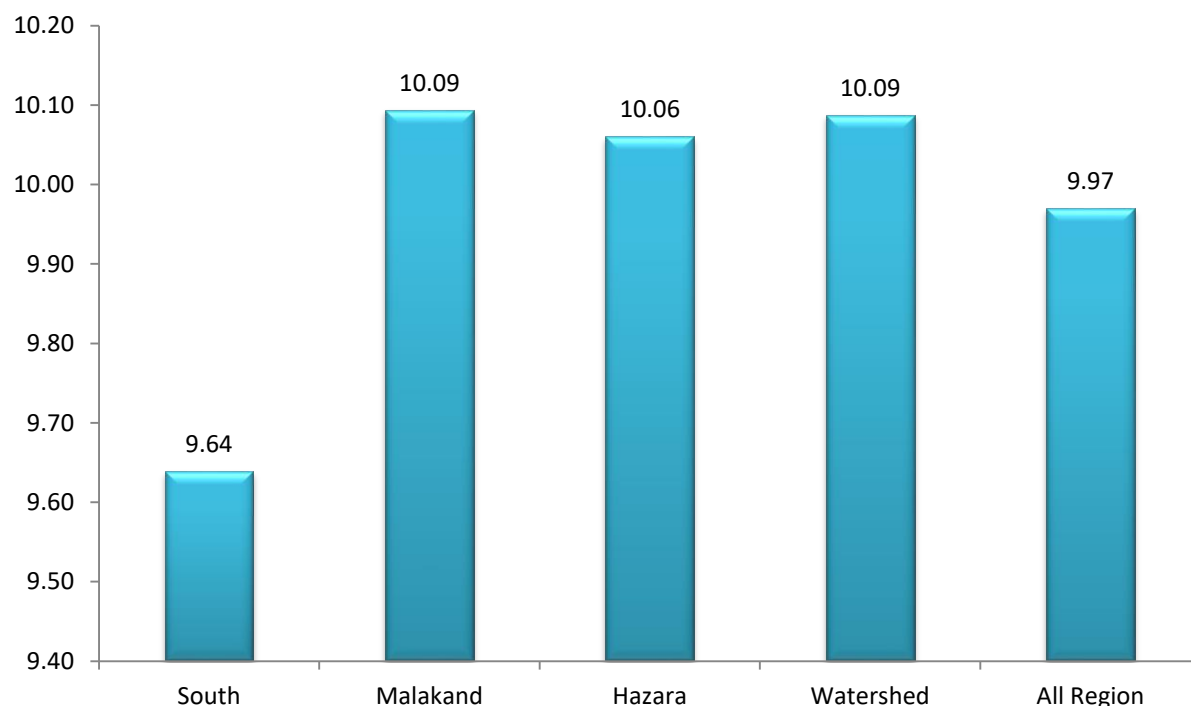


Figure 15 Average plant to plant spacing (ft)

4.1.3.4 *Post planting management and maintenance operations*

Regarding protection and maintenance operations watch and ward and watering were assessed. The PC-1 had provision for hiring watchers for all the plantations under this category while watering was allowed in all forest divisions in southern region, Chitral forest division and Dargai sub-division in Malakand region and in Ghazi sub-division of Haripur forest divisions in Hazara region. The monitoring team found the watchers were engaged in all the plantation sites. Similarly, the watering had been applied in all the plantation sites in Southern region, in Chitral forest division, Dargai subdivision and Ghazi sub-division.

4.1.4 **Existing status of Phase-I Plantation**

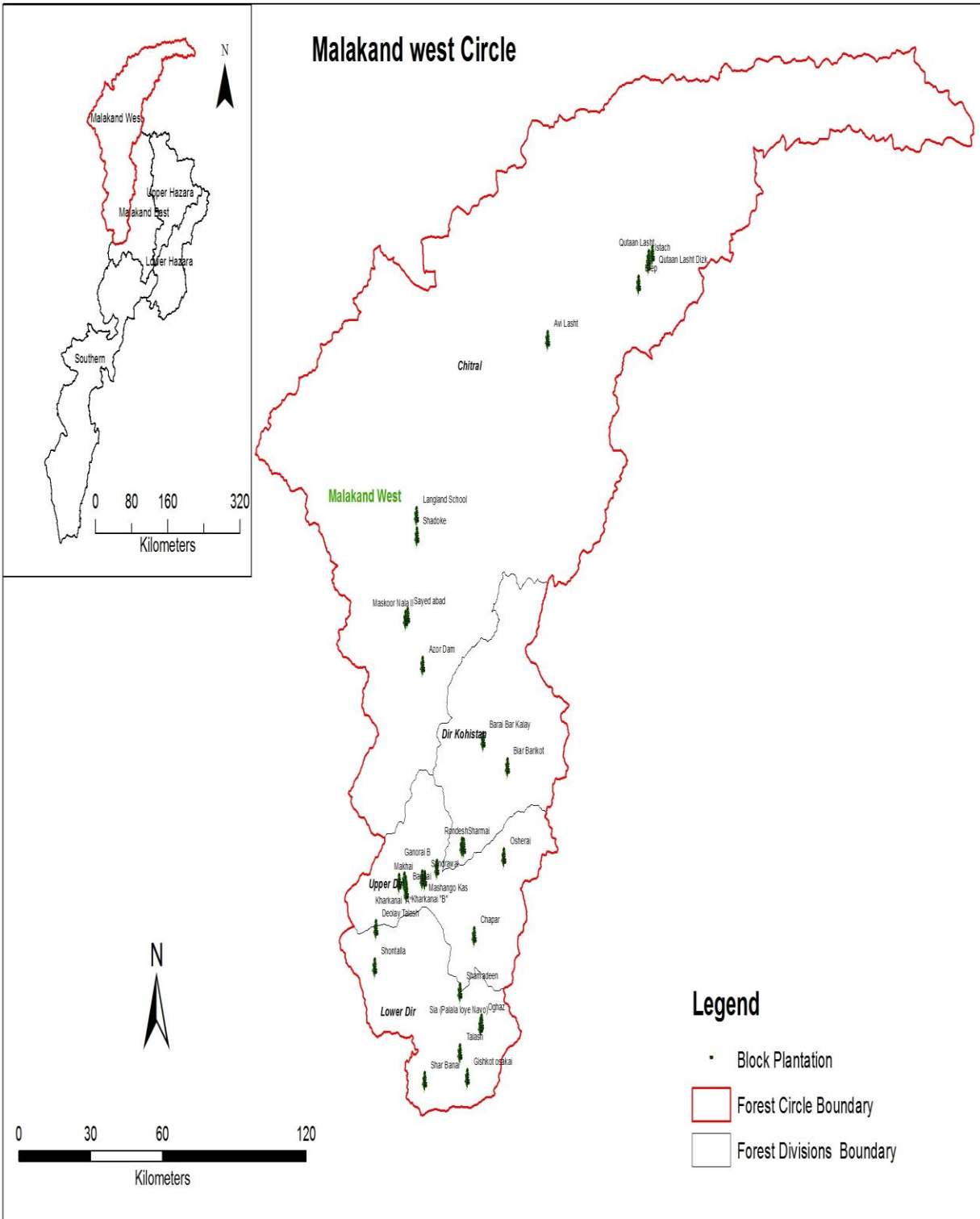
Along with conducting monitoring of Phase-II, it was felt necessary to monitor a portion of Phase-I plantation to assess its existing survival rate after two years. Plantation of Phase-I monitored in 18 Forest Divisions have an area of 1205 ha (20.08% of the Phase-I plantation). Though a slight decline in survival rate was recorded i.e. from 86.6 % to 85% but the difference is insignificant and under permissible limits after two years (Table-7), which indicates the best management and protection mechanism adopted by forest department.

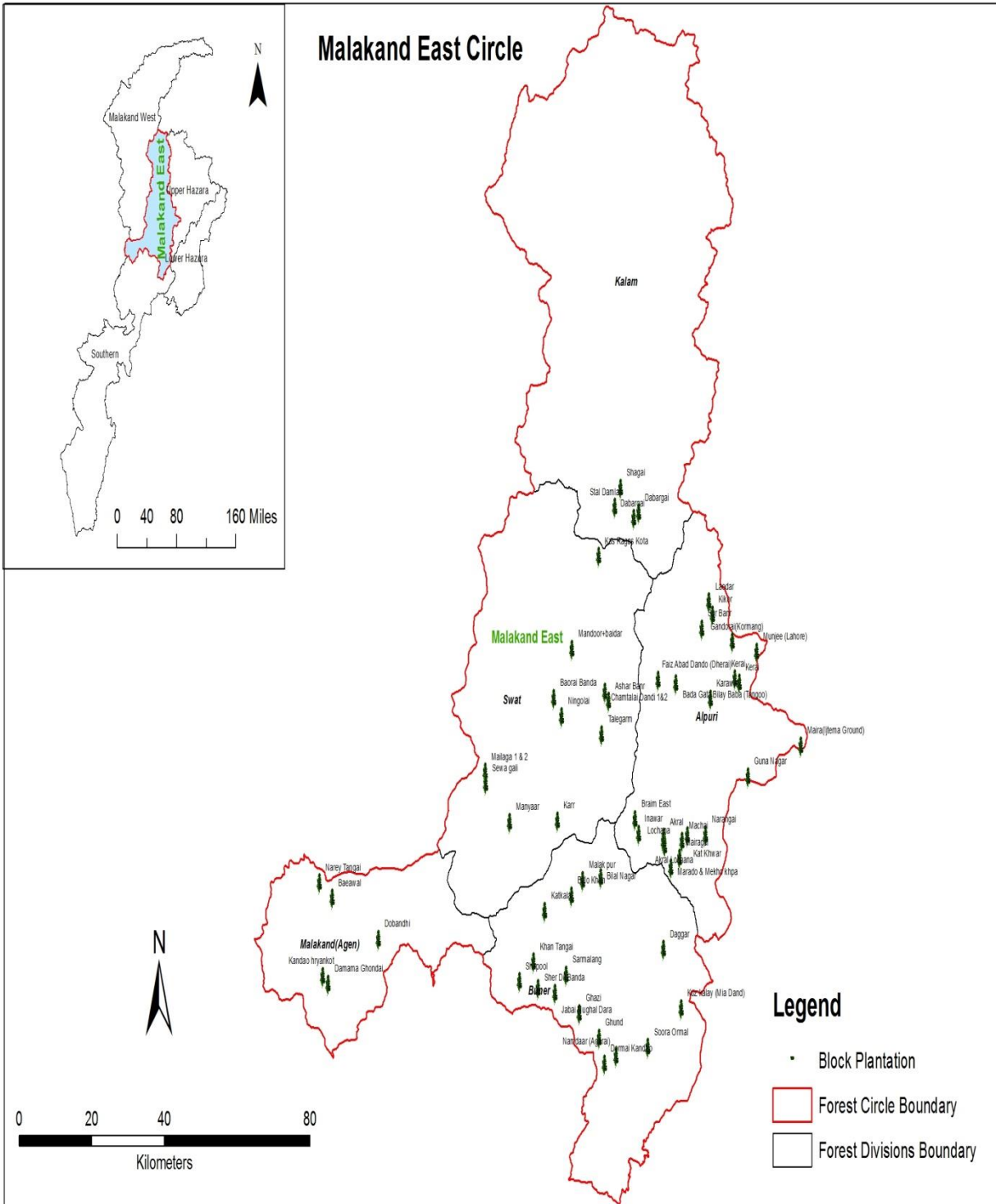
Table-7 Average survival rate of Phase-I Plantation

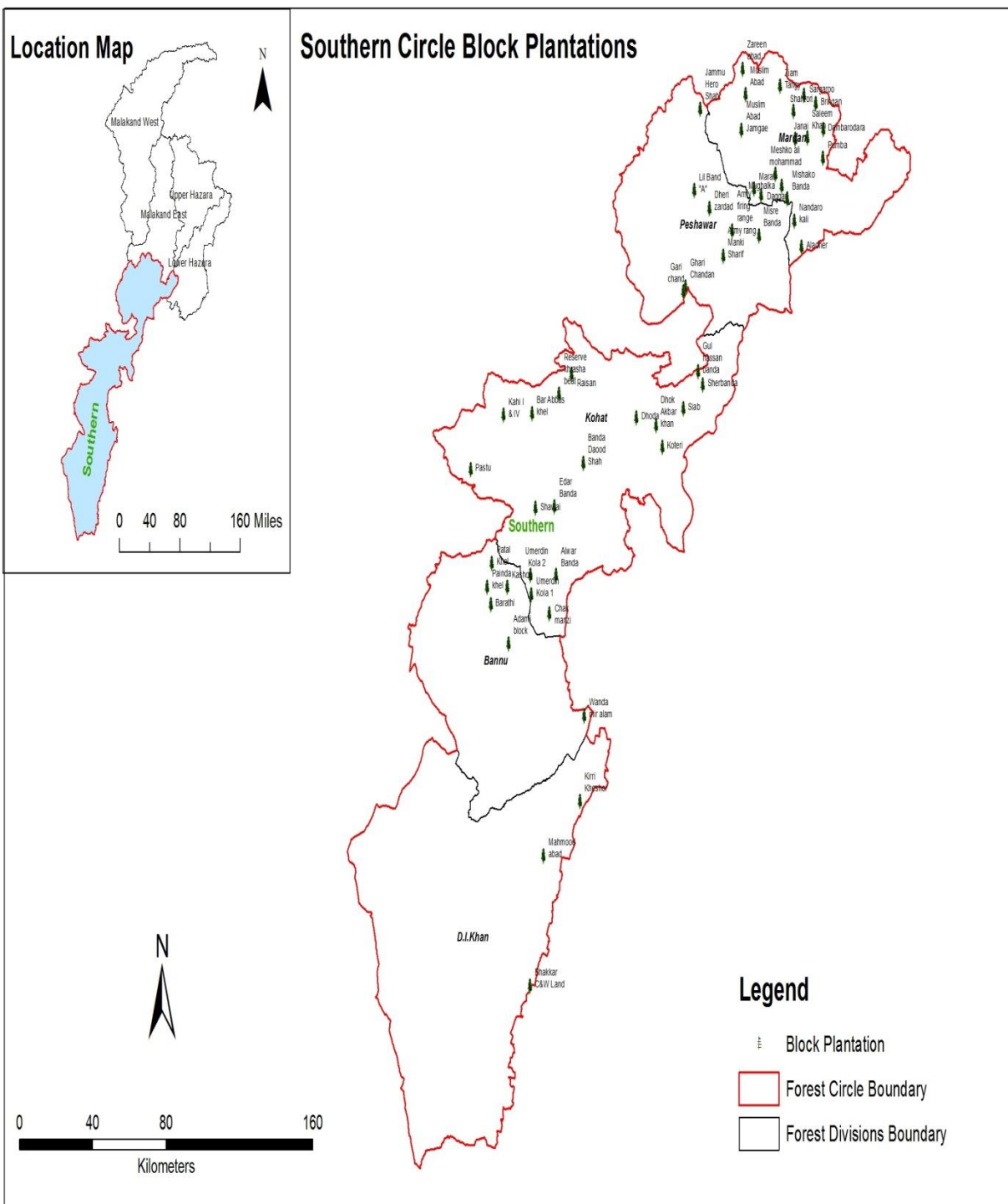
S.No	Forest Division	Location	Average survival rate in %
1	Peshawar	Ghari Chandan	92
2	Mardan	Malandri	90
3	Kohat	Dwamanzi	76
4	Banuu	Kashoo	87
5	Malakand	Koyi ghvardai	90
6	Buner	Korea Dara	71
7	Kalam	Maigram	84
8	Swat	Camtalai	88
9	Upper Dir	Chiragh gali	70
10	Lower Dir	Hasham	86
11	Haripur	Godai	77
12	Gallies	Namli mira	93
13	Siran	Dharyal	89
14	Hazra Tribe	Habib Banda	88
15	Thorghar	Tarala	88
16	Bunir w/shed	Hisar	81
17	Kohistanw/shed	Bagyaar	90
18	Daur w/shed	Baldher	90
Average			85 %



Block plantation Phase-1 (Burin Watershed)







4.1.5 Establishment of woodlots:

This category of plantations was aimed at supporting small farmers having small pieces of lands along their agricultural land for planting fast growing multipurpose trees to meet their fuel wood and timber demand as well earning their livelihoods. According to the PC-1 the extent of land could range from 1 ha to 20 ha. The department was to provide seedlings as well as Rs. 44/- per plant during a period of one year for covering the planting and maintenance cost. According to the PC-1 a total target of 30,000 ha had been set for the second phase out of which 13,418 ha had been achieved by end of June 2017. Of the total woodlots WWF-Pakistan monitored 2623.07 ha which is 19.55 % of the total target achieved.

4.1.5.1 Overall survival rate and species composition:

During Phase-II the overall survival rate of plants in woodlots was found 75.84% with the Watershed circle having 79.54%, Hazara region 80.85%, Malakand region 74.15% and lowest survival rate was recorded in Southern region 68.88% (Figure 16). More than 20 species have been planted in woodlots with Eucalyptus 51.4%, Poplar 15.78%, Chir 14.3%, and Robinia 9% as the main species (Figure 17). Here again the quantity of Eucalyptus is more due to farmers' preference for this species especially in the Southern districts.

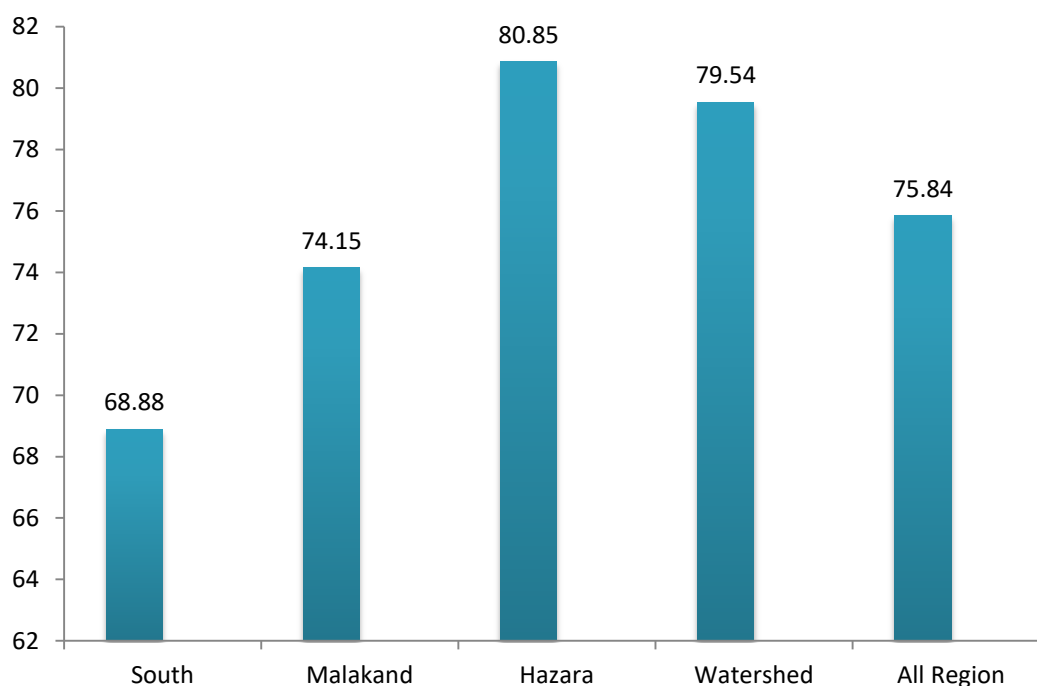


Figure 16 Average survival rate in woodlots

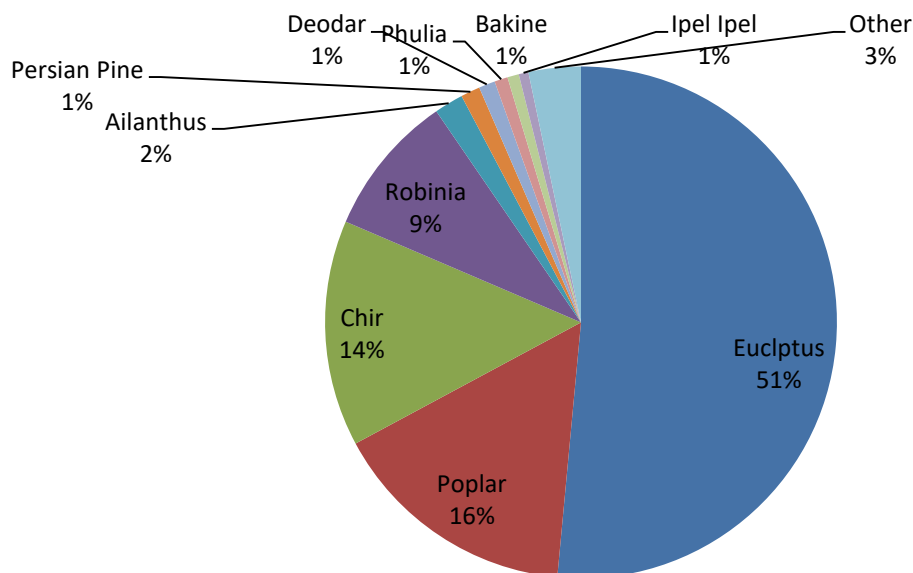


Figure 17 Species composition in woodlots

4.1.5.2 *Plant to plant spacing, pit size and plants numbers*

Though in the PC-1 the plant to plant spacing in woodlots has been prescribed as 10 ft by 10 ft but keeping in view the local conditions of low land holdings along with saline and waterlogged conditions in the Southern districts the steering committee relaxed this condition according to the prevailing situation. Therefore, the woodlots progress was based on the number of plants. The average spacing of plants was found as 8.02 feet, which is well within the prescribed and recommended standards (Table 8). The average pit size is 1.99 ft by 1.39 ft and is slightly more than the average pit size prescribed in the PC-1 (Table 8). The number of plants verified in the field also turned to be 1.05% more than what was claimed by Forest Department (Table 8).

Table-8 Information of woodlots in all regions

Region	Total plants planted (per record)	Total plants planted (Monitoring team)	Difference	%	Avg Spacing (ft)	Avg. Pit Size and Vol			
						W (ft)	D (in)	Vol (cft)	Vol. (m3)
South	50355.25	50155.07	-168.27	-0.99	7.56	2.00	1.39	4.39	0.12
Malakand	18157.36	18291.62	134.26	1.30	6.91	2.08	1.39	4.12	0.11
Upper Hazara	24357.57	24911.53	553.96	2.86	9.41	1.99	1.39	3.74	0.11
Watershed	13359.15	13535.77	176.62	1.02	8.20	1.88	1.39	3.22	0.09
Total	26557.33	26723.50	174.14	1.05	8.02	1.99	1.39	3.87	0.11

4.1.5.3 Post planting management and maintenance operations

On average in 59.3% of the woodlots proper watch and ward existed, in 25.6% watering had been done and in only 1.2% proper fencing had also been done (Figure 18). In Sothern region 100% of the woodlots monitored had proper arrangement for watch and ward and watering. In Malakand watch and ward was verified in 35.6% of the woodlots and watering in 8.5% of the woodlots. In Hazara region watch and ward was found in 54.8% of the woodlots while watering was in 3.2% only. Similarly, in Watershed circle in 3.8% woodlots fencing was present, in 15.4% woodlots watering had been done while in 48.1% woodlots watch and ward was also present (Figure 18). Though the project PC-1 does not have any provision of fencing yet some of the farmers did this arrangement showing their extra commitment and interest. The low percentage of watering in Malakand and Hazara is since most of the areas of these regions fall in high rainfall zones with no need of hand watering.

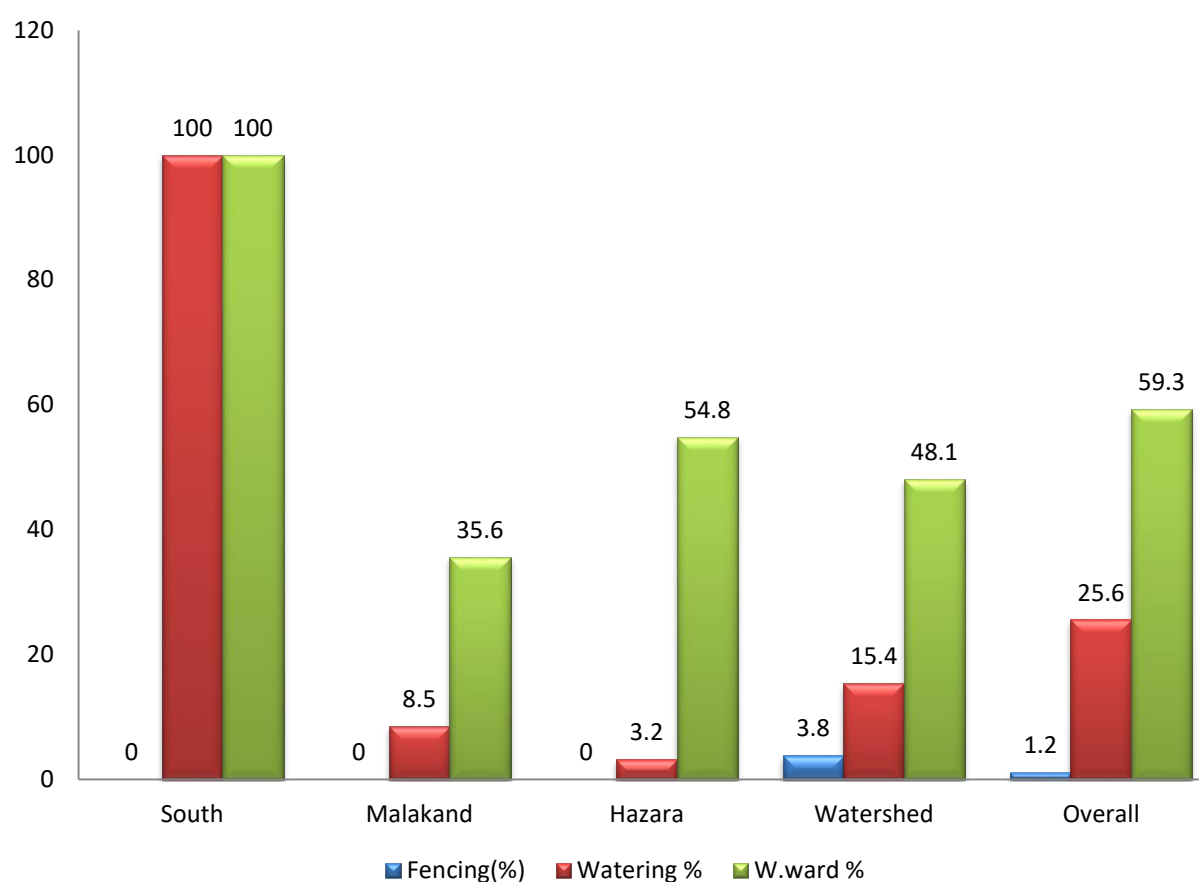


Figure 18 Management operations in woodlots

4.1.6 Planting along roadside, canal side and railway tracts including motorway

Under Phase-II a total of 2,000 ha of target had been set for planting along roadside, canal side, railway tracts and motorways. According to the PC-1 the same spacing and pit size had been recommended as for the normal block plantations. Moreover a landscape based approach had been prescribed in the PC-1 instead of normal traditional linear plantations. By end of June 2017 the KP FD had achieved 2,665 ha against the total target of 2,000 ha i.e an over achievement of around 33%. The WWF-Pakistan team monitored 794.9 ha (29.83%) area out of the total achieved target.

4.1.6.1 *Plants planted, species composition and survival rate*

The number of plants claimed to be planted in the 794.9 ha of roadside, canal side and railway track plantations monitored by the WWF-Pakistan's team were found almost the same with a slightest increase of 0.09% (Table 9). The overall average survival rate is 83.57 with ranging from 87.21% in Southern region to 79.0% in Malakand Appendix -H.

Table 9. Plants claimed and verified in Linear Plantation

Region	Plants claimed to be planted	Plants verified	Difference	%	Average Survival Rate %
Southern	522,047	522,255	208	0.04	87.21
Hazara	243,775	244,230	455	0.19	84.50
Malakand	109,575	109,710	135	0.12	79.00
Overall	875,397	876,195	798	0.09	83.54

In total, more than 21 species have been planted in these plantations. Eucalyptus is again the major species followed by Robinia, Poplar, Kikar, Ailanthus, Chir, Shsham and Concarpus as the main species. Apart from Eucalyptus, Conocarpus is also an exotic species and should be avoided though during Phase-II Part-2 decrease by 1% has been recorded in both species (Figure 19).

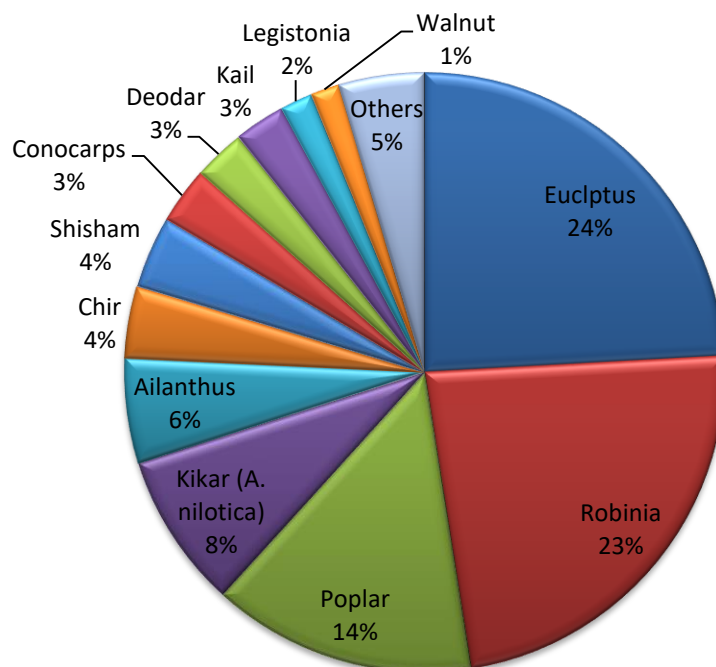


Figure 19 Specie compositions in linear plantation

4.1.6.2 *Post planting management and maintenance operations*

Regarding post planting management and maintenance operations in roadside, canal side and railway tracks plantations proper fencing was found in 56% of the plantation sites, watering applied in 60% sites while proper watch and ward was found in 76% of the plantation sites (Table 10).

Table-10 Management operation in linear plantation

Region	Management operations (%)		
	Fencing	Watering	W. ward
South	85.71	100	100
Malakand	40	20	100
Hazara	0	0	0
All regions	56	60	76



Road side plantation in Chitral



Road Side Plantation Upper Dir



Canal side plantation D I Khan

4.1.7 Sowing and dibbling

Under the phase-II a total of 15000 ha were targeted to be planted through seed sowing and dibbling out of which 14,083 ha had been achieved by end of June 2017. Sowing and dibbling has been done in groups of three trenches each group spaced at 10 ft from the other. The number of sprouted seeds was encouraging. The overall average number of sprouted seeds per hectare was found to be 1473, with 1832 in Southern region, 995 in Malakand region, 1773 in Hazara region and 1292 in Hazara watershed circle (Figure 20). More than 12 species have been sown through this activity (Figure 21) Appendix -I.

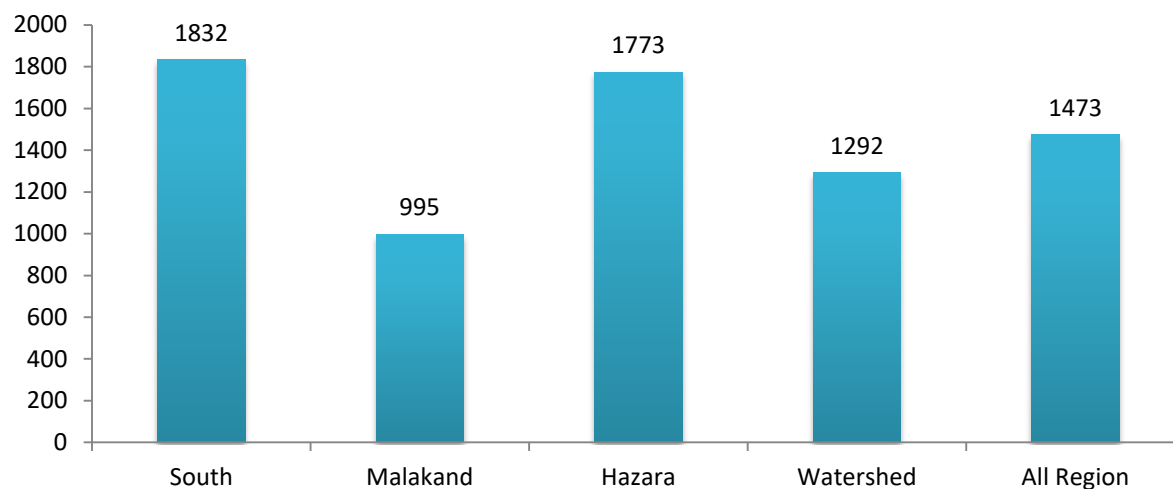


Figure 20 Number of seeds sprouted per ha in different regions

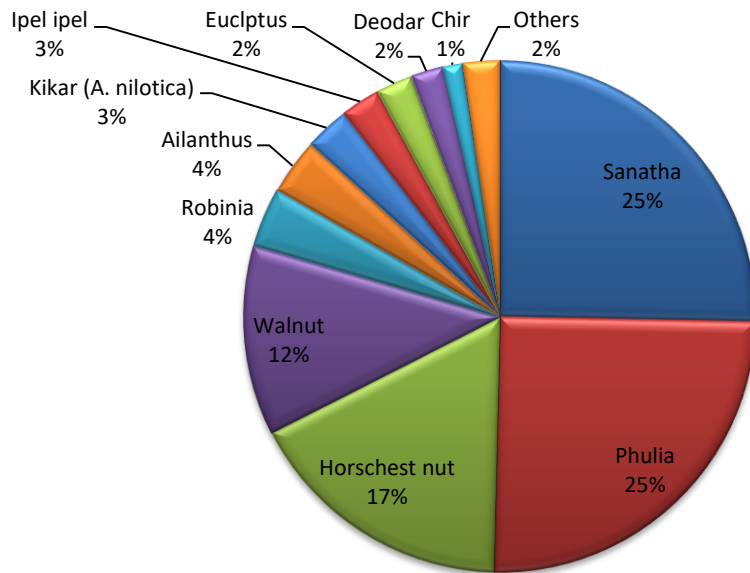


Figure 21 Species composition in sowing areas



Lakai Ghar sowing Buner Forest Division



Dibbling of Aesculus indica in Gallies Forest Division

4.1.7.1 *Post sowing management and maintenance operations*

Regarding post sowing management operations watering had been applied only to 2.70 % areas while watchers were present in 100% sites. Similarly fencing was only provided to 2.70 % area only in Bunnir Forest Division. The low percentage of watering was since there was no provision for this activity in the PC-1.

Table-11 Management operation in sowing and dibbling

Region	Management operations (%)		
	Fencing	Watering	W. ward
South	0	11.11	100
Malakand	12.5	0	100
Hazara	0	0	100
All regions	2.70	2.70	100

4.1.8 **Farm forestry & mass plantation events**

A target of 87.13 million seedlings had been fixed to be distrusted through farm and agroforestry while 10.00 million seedlings had been targeted to be planted through celebrating planting events with the help of academia, Government and Non-Government Organizations.

4.1.8.1 Farm forestry and agro forestry

As of 31 December 2016 a total of 52.06 million seedlings had been distributed under the farm and agro forestry. The monitoring team verified a total of 5.1 million seedlings (10%) and assessed their survival rate. The overall average survival rate of seedlings under farm forestry was found 61.27% with highest one in Southern region, followed by watershed circle, Malakand region and then Hazara region (Figure 22).

The process outlined in the PC-1 had been properly followed in about 60% cases while in around 40% cases it was partially followed. The bulk of work involved in distribution of planting stock sometimes resulted in delays and in turn in drying of the seedlings. The low success rate is partly due to this fact and partly due to farmers' own planting techniques and management (Appendix-J).

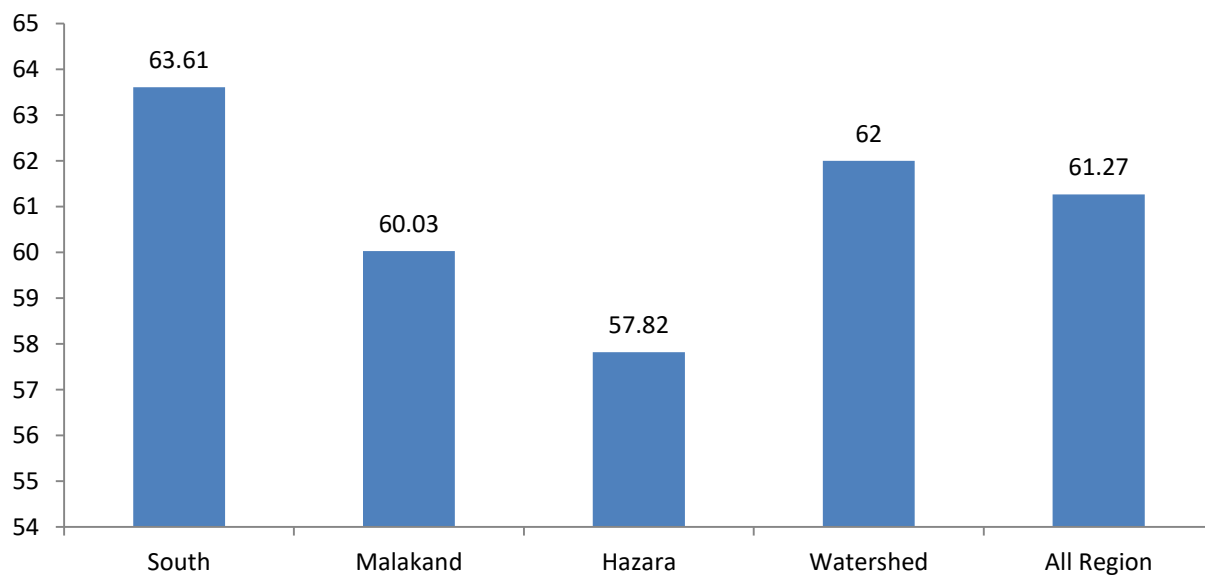


Figure 22 Average survival rate in farm forestry



Farm Forestry at Gijbori Hazara Tribal

4.1.8.2 *Mass planting events*

Under the sub activity of plantation campaigns and events 1878 events have been organized till 31 December 2016 with 320 events in Southern region, 644 events in Malakand region, 560 events in Hazara region and 354 events in Watershed circle planting about 4.03 million plants respectively.

4.1.9 *Reclamation of saline and waterlogged areas*

This category of plantation is aimed at reclaiming lands affected by salinity and waterlogging especially in the Southern districts of the province. According to the BTAP project document, the reclamation plan would be developed for the areas to be treated under this category of plantation. The activities may consist of deep ploughing to break the hard crust of the soil, water drains and planting of water and salinity resistant species. Moreover, it was advised to consult experts from PFI and other directorates for developing these plans. A total target of 1000 ha had been set for Phase-II however keeping in view the need the department achieved 9884.3 ha by end of June 2017 and the WWF-Pakistan monitored 2633 ha which is about 26 % of the achieved target.

4.1.9.1 *Planning, sites' selection, areas claimed, species and survival rate*

No proper plan was found of any of the treated areas monitored by the field team. Overall survival rate of plants in Saline and Waterlogged areas was found to be 83.44% with Mardan Forest Division having 93% followed by Bannu division 87.38% survival rate of plants, Kohat division having 83.66%, D I Khan 81.27% and Peshawar 74% survival rate of plants (Figure 23). Apart from management and care the survival rate also depends on the gravity of the Salinity and Waterlogging conditions of the sites. Keeping in view the difficult soil conditions 75+ survival rate is a good success.

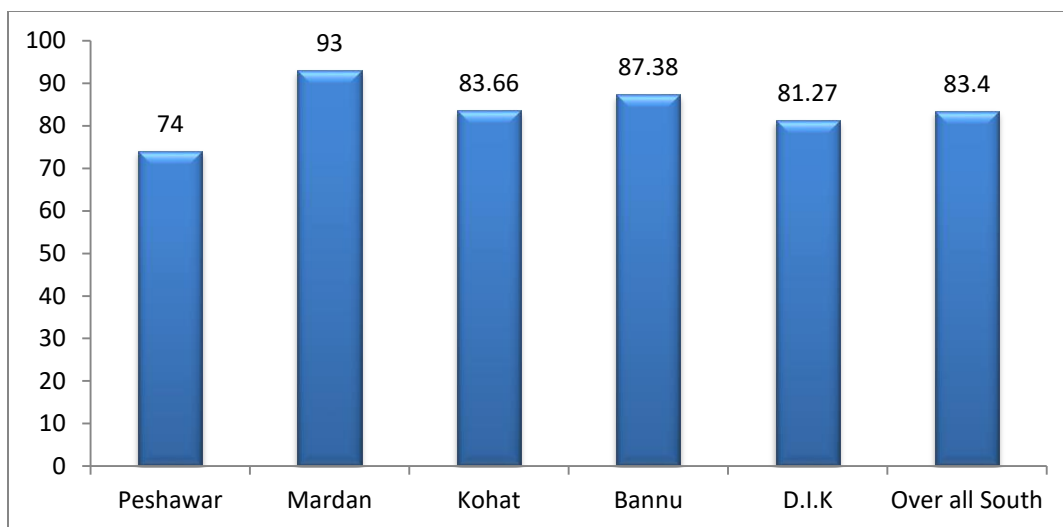


Figure 23 Average survival rate in saline and water logged areas

Regarding site suitability all the sites were suitable for the activity and had problems of Salinity and Waterlogging (Appendix-H). Reclamation of saline and waterlogged areas needs species that are resistant to these conditions and at the same time can give quick return to the farmers in terms of fuel wood and timber. Species selection has been done according to these conditions. Eucalyptus is the major species planted in saline and waterlogged area followed by Frash. Detail of species composition is given in Figure 24.

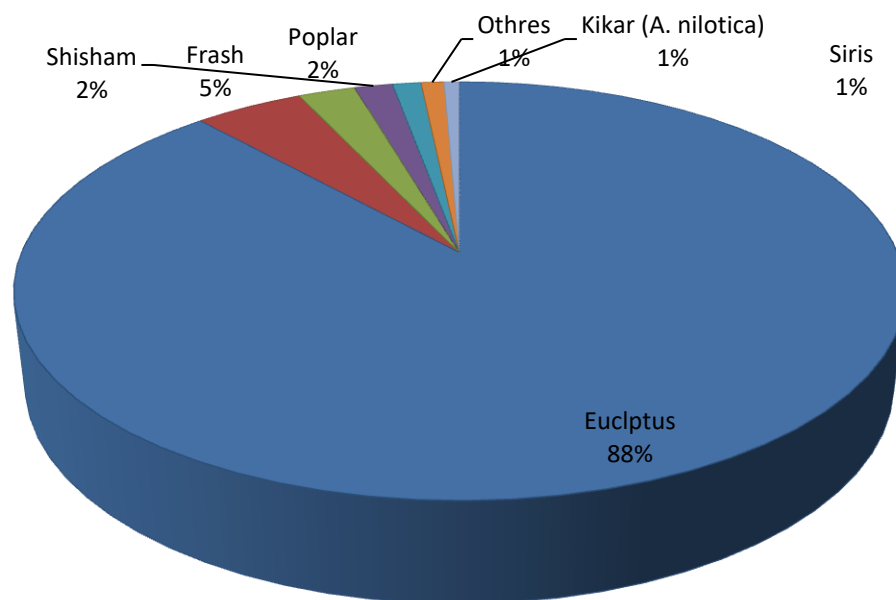


Figure 24 Species composition in saline and water logged areas

4.1.9.2 *Plant to plant spacing and pit size*

Average plant to plant spacing was below slightly above 5 feet while the average width (diameter) of the circular pit was 2.06 feet and average depth was 1.54 feet, which is again well within the standards provided in the project document (Table 12)

Table-12 Average spacing and pit size in saline and water logged area

Region	Avg Spacing (ft)	Avg. Pit Size and Vol			
		Width (ft)	Depth (ft)	Vol (cft)	Vol. (m3)
Peshawar	5.60	1.95	1.21	4.26	0.10
Kohat	6.65	2.06	1.51	5.04	0.13
Mardan	4.78	1.90	1.17	3.40	0.10
Bannu	5.55	2.10	1.64	5.74	0.16
D.I. Khan	5.39	2.07	1.56	5.29	0.13
Overall South region	5.58	2.06	1.54	5.24	0.13



Extremely saline area, treated with Eucalyptus

4.1.9.3 *Area of plantations and number of plants planted*

Areas of plantations and number of plants claimed by the Forest Department in this category of plantation was found almost the same with least shortage in area (-0.74%) and an excess in number of plants planted (+0.104%). This is very much within the acceptable range. Details are given in Appendix-G

Table-13 Area and number of plants planted in saline and water logged area

Division	Area claimed (ha)	Area verified (ha)	Difference	%	No. of plants claimed	No. of plants verified	Difference	%
Peshawar	55	54.64	-0.36	-1.3	110300	108007	-2293	-2.67
Mardan	120	119	-1	-0.8	129000	131400	2400	1.86
Kohat	130	115	-15	-11.5	204250	204364	114	0.06
Bannu	868	881.51	13.51	1.6	1181657	1183512	1855	0.16
D I Khan	1460	1443.38	-16.62	-1.1	1558750	1559992	1242	0.08
All South region	2633	2613.5	-19.47	-0.74	3183957	3187275	3318	0.104

4.1.9.4 *Post planting management and maintenance operations*

So far as management operations are concerned regular watering and watch and ward were confirmed in all the monitored sites.



Paharpur saline and water logged area treated



4.1.10 Reclamation/rehabilitation of bad sites through soil and water conservation measures, bioengineering structures and planting of drought resistant species

Bad sites are highly degraded lands with problems of soil erosion, soil cutting, landslips and landslides. The project document briefly mentions development of rehabilitation plans for treating the bad sites through soil and water conservation measures and techniques. Out of the total target of 950 ha under this activity, the KP FD has treated 962 ha by end of June 2017. The WWF-Pakistan team monitored 326.36 ha (33.92%) of bad sites treated with various measures and techniques. The bad sites rehabilitation works were monitored in Upper Dir, Alpuri, Kalam, Hazara Tribal, Kaghan, Gallies, Siran, Unhar watershed, Daur Watershed and Buner watershed. The rehabilitation measures included loose stone check dams, gabion check dams, gabion spurs, vegetated loose stone retaining walls, soft gabion check dams, brushwood check dams, brushwood layering, cutoff drains and plantations.

Saline and water logged area treated in Lakki Marwat

4.1.10.1 Upper Dir Forest Division

In Upper Dir Forest Division 20 ha area had been treated with 200 Loose Stone Check Dams and 20 Soft Gabion Check Dams. Suitability, design and quality of the rehabilitation measures ranged from fair to good. The total number of Loose Stone Check Dams and Soft Gabion Check Dams was confirmed to be 200 and 20 with average volume of 78.84 cft and 20 cft respectively. The survival rate of vegetation used in Soft Gabion Check Dams was found to be 45% (Appendix K).



4.1.10.2 *Alpuri Forest Division*

Three types of measures had been applied in Alpuri Forest Division; loose stone check dams, Brushwood Layering and Plantations. The total area treated was seven ha. The total number of Loose stone check dams was 80, total number of Brushwood Layering was 20 and area of plantations was five ha. The average size of loose stone check dams was found to be 232 cft. Survival rate of vegetation material used in Brushwood layering was 56% and in plantations the survival rate of seedlings was 52%. Plant to plant spacing of seedlings in plantation was 5 x 5 ft. Suitability, design and quality of the rehabilitation measures was found to be good and according to the site's requirement (Appendix K).



4.1.10.3 *Kalam Forest Division*

In Kalam Forest Division four different measures had been applied that is loose stone check dams, Gabion check dams, Vegetated Loose Stone Retaining Walls and plantation. A total 10 ha area had been treated with 50 Loose stone check dams, eight Gabion check dams, one Vegetated Loose Stone Retaining Wall and 10 ha of plantations. Average volume of Loose stone check dams was found to be 1986.98 cft while that of Gabion check dams was 1174 cft. The average size in Loose stone check dams is quite large than the normal required size. In principle, the loose stone check dams should be around 400 cft. Being a loose stone structure having no binding material larger structures is most likely to collapse. However, the size of gabion is acceptable and according to the standard. The average plant to plant spacing was found to be 5 x 5ft and the average survival rate plants in plantation was 48%. While the average survival rate of vegetation material used in Vegetated Loose Stone Retaining Wall was 52%. Fifty percent of the measures adopted were properly selected according to the sites' requirement while fifty percent were acceptable to some extent. Design and quality was found good in 75% while fair in 25% of the works. Details are given in Appendix K.



4.1.10.4 *Hazara Tribal Forest Division*

In Hazara Tribal Forest Division the bad sites rehabilitation measures consisted of 498 loose stone check dams, 2464 Brushwood check dams, 510 Brushwood layering, 57 Cutoff drains and 40 ha Plantations. Out of these a total of 50 loose stone check dams, 124 Brushwood check dams, 53 Brushwood layering 6 Cutoff drains and 40 ha Plantations were monitored. Average sizes of loose stone check dams and cutoff drains were 145.12 cft and 370.53 cft respectively. The survival rate of vegetation material used in Brushwood check dams and brushwood layering was 68.38% and 69.00% respectively. The area of plantation was found to be correct while the plant to plant spacing was found to be 5ft by 5ft and survival rate of seedlings was 97%. Details are given in Appendix K.

4.1.10.5 Siran Forest Division

Three measures i.e. 126 loose stone check dams; four Brushwood layering and six Cutoff drains had been constructed for rehabilitation of 65 ha of bad sites in Siran Forest Division. The average volume of loose stone check dams was found to be 704.7 cft and that of cut off drains was 7786.6 cft. Plantation with 5x 5 spacing was also carried out on 4 ha with average survival rate of 65 %. The average volume of loose stone check dams seems to be quite high than normally recommended size. Hundred percent of the rehabilitation measures were well selected according to the sites' requirement while design of 67% measures was good and that of 33% was fair. Survival rate of vegetation material used in Brushwood layering was found to be 72%, which is good achievement. Details are given in Appendix K.

4.1.10.6 Gallies Forest Division

In Gallies Forest Division 120 ha of badlands with problem of landslides and erosion were monitored. The area had been treated with 10 loose stone check dams, one cut of drain, 1 ha plantation along with 134 brushwood layering. The average volume of loose stone check dams was found to be 104.14 cft and that of cut off drains was 2034 cft. Plantation with 6.9 x 6.9 spacing was also carried out with average survival rate of 79 %. Hundred percent of the rehabilitation measures were well selected according to the sites' requirement while design of 67% measures was good. Survival rate of vegetation material used in Brushwood layering was about 78%. The measures adopted and structures constructed were well according to the requirement of the sites. Details are given in Appendix K.

4.1.10.1 Kaghan Forest Division

In Kagahn Forest Division the bad sites rehabilitation measures consisted of 151 loose stone check dams, 168 Brushwood layering, 120 vegetative loose stone check dams, 4 Cutoff drains, and 9 ha Plantations. Out of these, a total of 9 loose stone check dams, 124 Brushwood check dams, 25 Brushwood layering, 18 vegetative loose stone check dams, 2 Cutoff drains and 9 ha Plantations were monitored. Average sizes of loose stone check dams and cutoff drains were 475.17 cft and 2546.41 cft respectively. The survival rate of vegetation material used in Brushwood check dams and brushwood layering was 74% and 89% respectively. The area of plantation was found to be correct while the plant-to-plant spacing was found to be 5ft x 5ft with survival rate of 92%.

4.1.10.2 Unhar Watershed Division

A total of more than 50 ha area had been treated by 131 Loose stone check dams, nine Gabion check dams, 18 Brushwood layering and two Cut off drains and 50 ha of closed spaced plantations in Unhar watershed division. The average sizes of Loose stone check dams, Gabion check dams and Cut of drains were found to be 210.68, 490.86 and 7818.71 cft, which seem to be quite realistic and according to the recommended sizes. The survival rate of vegetation material used in Brushwood check dams and plantation was 61%. Seventy five percent of measures were well selected according to the sites' requirements while 25% of measures were fair and somehow met the requirements. Similarly design of 75% measures was good while in case of 25% measures the design was fair. Details are given in Appendix K

4.1.10.3 Daur Watershed Division

In Daur watershed division the total of 246 ha of badlands had been treated with 668 loose stone check dams, 5965 Brushwood layering, 247 Cutoff Drains, 2 gabion check dams, 28 Gabion spurs and 2 ha

plantation. The average sizes of loose stone check dams, Cutoff drains and Gabion spur was found to be 242cft, 2790.2cft and 82613.7cft respectively. The survival rate of vegetation material used in Brushwood layering was 82.79%. Regarding suitability of measures 100% of the structures and measures were well selected and according to the sites requirement. Regarding design and quality of measures 75% have been assessed as good while 25% as fair. Details are given in Appendix K.

4.1.10.4 Buner Watershed Division

In Buner Watershed Division 35 Loose stone check dams, 12 Brushwood layering, 8 Gabion check dams and 20 ha plantations had been carried out for treating 20 ha of bad sites. Average sizes of loose stone check dams and Gabion check dams were found to be 98.74cft and 876.86cft respectively. The plantation area was also assessed and turned out to be 20 ha. The average survival rate of the vegetation material and seedlings was i.e. in Brushwood layering 35% and in plantations 30%. Selection of rehabilitation measures for the treated sites was found good to fair. 25% measures were good and according to the site requirement while 25% hardly met the requirements. Similarly, 75% measures had good design and quality while 25% measures had poor design and quality. Details are given in Appendix K.

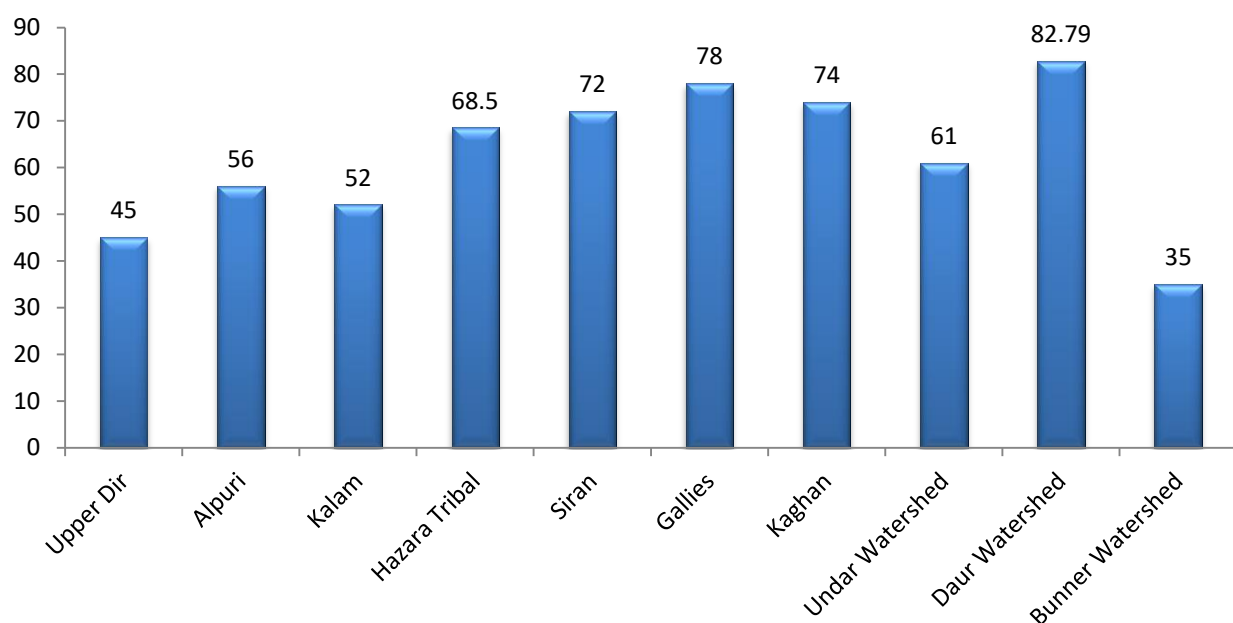


Figure 25. Average Survival rate of vegetation material used in bioengineering structures in different forest divisions



Engineering structures for controlling flash floods



Vegetative Soft Gabion Retaining Wall

4.1.11 Rehabilitation of degraded watersheds

A target of 10 degraded watersheds had been fixed under Phase-II of the BTTAP project. By end of June 2017, six degraded watersheds have been treated i.e. Numla Badala in Bakot area, Narbeer in Manshera Gulibut in Kohistan watershed, Sobatchari in Unhar watershed, Manoor in Kaghan and Jalora in Balakot area of Kaghan Forest Division. The WWF-Pakistan's team monitored the Numla Badala watershed in Kunhar Watershed Division during Part-1 and Jalora in Kaghan Forest Division during Part-2. Management plans have been developed for all these three areas and have been submitted to the HR Directorate, which have been approved by the PD BTAP.

4.1.11.1 *Integrated Watershed Management Jalora (Kaghan Forest Division)*

In Jalora area of Kaghan Forest Division, integrated watershed management activities were carried out to treat the degraded watershed. Combinations of three types of measures were adopted for improving vegetation cover and hydrological response of selected watershed. To avoid flash floods and rubble flow in the Nallas and streams, loose check dams were constructed. Total of 37 loose stone check dams, 1 cut of drain, one vegetative retaining wall, plantation on 13 ha and 24 Brushwood layering had been implemented. Out of 37 loose stone check dams, average sizes of loose stone check dams and cut of drain were found to be 140.09cft and 972cft respectively. The plantation area was also assessed and turned out to be 13 ha. The average survival rate of the vegetation material and seedlings was i.e. in Brushwood layering 83.13% and in plantations 84%. Selection of rehabilitation measures for the treated sites was found good to fair. 75% measures were good and according to the site requirement while 25% hardly met the requirements. Similarly, 75% measures had good design, quality while 25% measures had poorly designed with low quality.

4.1.11.2 *Integrated Watershed Management Numla Badala (Kunhar watershed Division)*

In Numla Badala debris slide has been treated with different engineering and soil bioengineering treatments. Five type of measurement were carried out i.e. loose stone check dam, cut of drain, Soft vegetative layering, gabion spur and plantation. A total of 48 loose stone check dams and 4 cut of drain were constructed out of which 18 check dams and 2-cut of drains were measured. The average volume of loose check dams and cut of drain was 862.95cft and 1679cft respectively. Out of five spurs the monitoring team took measurements of four spur. The average volume of spur was 564.1cft. A total of 44 soft vegetative layering and 33 ha plantation was carried out. Of the total soft vegetative layering 32 were measured and 33 ha plantation were monitored. The average survival rate was 70% in soft vegetative layering and 72% in Plantation. In plantation, the spacing was different i.e 30 ha with 10 x 10 spacing and remaining 3 ha with 5 x 5 spacing. The measures adopted and structures constructed were well according to the requirement of the sites. In Numla Badala watershed instead of big pure engineering structures, mostly bioengineering structures were used except loose stone check dams that are environmental friendly and more economical way to treat degraded watershed. Details are given in Appendix K.



Treatment of degraded watershed through vegetative layering



Landslide treated with close spacing plantation

4.1.12 Establishment of Departmental Nurseries

Under this category, the project had set a target of establishing 35 ha of potted and 136 ha bare-rooted nurseries to raise 60.04 million seedlings; 43.24 million through tube and 16.80 million seedlings through bare rooted nurseries. By end of December 2016 a total 182 ha of nurseries had been established.

A total of 80.26 ha departmental nurseries (21.69 ha of tube and 58.57 ha of bare rooted nurseries) were monitored by the WWF-Pakistan team (Table 14). Parameters like layout and facilities, operation and maintenance practices, total stock and species wise number of seedlings, survival rate, net available stock and number of fit and unfit seedlings were monitored.

Table-14 Departmental nurseries monitored by WWF-Pakistan

Departmental nurseries monitored by WWF-Pakistan			
Region	Tube (ha)	B. Rooted (ha)	Total (ha)
South	2.05	7	9.05
Malakand	8.01	21.5	29.51
Hazara	7.5	18.37	25.87
Watershed	4.13	11.7	15.83
All regions	21.69	58.57	80.26

4.1.12.1 Nurseries layout, facilities and operation and management practices

In departmental tube nurseries 100% of nurseries had inspection paths, 85% had fencing, 73% had Sheds for workers and material, 73% had loading and unloading spaces and 65% had green houses. In 96% nurseries hand watering and in 4% nurseries flood irrigation had been applied to the planting stock (Table 15 and Appendix L (i)). Weeding had been done in 100% nurseries, shifting and root trimming in 88% while fertilizers and pesticides had been applied in 100% and 83% nurseries respectively (Table 16 and Appendix L (ii)). Flood irrigation is not a recommended practice in tube nurseries and should be avoided. This practice may likely increase cost of weeding and root pruning and may even result in failures when planted.

Regarding bare rooted nurseries inspection paths, fencing and sheds were found in 98%, 65% and 37% nurseries. Similarly, irrigation, weeding, fertilizers and pesticides were applied in 100% nurseries (Table 16)

Table-15 Management and layout in Departmental Tube Nursery

Layout, facilities and management in departmental tube nurseries											
Region	Layout and facilities					Operation and management					
	Insp. Path	Fencing	Sheds	Loading space	G House	H. Watering	F. irrigation	Weeding	Shifting/ Root Trimming	Fertilizer	Pesticide
Southern	100.00	100.00	100.00	100.00	100.00	100.00	25.00	100.00	100.00	100.00	75.00
Malakand	100.00	60.00	70.00	70.00	70.00	100.00	0.00	100.00	80.00	100.00	80.00
Hazara	100.00	100.00	66.67	33.33	50.00	83.33	0.00	100.00	83.33	100.00	83.33
Watershed	100.00	100.00	66.67	100.00	50.00	100.00	0.00	100.00	88.40	100.00	83.33
All regions	100.00	84.62	73.08	73.08	65.38	96.15	3.85	100.00	88.46	100.00	80.77

Table-16 Management and layout in Departmental bare rooted Nursery

Layout, facilities and management in departmental bare rooted nurseries							
Region	Layout and facilities			Management operations			
	Inspection Path	Fencing	Sheds	Irrigation	Weeding	Fertilizer	Pesticide
South	100	0	100	100	100	100	100
Malakand	100	76	6	100	100	100	100
Hazara	100	67	58	108	108	108	108
Watershed	100	64	55	100	100	100	100
All regions	98	65	37	100	100	100	100

4.1.12.2 Planting stock and success rate

Total plants raised in the departmental tube nurseries monitored by WWF-Pakistan were 25.30 million out of which 5.83 million had been extracted and transported to plantation sites while 19.48 million were available for monitoring. The overall average success rate of seedlings in tube nurseries was found to be 85.80%. The net successful seedlings were 16.69 million out of which 10.43 million seedlings (62.52%) were fit for planting while 6.25 million (37.48%) were unfit at the time of monitoring (Table 17). The unfit planting stock is expected to become plantable after a period of 3-4 months.

In departmental bare rooted nurseries 5.88 million seedlings had been raised out of which 3.30 million had been extracted and transported to the plantation sites while 2.58 million were present at the time of monitoring. The overall average success rate of bare rooted plants was found as 89.45% i.e. a total of 2.31 million seedlings were assessed to be surviving in the nurseries out of which 91.68% were fit for planting while 8.38% were unfit (Table 18). More than 19 species had been raised in departmental tube and bare rooted nurseries (Figures 26). The major species was Robinia, Eucalyptus, Walnut, Chir, Poplar, Ailanthus, Deodar and Bakine. Like last year this year too the ratio of Eucalyptus seedlings was high as compared with other species. However, ratio of other species like Chir pine, Deodar, Walnut and Shisham has also been increased.

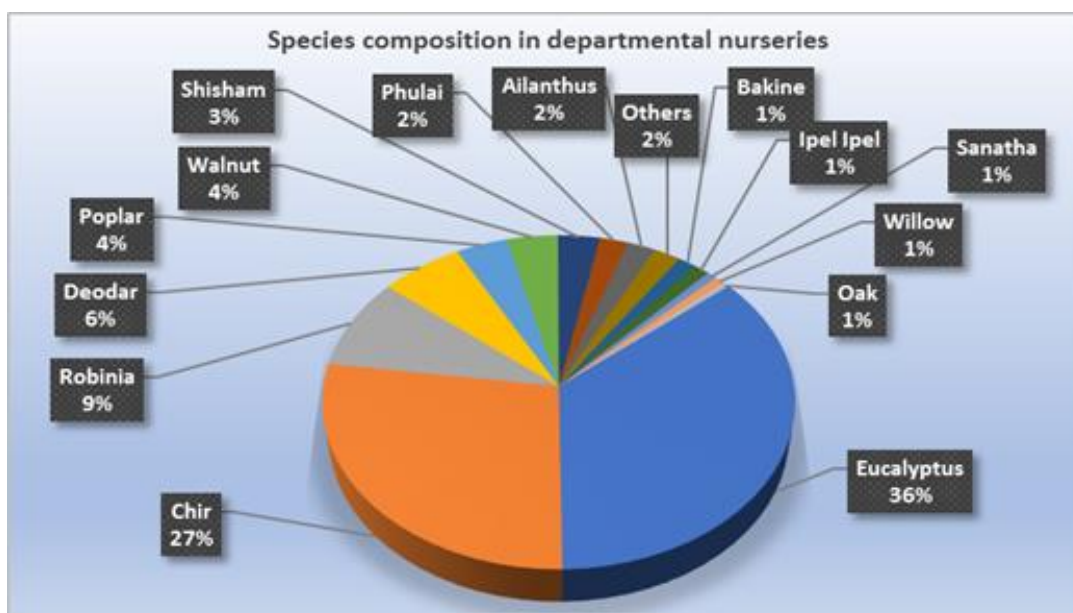


Figure 26 Species composition in Departmental nurseries

Table-17 Status of planting stock in departmental tube nurseries

Regions	Total seedlings raised	Total seedlings distributed	Available at the time of monitoring	Success rate	Net available	Fit for planting	%	Unfit for planting	%
South	2,523,830	978,130	1,545,700	83.00	1,242,605	843,608	67.89	398,997	32.11
Malakand	8,922,210	2,692,907	6,229,303	90.74	5,411,280	3,613,976	66.79	1,797,304	33.21
Hazara territorial	9,059,683	1,075,050	7,984,633	88.83	6,931,044	4,092,436	59.05	2,838,608	40.95
Hazara Watershed	4,798,877	1,084,100	3,714,777	80.63	3,102,871	1,883,063	60.69	1,219,808	39.31
All regions	25,304,600	5,830,187	19,474,413	85.80	16,687,799	10,433,083	62.52	6,254,717	37.48

Table-18 Status of planting stock in departmental bare rooted nurseries

Regions	Total seedlings raised	Total seedlings distributed	Available at the time of monitoring	Success rate	Net available	Fit for planting	%	Unfit for planting	%
South	302,000	190,000	112,000	90.00	100,800	90,720	90.00	10,080	10.00
Malakand	2,005,332	1,275,875	670,657	83.83	599,572	578,144	96.43	21,429	3.57
Hazara territorial	2,415,470	880,175	1,485,159	88.64	1,331,511	1,198,119	89.98	133,392	10.02
Hazara Watershed	1,409,300	1,240,400	26,350	97.25	23,979	23,259	97.00	719	3.00
All regions	6,132,102	3,586,450	2,294,166	89.93	2,055,861	1,890,242	91.94	165,620	8.06



Departmental Nursery at Mansehra



Departmental Nursery at Nikkapah

4.1.13 Establishment of Private Nurseries

Under the Phase-II a total of 10097 units of private nurseries (8497 tube and 1600 bare rooted) had been planned to raise 252.5 million seedlings. This time production of planting stock was further privatized thereby allocating 80% of the total nurseries' target to private sector i.e. youth, women, senior citizens and progressive farmers. According to the PC-1 40% of the total target was to be allocated to youth, 10% to women, 10% to senior citizens and 40% to progressive farmers. To accommodate more progressive farmers, the upper ceiling of nursery allocation to an individual was kept open.

Table-18 Number of nurseries allocated to different beneficiaries

Region	Number of nurseries allocated to different beneficiaries (%)			
	Women	Senior citizens	Youth	Progressive Farmers
South	5.56	8.33	41.67	44.44
Malakand	9.73	18.58	35.40	36.28
Hazara	3.16	17.89	56.84	22.11
Watershed	5.26	19.30	47.37	28.07
All regions	6.31	17.28	45.18	31.23

Moreover an additional target of 497 units of private tube nurseries had also been allocated to the Chief Conservator Forest-I for onward placement based on feasibility and potential of the concerned forest divisions. A very elaborate process and mechanism has been provided in the PC-1 regarding identification, selection, terms and conditions and payment mechanism. By end of December 2016 the KP FD had achieved a target of 8990 units out of which the WWF-Pakistan's monitoring team monitored 1668 units i.e. 18.55% of the achieved target (Appendix-M & N).

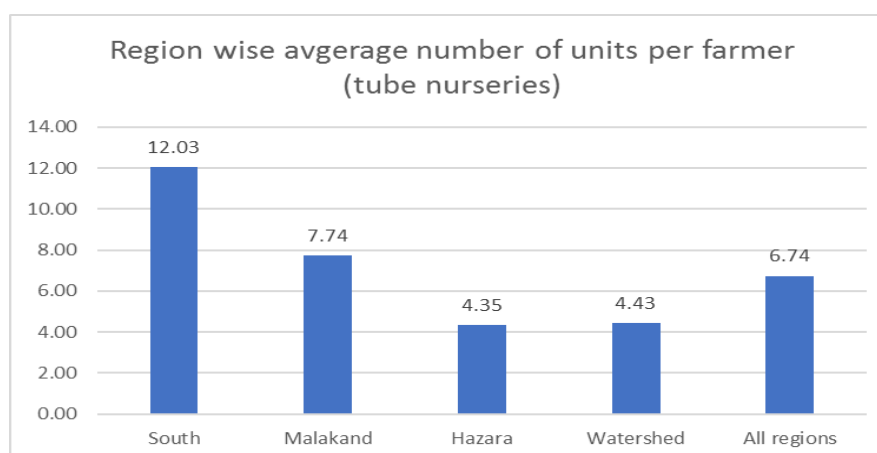


Figure 27 Region wise average numbers of units per farmer

As shown in table 18 below 6.31% of the total target of private nurseries had been allotted to women, 17.28% to senior citizens, 45.18% to youth and 31.28% to progressive farmers against the above-mentioned quota agreed in the PC-1 of the project document.

The overall average number of units per farmer was 6.74 with over 12.03 units per farmer in South region, 7.74 units per farmer in Malakand, 4.35 units per farmer in Hazara region and 4.43 units per farmer in Watershed circle (Figure 27). The high number of units allocated in Southern and Malakand regions is due to high trend of nursery rising among farmer communities as well as availability of land. The average success rate of seedlings was the highest in tube nurseries with 21-25 units and in bare rooted nurseries with 6-10 units per farmer (Figures 28, 29).

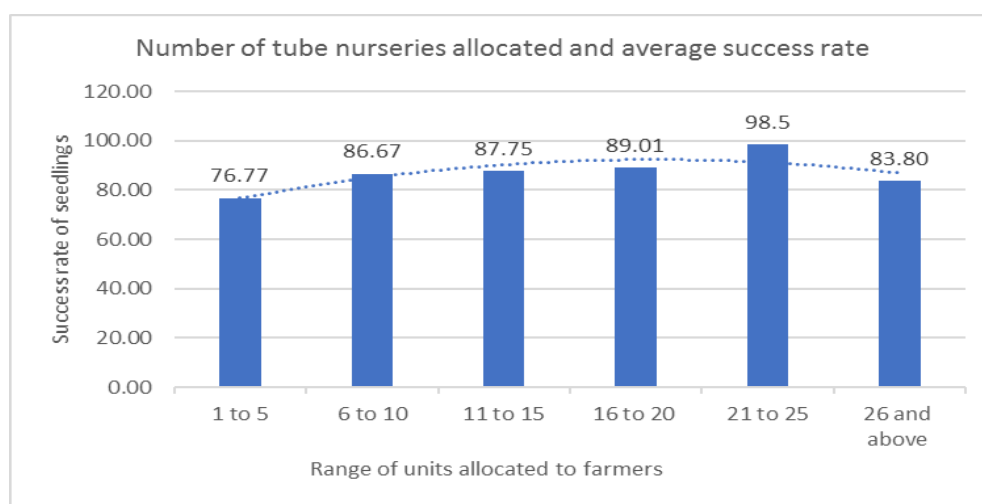


Figure 28 Number of tube nurseries allocated and average success rate

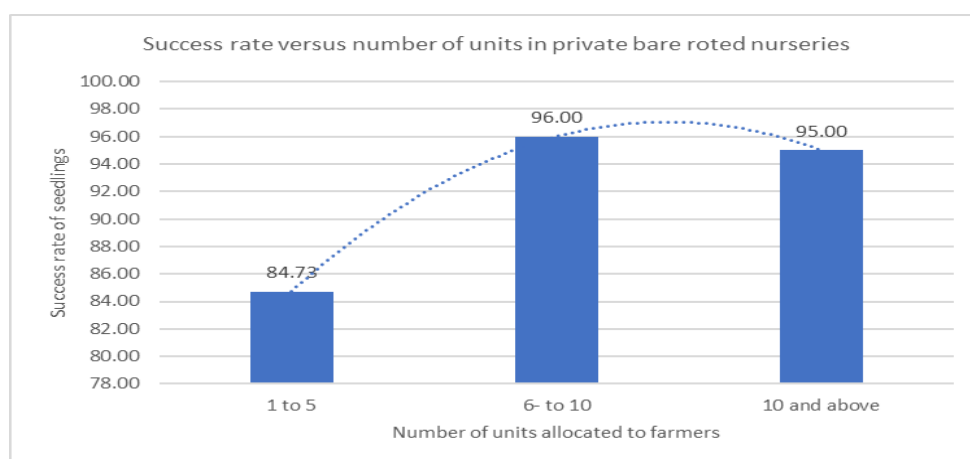


Figure 29 Number of bare rooted nurseries allocated and average success rate

4.1.13.1 Nurseries layout, facilities and operation and management practices

Regarding lay out, facilities and cultural practices in private tube nurseries 99% nurseries had proper inspection paths and layout, 47% had fencing, in 67% nurseries the tubes had been shifted and root pruning done, in 90% nurseries proper hand watering had been applied while in 10% nurseries flood irrigation had also been applied. Similarly, in 71% nurseries fertilizers and farmyard manure had been applied and in 82% nurseries pesticides had also been applied for disease treatment (Figure 30). In private bare rooted nurseries 94% had inspection paths, 24% had fencing and 6% had sheds. Proper irrigation had been applied in 94%, weeding in 91%, fertilizers in 74% and pesticides in 74% nurseries (Figure 31). Flood irrigation in tube nurseries is not a good practice and should be avoided. This results in roots anchoring in soil and would in turn result in inferior quality of planting stock if not shifted properly. Fencing being a costly activity has bound in few nurseries. Farmers opted for watch and ward instead of fencing. Sheds were also found in few nurseries. As the contract was only for one year farmers did not want to invest more in infrastructure and layout.

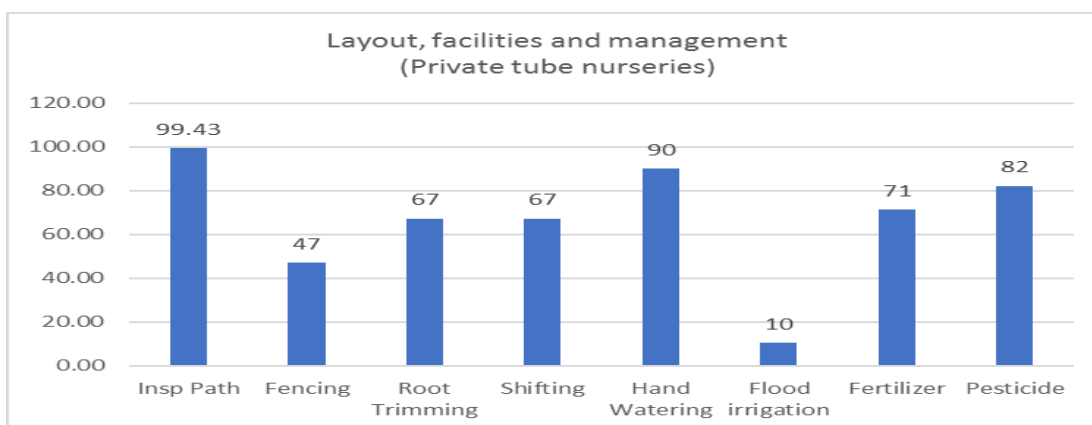


Figure 30 Management and layout in private tube nurseries

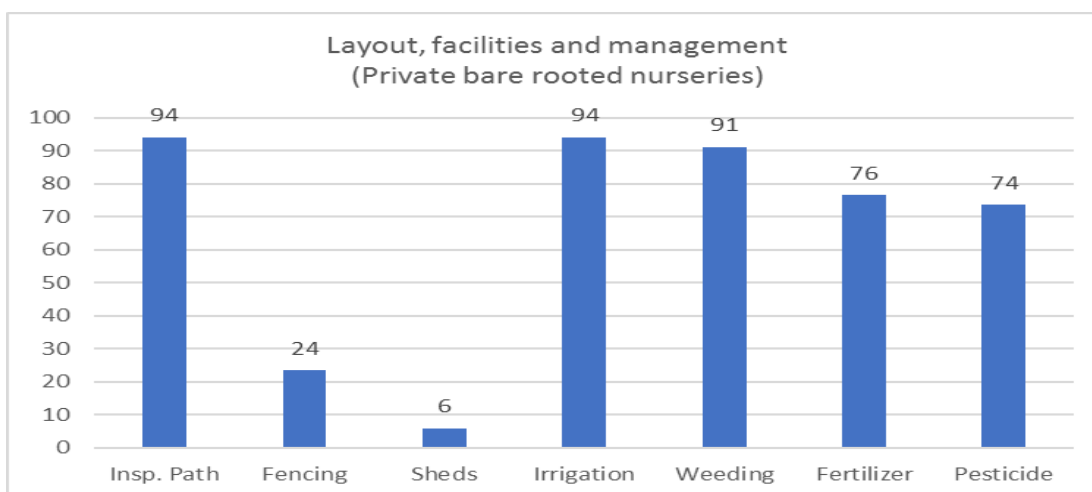


Figure 30 Management and layout in private bare rooted nurseries

4.1.13.2 Planting stock and success rate

In private tube nurseries, a total of 37.84 million seedlings had been raised out of which 6.18 million seedlings had been extracted and distributed to farmers as well as transported to plantation sites while 30.87 million were available at the time of monitoring. Out of this the overall average success rate of seedlings was 91.23% with 82.52% in Southern region, 79.17% in Malakand region, 67.94% in Hazara region and 90.29% in Hazara watershed circle (Table 19). The total successful planting stock was 26.33 million with 65.54% plantable size and 48.96% of smaller sizes unfit for planting (Table 19).

Similarly, in private bare rooted nurseries the total of planting was 6.41 million out of which 1.32 million had been extracted and distributed while 5.09 million were available for monitoring. The overall average success rate of seedlings was 89.14% with 91.33% in Southern region, 96% in Malakand region, 74.76% in Hazara region and 94.47% in Hazara watershed circle (Table 20). Out of the total 5.74 million successful seedlings 89.32% were of plantable size while 16.20% were still small and unfit for planting (Table 18).

Despite of low capacity and limited resources success rate of seedlings in private tube nurseries was higher than the departmental tube nurseries i.e. 91.32% in private tube nurseries and 85.80% in departmental tube nurseries. While success rate in private and departmental bare rooted nurseries was similar. However, it was generally observed that quality of plants extraction and transportation in private nurseries was lower as compared with the departmental nurseries. Nursery farmers need to be properly guided about the timing of plants extraction, storage and transportation to reduce losses and increase success rates when planted.

Table-19 Planting stock and success rate in private tube nurseries

Regions	Total sock raised	Distributed to plantations	Available at the time of monitoring	Success Rate	Net Stock	Plantable	%	Unplantable	%
South	9,094,000	1,603,600	7,490,400	82.52	5,879,276	3,871,349	65.85	2,007,927	51.87
Malakand	17,878,631	2,674,550	15,204,081	79.17	12,472,407	8,499,144	68.14	3,999,656	47.06
Hazara	6,233,516	587,348	4,864,352	67.94	4,131,950	2,457,422	59.47	1,674,528	68.14
Watershed	4,629,439	1,317,320	3,312,119	90.29	3,847,960	2,429,805	63.15	767,655	31.59
All regions	37,835,586	6,182,818	30,870,952	91.32	26,331,593	17,257,720	65.54	8,449,765	48.96

Table-20 Planting stock and success rate in private Bare rooted nurseries

Regions	Total sock raised	Distributed to plantations	Available at the time of monitoring	Success Rate	Net Stock	Plantable	%	Unplantable	%
South	1,150,000	10,000	1,140,000	91.33	1,073,000	960,315	89.50	112,685	11.73
Malakand	2,104,680	30,000	2,074,680	96	2,016,694	1,786,806	88.60	359,912	20.14
Hazara	2,046,433	932,358	1,114,075	74.76	1,590,924	1,441,181	90.59	237,365	16.47
Watershed	1,114,558	351,450	763,108	94.47	1,066,284	944,711	88.60	121,573	12.87
All Region	6,415,671	1,323,808	5,091,863	89.14	5,746,902	5,133,013	89.32	831,536	16.20



4.1.14 Community mobilization

Similarly like Phase-I, the Directorate of Community Development, Extension & Gender & Development (CD, E&GAD) was involved with the Area Managers in identification of new closures and plantation areas, establishment of community organizations and their engagement of plantations and protection of closures, identification of farmers and distribution of seedlings under farm forestry and awareness raising and support in planned adaptation against Climate Change.

The progress of CD,E&GAD was assessed during monitoring of plantations, closures, nurseries and other field interventions. Though the mobilization process was found much improved as compared with the last year however there is further need for improvement especially in case of closures and engagement of community Negahbans.

4.1.15 Capacity building of farmer communities and entrepreneurs

The Directorate of institutional and Human Resource Development (I & HRD) has been mandated to build capacity of the project beneficiaries with the main emphasis on sensitization about improvement of environment, climate change adaptation and raising forest nurseries, plantation and their maintenance. Moreover I & HRD was also to organize trainings on seed collection, soil conservation techniques, bioengineering structures, disaster risk reduction, nursery raising, community management skills, farm forestry preparation of watershed and range management plans and exposure visits for all stakeholders including communities, farmers and Forest Department field staff.

During phase-II the I&HRD Directorate had been given the target of providing training on the following:

1. Preparation of model integrated watershed & range management plans
2. Promotion of NTPs (Chilghoza, MAPs and Honey Bees)
3. Nursery Management techniques and seed collection
4. Badland stabilizations and disaster risk reduction,
5. Community management skills.

Against the above mentioned targets the I&HRD had made the following progress:

- Conducted a four days training for KP FD staff on Integrated Watershed Management Planning and preparation of management plans and bioengineering techniques. A total of 19 persons were trained. The training contents included soil conservation (surface erosion, gully erosion channel erosion and landslide stabilization) and watershed planning process. The training sessions consisted of lectures, group work and practical demonstration. As a result of this training 10 Watershed Management Plans were prepared and refined by the resource person. Six out of the 10 plans have been approved while four are in the process.

- Conducted trainings for Community Negahbans and local FD staff on improved watch and ward, forest fire control, seed collection and collection of information in forest closures. By end of March a total of 2876 individuals had been trained throughout the province. Moreover, proper resource material including training module, handouts and other material have also been developed. The trainings consisted of lectures, group work and practical demonstrations. At the end of each training activity calendar and action plans had been prepared by the participating community Negahbans for their respective areas.
- Conducted trainings for farmers on nursery raising and management techniques and trained 3068 farmers (including 824 women);
- Conducted trainings for community members on community management skills and trained 1002 persons (including 263 women);

4.1.16 Promotion of non-timber forest products (medicinal plants, mushrooms and honey)

During phase-II the NTFP Directorate had been assigned the target of provision of honey bee boxes to progressive farmers and capacity building of bee farmers establish baseline of NTFPs for each eco-region in four valleys and assess present status of NTFPs, their conservation and marketing problems, and future potential for marketing of NTFPs with the following specific assignments

- Identify marketable NTFPs of each zone and assess their demand & supply potential.
- Promote collection, storage, processing and labeling of preferred species.
- To package the mechanism of conservation and sustainable utilization of high value medicinal plants of upland forests.
- Provide community with market information and enable it to fetch fair and competitive price.
- Package and impart necessary skills to collectors about identification, collection, processing and storage of important NTFPs.
- Establish and promote forward and backward linkages about NTFP that impact local economy and establish entrepreneurship.

As of March 2017, the NTFP directorate had conducted four baseline studies on NTFPs two each in Hazara and Malakand circles. Moreover, it had distributed 400 boxes of honey bees in Southern circle (Table 19). A total of nine beneficiaries were interviewed and their response about the honey bees' boxes was recorded. Eight of the nine respondents were satisfied with the activity while one had returned the boxes back to the KP FD. Moreover, four of the nine respondents had multiplied the honey bees' colonies, three had the same number of colonies, one had lost one colony due to heat and one had returned the honey bee colonels back to the FD due to unknown reason (Table 21).

Table-21 Information of Honey bee Boxes distributed in Southern Region

S. No	Name	Village	Division	Boxes	Response of Beneficiaries
1	Saifullah S/O Abdullah	Behram Khel Lakki Marawat	Bannu Forest Division	5	Fully satisfied and now increase to 20 by himself
2	aMuhammad Younas Khan S/O M. Yousaf Khan	Doda Sharif Lakki Marwat	Bannu Forest Division	5	Satisfied but one box is empty now due to heat
3	Bashir S/O Abdur Rehman	Lachi Bazar	Kohat Forest Division	5	Fully satisfied and now increase to 30 by himself
4	Zain-ul-Abidin S/O Taj-ud-din	Atal Sharif, Tehsil Kulachi	D I Khan Forest Divisionq	8	Satisfied and but now 7 boxes are available on damage
5	Muhammad Raziq S/O Gul Payo Khan	Hamedan Karak	Kohat Forest Division	5	Fully satisfied and now increase to 6 by himself
6	Noor Zaman S/O Haji Roghan and Noor Zaman S/O Haji Roghan	Wanda Khani, Galoti Paniala Road	D I Khan Forest Divisionq	8	Fully satisfied and now increase to 25 by themselves
7	Arshad Ali S/O Fazal Dad	Rustam Mardan	Mardan Forest Division	4	Not available and boxes handover back to Department
8	Sajid S/O Aurangzeb and Umer Khan S/O Hameed Gul	Gojar Garri Mardan	Mardan Forest Division	8	Fully satisfied
9	Jabbar Ahmad S/O Inamullah	Muhib Banda	Peshawar Forest Division	2	Fully satisfied

4.1.17 Research and development

During the BTAP Phase-II, the R&D directorate had been assigned to conduct the following studies:

- Development of applied research agenda based on actual problems faced by the Department
- Assessment of closure & standardization mechanism of closure in all eco zones.
- Fuel wood per capita as well as total household consumption in Khyber Pukhtunkhwa.

As of March 2017, the R&D directorate had initiated impact assessment of closures established during Pahse-1 in three ecological zones i.e. Sub-tropical Broad-leaved and Scrub Forest, Chir Pine Forest, and Moist Temperate Forest. By end of March the R&D directorate had completed data collection while report writing was in progress. The R&D directorate has successfully completed the fuel wood consumption study in the whole

province and according to the study the total estimated fuel wood requirement of KP would be 17.4 and 24.7 million m³ in 2019-20.

5 ASSESSMENT OF CONTRACTS/PROJECT VIS-À-VIS GOVERNMENT OF KHYBER PAKHTUNKHWA SAFEGUARD POLICIES AND NATIONAL ENVIRONMENTAL LEGISLATION/REGULATIONS; UNMITIGATED ENVIRONMENTAL ISSUES OBSERVED

The BTTAP being a forestry project is planned according to the Pakistan Environmental Protection Act 1997 and the Khyber Pakhtunkhwa Environmental Protection Act 2014. Like last year this year too some exotic species have been planted on saline and waterlogged areas, which is against the environmental acts. The rest of the project interventions were found well in accordance with these acts and regulations. The project contributes to the objectives of these acts and regulations through;

- Increasing forest cover through plantations and natural regeneration;
- Prompting natural vegetation and biodiversity through establishment of enclosures in natural forests;
- Promoting biological and bioengineering measures to stabilize and rehabilitate degraded slopes and watersheds thereby encouraging environment friendly ways;
- Enhancing carbon sink through afforestation and protection of forests.
- Involving local communities and stakeholders in nursery raising, plantations and protection of forests.

6 NEW AND INNOVATIVE APPROACHES AND TECHNIQUES ADOPTED

During third party monitoring of BTAP, the field teams of WWF-Pakistan observed some innovative techniques adopted by different forest divisions to ensure good survival rate of their plantations. During interviews, most of the field staff of KP Forest Department is of the view that after plantation. Watering is a big challenge because of area terrain, limited resources and most important scarcity of water. To overcome this problem and increase the survival rate of plantation some innovative ideas were adopted. Brief of these innovative ideas are given below:

6.1 Water conservation through disposable bottles

District Chitral falls in the dry temperate zone (out of monsoon spell) and facing shortage of water. The field staff has adopting an innovative idea of using disposable bottles to get maximum benefit from limited available water. Bottles were partially buried close to the plant with small holes in the base. This technique not only useful to avoid evaporation but also reduce the quick percolation of water, which is beyond the access of roots of newly,



planted seedlings.

6.2 Establishment of water storage points near plantation site

In Kohat Forest Division, the water storage points were constructed near the plantation area for watering the plants. Considering the soil texture and scarcity of water, the water collection points were lined with plastic sheet to avoid loss of water.



6.3 Instillation of Solar tube wells for watering

The whole country and especially the rural area is facing shortage of electricity. To overcome this problem, D I Khan Forest Division has installed solar panels to run the tube wells and watering of their plantations.



6.4 Supplementing plantation with sowing

In most of plantations carried out under BTAP, planting of seedlings were further supplemented with sowing of few seeds of local species including Kikar, Phulai, Chir, Sanitha, Ber etc. along pit filling. Digging a pit for plantation is also working as small rainwater harvesting point for those seeds and ensures it's sprouting. During field monitoring, it has been observed that this technique is not only useful to increase the survival percentage but also enhancing the ratio of indigenous flora.



7 CONCLUSION AND RECOMMENDATIONS

7.1 Overall performance and achievements:

In nutshell, the project has done an excellent job. Based on the data collected and general observations we come to the conclusion that by end of June 2017 the KP Forest Department under the BTTAP had planted 872.3 million seedlings through establishment of closures in degraded natural forests; block plantations and sowings on private, communal and state lands including the natural regeneration in these areas; linear plantations along roadsides and canal sides; woodlots on private farm and marginal lands; plantations and sowing on badlands and saline and waterlogged areas; provision of seedlings to farmers for linear plantation along farmlands. Out of these plantations 774.13 million are successful with an overall average survival rate of 88.75% (Table 22).

The project besides providing job opportunities to farmers through private nurseries has also engaged hundreds of thousands of labour in establishment of closures, carrying out plantations and soil conservation works.

Table-22 key achievements of BTAP (till end of June 2017) (closures, plantations, sowing and farm forestry)

Total Plants planted and surviving during BTAP			
Phase	No. of seedlings planted, sown and raised in plantations and closures by FD	Plants surviving	Survival Rate %
End of Dec 2015 (Under Phase-I)	76922178	72140674	88.75
end of Dec 2016 (Under Phase-II)	727363417	643647164	
end of Jun 2017 (Under Phase-II)	68012054	58341264	
G Total	872297649	774129103	

Percentage of plants raised through different interventions

Of the total 872.3 million plants, about 59% comes from closures followed by 13.65% from Block plantation. Contribution of Farm Forestry & Mass Plantation Events, Woodlots, Sowing and Dibbling and Reclamation of saline and waterlogged areas are 6.77 %, 6.62 %, 5.21 % and 4.94 % respectively (Table 23).

Table-23 Percentage of plants raised through different interventions

Activity	No of Plants	%age
Closure of depleted designated forests	513.8	58.90
Planting on communal and private	119.0	13.65
Natural regeneration in block plantations	3.2	0.37
Woodlots	57.8	6.62
Sowing and Dibbling	45.4	5.21
Reclamation of saline and water-logged areas	43.1	4.94
Planting along road side, canal side and railway tracts	3.4	0.39
Farm Forestry & Mass Plantation Events	59.0	6.77
Reclamation of Badlands	27.5	3.15
Mazri and Kana	0.1	0.01
Total seedlings	872.3	100

8 SWOT ANALYSIS OF BILLION TSUNAMIA AFORESTATION PROJECT

Strengths

- Visibility on ground
- Cost effective
- Awareness
- Transparency
- Organized community in form of CBOs
- More relay on natural ecological process like enclosure.
- Covering the whole province enhance the forest area
- Involvement of community in management
- Multi dynamic project

Weakness

- Limited human resources
- Absences of long term planning
- Finical constrains
- Deficiency in staff
- Community choices and preference
- Lack of experts for specilized work like bioengering structure

Opportunity

- Alternative livelihood
- Women employment through nurseries and other trainings
- Improvement in wildlife habitat

Threats

- Climatic issue such as drought
- Community dispute and poverty
- Natural disaster mostly fire and flood
- Change in political preference

8.1 Recommendations

Based on the field monitoring, we put forward the following recommendations:

- Keeping in view the good sprouting results and low cost, sowing and dibbling should further be increased. Moreover, provision for proper management operations such as watering (in southern districts and Chitral), watch and ward with fencing of strategic points should be provided for this type of plantations.
- As pointed out by the field staff it was difficult to convince the farmers and communities for sowing as they wanted proper plantations on their fields. This concern can be minimized if sowing and planting are combined. Moreover, some other incentives should also be searched and discussed to convince the farmers for this cost-effective activity.
- From planting point of view free of cost seedling distribution was very much appreciated by the farming community however in areas where private nursery raising was an established business, the nursery growers had been affected by reducing the open market demand for seedlings. In most of such nurseries the planting stock could not be sold due to no or very less demand. It is therefore recommended that in future phase of the BTTAP already existing nursery growers should also be given quota to raise nurseries for the project.
- The bulk of work involved in distribution of planting stock sometimes resulted in delays and drying out of the seedlings before planting. Therefore, the seedlings distribution lists and requests should be prepared well before the events are held. We therefore recommend that the process and lists are completed by end of December each year. Moreover there is need for developing a leaflet guideline for the farmers about transportation of seedlings, storage and planting.
- This time again the plans were missing in most of the specialized works like rehabilitation of saline and waterlogged areas and rehabilitation of bad (degraded) sites. Though training had been organized by the HRD on watershed management still the planning was missing mostly in case of rehabilitation of badlands and saline and waterlogged areas. Unless and until there is proper planning explaining the requirement of the sites, the type and design of the rehabilitation measures and techniques the quality of work would not be up to the required standards. There will be more likelihood of failures and wastage of resources. Therefore, the preparation of proper plans need to be given more importance and should be ensured in future.
- It is further recommended that in future all badlands and degraded watershed should be mainly treated by bioengineering structures rather than big pure engineering structures. It has been estimated that stabilizing badlands through biological measures required 70 % less amount with minimum skills.
- Contracts with farmers for raising private nurseries were signed only for one year, which did not motivate farmers for investing in proper layout, infrastructure and other facilities required for

nurseries. In any future projects the contracts should be at least for two years to provide some space to farmers to establish excellent quality nurseries with more professionalism.

- It was generally observed that standards regarding plants extraction, storage and transportation in private nurseries were lower as compared with the departmental nurseries. Nursery farmers need to be properly guided about the timing of plants extraction, storage and transportation to reduce losses and increase success rates when planted.
- Regarding community mobilization especially for establishment of closures the process has improved but still there is need for improvement. The dual reporting of FD and WD is creating some confusion among the community Negahbans and the VDCs. This need to be clarified and the responsibilities should be handed over to FD field managers, CD& GAD along with the FPM unit.
- Comparing with other species proportion of exotic species especially Eucalyptus was again more. According to the field staff as well as response from the beneficiaries, farmers generally opted for fast growing species especially Eucalyptus due to its hardy nature, high success rate in dry areas and ability to coppice. However, keeping in view the fast growth of Shisham, Kikar and other indigenous species planted last year under the BTTAP in Southern districts, farmers can be convinced easily for these species. Moreover, incentives like providing honeybees colonies can also be linked with planting of indigenous species like Ber.
- Delays in releases of funds have created uncertainty and doubts on the parts of farmers and labours. In most of Forest Divisions wages of closures Negahbans were not paid from six to nine months. Timely releases of funds are highly recommended.
- Like last year this again we recommend that cash awards for good performing staff, farmers and communities for their encouragement and motivation.
- R&D, PFI and other research institutes should be engaged to develop their research plan and facilitated to conduct research on topics relevant to the BTTAP; its process, tools and techniques, effectiveness and impacts future programming. Following research topics are recommended:
 - i. Natural regeneration in plantation areas; species and their number of seedlings.
 - ii. Zones wise growth of different species planted in plantations;
 - iii. Comparison of plantations raised from planting and seed sowing; Success rate growth rate and cost etc.
 - iv. Production from plantations. Areas planted during phase-1 are now producing some fuel wood from branch pruning especially in southern districts. This needs to be quantified on scientific bases.

- v. Impact of slope stabilization measures adopted under BTTAP;
- vi. Regular assessment of regeneration in closures and their impacts on biodiversity;
- vii. Replication of BTTAP nurseries rising and plantation activities by farmers from their own resources.

9 APPENDIX

9.1 Appendix-A: Monitoring TORs

1. Background of the project

Forestry, Environment and Wildlife Department, Government of Khyber Pakhtunkhwa is implementing “Billion Tree Afforestation Project aims at planning, designing, commencing and implementing “Green Growth Initiative”. The Project is operative throughout the Khyber Pakhtunkhwa. The overarching objective of the project is to conserve, improve and rehabilitate forest ecosystems as well as to help in transforming current economic growth model to Green Economy gradually. Besides, it will create job opportunities for the women, youth, senior citizen and farmer and provide means for social uplift and poverty eradication in the Province.

2. Stakeholders and Beneficiaries:

The stakeholders are all regional and Divisional Forest Officers, Village Development Organizations (VDCs)/Women Organizations (WOs), outsource contractors and nursery growers. It will also include rural people of the project area in particular while the people of Khyber Pakhtunkhwa at large.

3. Description of Scope of Work:

The scheme of Monitoring will include up to 20% external/third party monitoring. The main scope of work desired to be carried out under this consultancy services include but not limited to the following:-

Regular Monitoring of the Project activities will be carried out to ensure transparency, quality, effective and judicious utilization of development funds. The major activities (**Annexure-IIIa of the RFP**) to be monitored and evaluated include departmental nurseries, private nurseries, departmental plantations, outsourced plantations, rehabilitation of degraded watersheds and enclosures. The exercise will cover all Project areas of intervention and all kind of related services. The consultancy in first phase will report on activities executed till December 31, 2016 and in second report of activities upto June 30, 2017.

The responsibility of the selected firm/organization will be as under:-

- Random and even distributed verification/validation of upto 20 % areas, works executed under each category of the project and independent report to PMU on all project activities. The monitoring will be carried out by using means like record of plantation journals, nursery journals, case studies, photos and maps and additional means mutually agreed and approved by Project Steering Committee (PSC).
- Regular feedback on the progress being made towards achieving the set out objectives.
- The Monitoring team will provide information to the field formation and PMU that can help the management to take informed decision in order to improve performance and achieve the planned targets.

The team will provide detail of effectiveness of the developmental activities in line with key/essential indicators as mentioned in the following table.

Deliverables

The firm will be required to provide the Monitoring report at the end of the assignment. The language of the reports will be English. Illustrations, if necessary, may be provided as part of the reports. The report shall have the following indicative Table of Contents:

- Introduction
- Study methodology
- Outcome of document review

- Outcome of the field investigations
- Unmitigated environmental issues observed during field investigations
- Assessment of contracts/project vis-à-vis Government of Khyber Pakhtunkhwa safeguard policies and national environmental legislation/regulations.
- Capacity building needs
- Conclusions and recommendations
- Appendices (photographs, and any other relevant supporting details).

9.2 Appendix-B: Survey sheets

Data sheet for Planting of multi-purpose fast growing tree species (Block plantation)

Name of Plantation incharge & Cnt # : _____ Date: _____

1) CNIC #:

						-										-	
--	--	--	--	--	--	---	--	--	--	--	--	--	--	--	--	---	--

2) Date of

establishment:

_____ Division _____, Range _____,

Block _____ Location: _____

3) Area Coordinates: N _____, E _____ Elevation: _____m

4) Area Claimed _____ ha & Area verified: _____ ha Aspect : _____

5) Ecological zone: _____ Site quality: Good ☐ Fair ☐ Poor ☐

6) Agreement exists: ☐ Yes ☐ No, if yes, please provide a copy of the agreement.

7) Name of VDC: _____

8) Survival rate _____, Causes of failure _____

9) Number of Total plants _____ Tube Plants: _____ Bare rooted Plants _____

Species:

Species					
Number					

10) Beating up of failure : Yes ☐ No ☐, Date _____ If yes, how much _____

11) Slope: Gentle ☐ Moderate ☐ Steep ☐

12) Site accessibility: Metal road ☐ Mud road ☐, Bridle path ☐, other _____

13) Area demarcated: Yes ☐ No ☐

If yes, specify signs of demarcation _____

14) Land status: _____

15) Dispute if any _____

16) Source _____ of _____ planting _____ stock _____

17) Protection mechanism: _____

18) Future plan: _____

19) Issues: _____

Area coordinates

Points	North	East

Performa for Closure of depleted designated forests for increasing natural regeneration

A. General Information:

Name of VDC/CBO: _____ Date: _____

1) Name and designation of respondent: _____ Contact #: _____

2) CNIC #:

[illegible]

3) Date of closure: _____ Location: _____

4) Coordinates: N _____, E _____ Elevation: _____ m

5) Aspect: _____ Ecological zone: _____

6) Area: _____ ha Area demarcated: Yes ☐ No ☐ If yes, specify _____

7) Participated in training conducted by HRD: Yes ☐ No ☐

8) Ownership status of forest:

Government: ☐ Community owned: ☐ Individual: ☐ Other (Please specify)

9) Agreement with FD: Yes ☐ No ☐ If yes, please provide copy of evidence:

10) Protection mechanism: Barbed wire: ☐ Live fence (vegetation): ☐
Brushwood: ☐

Watcher: ☐ Other (Please specify)

11) Status of terms and conditions: Fully followed: ☐ Partially followed: ☐ Not followed: ☐

12) Are there any follow up activities? Yes ☐ No ☐

13) If yes, pl explain below:

- _____
- _____
- _____

14) If no, explain the reason/s below:



Performa for Agroforestry and Farm forestry

Date: _____

A. General information

- 1) Location: _____
- 2) Name: _____
- 3) GPS Coordinates: _____ N _____ E Elevation: _____ m
- 4) Aspect: _____
- 5) Ownership: Community ☐ Individual ☐
- 6) Purpose of AF/FF:
 Fuel wood ☐ Fodder ☐ Timber ☐ Other (please specify)

- 7) Date of planting: _____
- 8) Number and species of plants provided:

Species	No. of plants	
	According to records	According to grower

9) Plant to plant spacing: _____

10) Survival rate: _____ %

11) Are you satisfied with the activity? Yes ☐ No ☐

12) Reason/s for being:

a) Satisfied: _____

b) Unsatisfied: _____

13) Suggestion/s for improvement:

a) _____

b) _____

c) _____

B. Physical verification of plants

Site/farmer	Species	Plants sown	Plants survived	Spacing (m)	Pit size(cm)		Plant size (cm)	Damage (F,G,C)
					W	D		

Performa for and landscaping (roads, canals, and railway tracts)

A. General Information

Name of linear plantation / incharge: _____ Date: _____

20) CNIC #:

					-									-	
--	--	--	--	--	---	--	--	--	--	--	--	--	--	---	--

21) Date of _____ establishment: _____

_____ Division _____, Range _____,

22) Block _____ Location: _____

23) Area Coordinates: N _____, E _____ Elevation: _____ m

24) Area recorded _____ ha Area verified: _____ ha Aspect : _____

25) Access to site: Asphalt road: ☐ Earth road: ☐ Bridle path: ☐ None: ☐

26) Layout plan exists: Yes ☐ No ☐ If yes, please provide a copy

27) General/aesthetic layout: (Roads, Canals, and Railway Tracts)

a) Spacing: Well maintained: ☐ Fairly maintained: ☐ Poorly maintained: ☐

b) Species suitability All: ☐ Some ☐ None: ☐ Remarks if any: _____

c) Irrigation/watering: Yes ☐ No ☐ If yes, frequency: _____

d) Protection mechanism: Yes ☐ No ☐ If yes, type of mechanism _____

B. Transect Data (sampling)

<i>Transect No.</i>	<i>Plot No.</i>	<i>No. of plants</i>	<i>Species</i>	<i>Spacing</i>	<i>Plant size</i>	<i>Pit size</i>	<i>Survival rate (%)</i>	<i>Damage (F,G,C)</i>

Performa for bare-rooted Nursery (Private)

C. General Information:

Name of nursery grower _____ Date: _____

35) Gender: Male ☐ Female ☐ Age: _____ years

36) CNIC #:

					-									-	
--	--	--	--	--	---	--	--	--	--	--	--	--	--	---	--

37) Date of nursery establishment: _____ Location _____

38) Division _____, Range _____, Block _____

39) Coordinates: N _____, E _____ Elevation: _____ m

40) Agreement exists: ☐ Yes ☐ No, if yes, please provide a copy of the agreement.

D. Technical Information

Particulars	Status (Y/N)	Comments
Inspection paths		
Signboards		
Fencing		
Irrigation system (Please tick, pipe, water channel, tube well)		

E. Cultural Practices

Practice	Weeding	Hoeing	Fertilizers	Pesticides
Yes/ No				

Planting stock: _____ Units

Species								
Fit (3 feet above)								
Unfit (3 feet below)								
Total								



Performa for Tube Nursery (Private)

F. General Information:

Name of nursery grower _____ Date: _____

41) Gender: Male ☐ Female ☐ Age: _____ years

42) CNIC #:

						-										-	
--	--	--	--	--	--	---	--	--	--	--	--	--	--	--	--	---	--

43) Date of nursery establishment: _____ Location _____

44) Division _____, Range _____, Block _____

45) Coordinates: N _____, E _____ Elevation: _____ m

46) Agreement exists: ☐ Yes ☐ No, if yes, please provide a copy of the agreement.

G. Technical Information

Particulars	Status (Y/N)	Comments
Inspection paths		
Signboards		
Fencing		
Irrigation system (Please tick, pipe, water channel, tube well)		

1) Management Practices:

a) Total No. of poly: _____ No. Filled: _____ No. sown _____ No.

b) Seed treatment ☐ Yes ☐ No, if yes, please specify _____

c) Germinated: _____ No. Established seedlings: _____ No.

2) Cultural Practices (pictorial verification):

Practice	Irrigation/ watering	Transplanting	Root trimming	Shifting	Fertilizers	Pesticides
Yes/No						

3) Specie wise status of plants (Plantable / un-plantable): _____ Units

Species	Poly bags sown (No.)	Germination rate (%)	No. of plantable seedlings	No. of un- plantable seedlings	Survival rate (%)	Remarks

9.3 ***Appendix-C: Questionnaires and interviews checklist***

- 1) Introduce the team and explain the objective of the meeting and visit
- 2) Inform them about the methodology and tentative plan
- 3) Collect following information and record:
 - a. Sub division and block wise activities & their updated status (collect the filled in Performa already shared)
 - b. Maps, sketches and drawings
 - c. Management plans
 - d. Fixed point photos
 - e. Plantation and nursery journals
 - f. Procedure and process adopted
 - g. Copies of agreements
 - h. Copies of guidelines and manuals
 - i. Information about VDCs
 - j. Other (if any)
- 4) Ecological zone wise
- 5) Discuss issues confronted during the implementation (in procedures, resources, timeline, natural and manmade hazards etc.)
- 6) Share and review the selected sites for detailed monitoring visits
- 7) Revise and finalize the plan and ask for field facilitation.

9.4 Appendix-D: Detail of Enclosure

S. No	Region	Division	Sub-division	No of Closures	Zone	Average Regeneration per ha	Area	Total Regeneration
1	South	Peshawar	Nowshera	8	Scrub	1960.00	320.00	627200.00
2	South	Mardan	Gadoon	20	Scrub	3861.49	810.00	3127806.90
3	South	Kohat	Hangu, Kohat, Karak	40	Scrub	1657.70	1951.60	3235167.32
4	South	D I Khan	Shiekhbadan	30	Tropical Thorn	1481.40	1534.00	2272467.60
5	South	Bannu	Banuu, Lakki Marwart	35	Tropical Thorn	2052.10	2042.10	4190593.41
						2203	6657.70	
6	Hazara	Agror Tanawal	Gidarpur, Oghi, Shergarh	19	Sub-tropical Chir zone	3460.00	810.70	2805022.00
7	Hazara	Gallies	Dongagali, Berangali	10	Moist temperate zone	2641.70	476.00	1257449.20
8	Hazara	Gallies		5	Sub-tropical Chir zone	3097.14	200.00	619428.00
9	Hazara	Haripur	Ghazi, Khanpur	6	Sub-Tropical broad Leave	2295.20	495.00	1136124.00
10	Hazara	Haripur	Makhnial, Satora	6	Sub-tropical Chir zone	4233.30	331.00	1401222.30
11	Hazara	Kaghan	Ghari	6	Sub-Tropical Chir zone	2159.50	283.20	611570.40
12	Hazara	Kaghan	Balakot	5	Moist Temprate	2572.91	220.00	566040.20
13	Hazara	Hazara Tribal	Battagram, Alai, Pashto	13	Moist temperate zone	2250.00	536.50	1207125.00
14	Hazara	Hazara Tribal	Battagram, Alai, Pashto	15	Sub-Tropical Chir Pine	2962.00	761.10	2254378.20
15	Hazara	Lower Kohistan	Patan, Palas	6	Dry Temperate	1431.00	317.50	454342.50
16	Hazara	Lower Kohistan	Patan	1	Moist Temperate	1638.00	50.00	81900.00
17	Hazara	Upper Kohistan	Komila, Jalkot	6	Dry Temperate	1409.97	335.00	472339.95
18	Hazara	Upper Kohistan	Komila	1	Moist Temperate	1811.20	60.00	108672.00
19	Hazara	Siran	Upper siran, Battal	8	Moist Temperate	2146.00	328.00	703888.00
20	Hazara	Siran	Mansehra, L.Siran	7	Sub-tropical chir zone	4292.00	334.00	1433528.00
21	Hazara	Thor Ghar	Judba	3	Sub-tropical chir	3432.00	120.00	411840.00
22	Hazara	Thor Ghar	Judba	4	Sub-tropical Broad Leave	2877.00	160.00	460320.00
23	Hazara	Thor Ghar	Judba, Kandar	6	Moist temperate zone	2133.00	245.00	522585.00
						2602	6063.00	
24	Malakand	Alpuri	Alpuri	13	Moist Temperate	2468.00	2359.00	5822012.00
25	Malakand	Alpuri	Alpuri	3	Sub-tropical Chir	3025.00	358.00	1082950.00
26	Malakand	Bunir	Daggar	5	Moist temperate zone	2130.00	497.00	1058610.00
27	Malakand	Bunir	Chamla	7	Sub-Tropical Chir Pine	2420.00	498.00	1205160.00
28	Malakand	Bunir	Daggar	4	Sub-tropical Broad Leave	1710.00	141.00	241110.00
29	Malakand	Chitral	Drosh South	8	Dry Temperate	1900.00	765.00	1453500.00

30	Malakand	Lower Dir	Thermargara	8	Transition Zone	3987.00	329.00	1311723.00
31	Malakand	Malakand	Dargi, Batkhela	12	Sub-Tropical Chir Pine	3168.60	1215.00	3849849.00
32	Malakand	Swat	Mingora	14	Sub-Tropical Chir Pine	2420.00	2117.00	5123140.00
33	Malakand	Swat	Kabal	2	Moist Temperate	2170.00	334.00	724780.00
34	Malakand	Malakand	Kalam	7	Moist temperate	2623.50	519.00	1361596.50
35	Malakand	Malakand	Kalam	5	Dry temperate	1583.00	493.00	780419.00
36	Malakand	Dir Kohistan	Sheringal	9	Dry temperate	1624.34	385.00	625370.90
						2402	10010.00	
37	Watershed	Kunhar w/shed	Siran, Balakot, Garhi, Bakot	12	Sub-tropical Chir zone	1446.30	520.00	752076.00
38	Watershed	Unhar W/Shed	Battagram, Alai	2	Sub-tropical chir	2244.00	108.00	242352.00
39	Watershed	Unhar W/Shed	Alai	5	Moist temperate zone	1583.00	243.50	385460.50
40	Watershed	Kohistan-Besham W/Shed	Besham	13	Moist temperate zone	2441.22	819.00	1999359.18
41	Watershed	Bunir W/Shed	Pacha	4	Sub-tropical Chir	1960.00	83.00	162680.00
42	Watershed	Bunir W/Shed	Chamla	2	Sub-tropical Broad Leave	1680.00	140.00	235200.00
43	Watershed	Daur W/shed	Abbotabd. Havelia	8	Sub tropical chir zone	3296.91	365.00	1203372.15
						2093.1	2278.50	
Total				403			25009	59581730
Avg						2412	1038	

9.5 Appendix-E (I): Details of plantations of multipurpose tree species

Region	Foest division	Range/subdivision	Location/ site	Aera claimed (ha)	Aera ha (Mointering Team)	Variance	%	Total plants planted (per recored)	Total plants planted (Mointering team)	Variance	%	Survival Rate %
South	Peshawar	Peshawar	Ghari Chandan	406	407	1	0.24631	447774	447800	26	0.0058065	88.4
South	Peshawar	Charsadda	Dheri zardad	70	68	-2	2.85714	75250	75297	47	0.0624585	84
South	Peshawar	Nowshera	Army firing range	165	167	2	1.21212	177375	177325	-50	0.0281889	75
South	Avg			213.67	214	0.33	0.15601	233466	233474	7.66667	0.00328	82.47
South	Total			641	642	1	0.15601	700399	700422	23	0.0032838	
South	%											
South	Mardan	Rustam	Janai	34	34	0	0	36550	36600	50	0.1367989	94
South	Mardan	Rustam	Dambarodara	40	40	0	0	43000	43000	0	0	96
South	Mardan	Rustam	Pitao Malandari	40	40	0	0	43000	43000	0	0	95
South	Mardan	Rustam	Sargaroo	25	26	1	4	26875	26786	-89	0.3311628	97
South	Mardan	Rustam	Pumba	25	24.8	-0.2	-0.8	26875	26964	89	0.3311628	97
South	Mardan	Rustam	Ziam Tangy	22	22	0	0	23650	23650	0	0	90
South	Mardan	Rustam	Shahtori	10	10.4	0.4	4	10750	10800	50	0.4651163	94
South	Mardan	Rustam	Bringan	10	10	0	0	10750	10700	-50	0.4651163	94
South	Mardan	Rustam	Saleem Khan	10	10	0	0	10750	10800	50	0.4651163	95
South	Mardan	Swabi	Nandaro kali	20	20	0	0	21500	21200	-300	1.3953488	88
South	Mardan	Swabi	Daggar	15	15	0	0	16125	16200	75	0.4651163	86
South	Mardan	Swabi	Mishako Banda	16	15.7	-0.3	-1.875	17200	17120	-80	0.4651163	88
South	Mardan	Katlang	Muslim Abad	40	41	1	2.5	43000	43000	0	0	90
South	Mardan	Katlang	Zareen abad	20	20	0	0	21500	21400	-100	0.4651163	92
South	Mardan	Katlang	Muslim Abad Jamgae	26	27	1	3.84615	27950	27800	-150	0.5366726	87
South	Mardan	Mardan	Marati	14	15	1	7.14286	15050	15120	70	0.4651163	96
South	Mardan	Mardan	Meshko ali mohammad	20	21.1	1.1	5.5	21500	21600	100	0.4651163	96
South	Avg			22.76	23.05882353			24472.0588	24455.29	-16.76	-0.05	92.65

South	Total			387	392.00	5	1.29199	416025	415740	-285	0.0685055	279
South	%											
South	Kohat	Kohat	Koteri	115	116.6	1.6	1.3913	123625	123675	50	0.0404449	95
South	Kohat	Kohat	Dhok Akbar khan	65	65	0	0	69875	69924	49	0.0701252	60
South	Kohat	Kohat	Dhoda	20	20	0	0	21500	21400	-100	0.4651163	75
South	Kohat	Kohat	Gul hassan banda	125	127	2	1.6	134375	134325	-50	0.0372093	70
South	Kohat	Kohat	Siab	100	100	0	0	107500	107416	-84	0.0781395	80
South	Kohat	Hangu	Bar Abbas khel	40	40	0	0	43000	43000	0	0	96
South	Kohat	Hangu	Reserve khrasha beat	92	91.1	-0.9	0.97826	98900	98800	-100	0.1011122	92
South	Kohat	Hangu	Kahi I & IV	254	255	1	0.3937	273050	273000	-50	0.0183117	95
South	Kohat	Teri	Shawai	23	24	1	4.34783	24725	24882	157	0.6349848	92
South	Kohat	Karak	Chak manzi	21	20.84	-0.16	-0.7619	22575	22470	-105	0.4651163	98
South	Kohat	Karak	Alwar Banda	500	497.7	-2.3	-0.46	537500	537420	-80	0.0148837	99
South	Avg			123.18	123.39			132420.45	132392.00	-28.45	-0.04	86.55
South	Total			1355.00	1357.24	2.24	0.17	1456625.00	1456312.00	-313	-0.021488	952
South	%											
South	Bannu	Bannu	Adami block	62	61.7	-0.3	0.48387	66650	66600	-50	0.0750188	98
South	Bannu	Bannu	Painda khel	325	325	0	0	349375	349275	-100	0.0286225	93
South	Bannu	Bannu	Kashoo	106	107	1	0.9434	113950	114000	50	0.0438789	95
South	Bannu	Bannu	Barathi	247	251	4	1.61943	265525	265475	-50	0.0188306	97
South	Bannu	Laki Marwat	Gambila	70	70.9	0.9	1.28571	75250	75200	-50	0.0664452	95
South	Bannu	Laki Marwat	Wanda mir alam	95	94.4	-0.6	0.63158	102125	102074	-51	0.0499388	95
South	Avg			150.83	151.6666667			162145.83	162104.00	-41.83	-0.03	95.50
South	Total			905	910	5	0.55249	972875.00	972624.00	-251	0.0257998	573
South	%											

South	D.I.Khan	D.I.Khan	Bhakkar C&W Land	500	502.2	2.2	0.44	37500	37477	-23	0.0613333	85
South	D.I.Khan	Paharpur	Mahmood abad	85	86	1	1.17647	91375	91274	-101	0.1105335	98
South	D.I.Khan	Paharpur	Kirri Kheshor	40	40	0	0	43000	43200	200	0.4651163	98
South	Avg			208.33	209.40			57291.67	57317.00	25.33	0.10	93.67
South	Total			625.00	628.20	3.20	0.51	171875.00	171951.00	3.20	0.51	281.00
South	%											
South	Avg									-10.81	-0.004	90.17
South	Total			3913.00	3929.44	16.44	0.42014	3717799	3717049	-750	-3717799	
South	%											90.17
Malakand	Malakand	Dargai	Dobandhi	300	298.8	-1.2	-0.4	322500	322600	100	0.0310078	56
Malakand	Malakand	Dargai	Damama Ghondai	42	40	-2	-4.7619	45150	45000	-150	0.3322259	89
Malakand	Malakand	Dargai	Kandao hryankot	189	190	1	0.5291	203175	203125	-50	0.0246093	88
Malakand	Malakand	Dargai	Jammu Hero Shah	177	175.5	-1.5	0.84746	176775	176867	92	0.0520436	86
Malakand	Malakand	Batkheila	Narey Tangai	203	205	2	0.98522	218225	218275	50	0.0229121	74
Malakand	Malakand	Batkheila	Totai Aspur	206	205	-1	0.48544	221450	221390	-60	0.0270942	75
Malakand	Avg			186.17	185.7166667			197879.17	197876.17	-3.00	-0.05	78
Malakand	Total			1117	1114.3	-2.7	0.24172	1187275	1187257	-18	0.0015161	
Malakand	%											
Malakand	Buner	Daggar	Katkala	192	191.8	-0.2	0.10417	206400	211200	4800	2.3255814	93
Malakand	Buner	Daggar	Balo Khan	100	96	-4	-4	107500	99800	-7700	7.1627907	80
Malakand	Buner	Chamla	Kuz kalay (Mia Dand)	92	90	-2	2.17391	98900	97060	-1840	1.8604651	78
Malakand	Buner	Chamla	Namdaar (Agarai)	118	119	1	0.84746	126850	124490	-2360	1.8604651	79
Malakand	Avg			125.5	124.2			134912.5	133137.5	-1775	2.1395349	82.5
Malakand	Total			502	496.8	-5.2	1.03586	539650	532550	-7100		
Malakand	%											
Malakand	Alpuri	Alpuri	Kat Khwar	90	89	-1	1.11111	95675	90348	-5327	5.5678077	44

Malakand	Alpuri	Alpuri	Narangai	61	60	-1	1.63934	65475	52539	-12936	19.757159	46
Malakand	Alpuri	Alpuri	Braim East	57	48.9	-8.1	14.2105	53000	33200	-19800	37.358491	81
Malakand	Alpuri	Alpuri	Inawar	36	36	0	0	38700	32021	-6679	17.258398	65
Malakand	Alpuri	Karora	Maira(Ijtema Ground)	21	22	1	4.7619	26875	29885	3010	11.2	96
Malakand	Alpuri	Karora	Gandorai(Kormang)	100	100	0	0	107500	108462	962	0.8948837	72
Malakand	Avg			60.83	59.32			64537.50	57742.50	-6795.00	-11.31	67.33
Malakand	Total			365	355.9	-9.1	2.49315	387225	346455	-40770		
Malakand	%											
Malakand	Kalam	Behrain North	Shagai	60	63	3	-100	64500	66000	1500	2.3255814	87
Malakand	Kalam	Behrain North	Dabargai	45	42.2	-2.8	-100	48375	44812	-3563	7.3653747	88
Malakand	Kalam	Behrain South	Stal Damlai	73	70.81	-2.19	-100	78475	74216	-4259	5.4272061	76
Malakand	Kalam	Behrain South	Dabargai	100	97	-3	-100	107500	101538	-5962	5.5460465	75
Malakand	Avg			69.5	68.2525			74712.5	71641.5			81.5
Malakand	Total			278	273.01	-4.99	1.79496	298850	286566	-12284	4.1104233	
Malakand	%											
Malakand	Swat	Mingora	Ashar Banr	114	116.69	2.69	2.35965	122550	129675	7125	5.8139535	91
Malakand	Swat	Mingora	Manyaar	21	18.7	-2.3	10.9524	22575	19430	-3145	-13.93134	73
Malakand	Swat	Kabal	Mailaga 1 & 2	93	90	-3	3.22581	99975	97534	-2441	2.4416104	64.29
Malakand	Swat	Kabal	Ningolai	124	128.7	4.7	3.79032	133300	145938	12638	9.4808702	93.5
Malakand	Swat	Fatehpur	Chamtalai Dandi 1&2	63	67	4	6.34921	67725	62514	-5211	7.6943522	85
Malakand	Swat	Matta	Baorai Banda	150	148	-2	1.33333	161250	169260	8010	4.9674419	91
Malakand	Avg			94.17	94.85			101229.17	104058.50			82.97
Malakand	Total			565	569.09	4.09	0.72389	607375	624351	16976	2.7949784	
Malakand	%											
Malakand	Dir Kohistan	Patrak	Biar Barikot	37.5	37.5	0	0	40312	40065	-247	0.6127208	91
Malakand	Dir Kohistan	Shirigal	Rondesh	100	98.18	-100	-100	107750	110000	2250	2.0881671	87

Malakand	Dir Kohistan	Shirigal	Kali Khwar (Miana Dhog)	55	55	-55	-100	59125	60866	1741	2.9446089	92
Malakand	Avg			64.17	63.56			69062.33	70310.33			90.00
Malakand	Total			192.50	190.68	-1.82	-0.95	207187.00	210931.00	3744.00	1.81	
Malakand	%											
Malakand	Upper Dir	Dir	Ganorai B	75	73.8	-1.2	-1.6	80625	79038	-1587	1.9683721	95
Malakand	Upper Dir	Dir	Sundrawal	80	79.57	-0.43	-0.5375	86000	85538	-462	0.5372093	96
Malakand	Upper Dir	Dir	Mashango Kas	60	60	0	0	67500	65200	-2300	3.4074074	93
Malakand	Upper Dir	Dir	Makhai	70	70	0	0	75250	78615	3365	4.4717608	94
Malakand	Upper Dir	Darora	Osherai	190	189	-1	0.52632	204250	202800	-1450	0.7099143	91
Malakand	Avg			95	94.474			102725	102238.2			93.8
Malakand	Total			475	472.37	-2.63	0.55368	513625	511191	-2434	0.4738866	
Malakand	%											
Malakand	Lower Dir	Jandool	Shontalla	90	90	0	0	96750	95400	-1350	1.3953488	81
Malakand	Lower Dir	Chakdara	Oghaz	138	136	-2	1.44928	148350	139600	-8750	5.8982137	76
Malakand	Lower Dir	Timergara	Talash	146	146	0	0	156950	157400	450	0.2867155	90
Malakand	Lower Dir	Timergara	Shamadeen	12	14.7	2.7	22.5	15050	13600	-1450	9.6345515	92
Malakand	Avg			96.5	96.675			104275	101500			84.75
Malakand	Total			386	386.7	0.7	0.18135	417100	406000	-11100	2.6612323	
Malakand	%											
Malakand	Chitral	Booni	Brep	73	73	0	0	78475	83108	4633	5.903791	94
Malakand	Chitral	Booni	Istach	38	38.8	0.8	2.10526	40850	42385	1535	3.7576499	95
Malakand	Chitral	Drosh North	Azor Dam	75	73.6	-1.4	1.86667	88750	92885	4135	4.6591549	95
Malakand	Chitral	Chitral	Sayed abad	30	30	0	0	32250	31800	-450	1.3953488	92
Malakand	Chitral	Chitral	Shadoke	14	14	0	0	15050	16200	1150	7.641196	93
Malakand	Chitral	Chitral	Langland School	4	5	1	25	4300	4400	100	2.3255814	99
Malakand	Avg			39	39.06666667			43279.17	45129.67			94.666667
Malakand	Total			234	234.4	0.4	0.17094	259675	270778	11103	4.2757293	
Malakand	%											

Malakand	Avg											
Malakand	Total			4114.5	4093.3	-21.25	0.51647	4417962	4376079	-41883	0.9480163	
Malakand	%											83.95
Lower Hazara	Haripur	Haripur	Karwala	71	71	0	0	76325	76325	0	0	73
Lower Hazara	Haripur	Khanpur	Julian	27	27	0	0	29025	29077	52	0.1791559	75
Lower Hazara	Haripur	Satura	Bodlan	101	100	-1	-0.9901	107500	106600	-900	0.8372093	82
Lower Hazara	Haripur	Makhanial	Noorpur	65	64	-1	1.53846	69875	69727	-148	0.2118068	71
Lower Hazara	Haripur	Makhanial	Bashkoli	55	56	1	1.81818	59125	59074	-51	0.0862579	54
Lower Hazara	Haripur	Khanpur	Deewan Salman Cement	60	60	0	0	96750	94400	-2350	2.4289406	41
Lower Hazara	Haripur	Ghazi	kotehra Guwari	213	213	0	0	228975	229124	149	0.0650726	91
Lower Hazara	Avg			84.57	84.42857143			95367.86	94903.86			69.57
Lower Hazara	Total			592	591	-1	0.16892	667575	664327	-3248	0.4865371	
Lower Hazara	%											
Lower Hazara	Gallies	Abbottabad	Solan Bala	20	20	0	0	21500	20800	-700	-3.255814	87
Lower Hazara	Gallies	Abbottabad	Akhrila & Nagaki Sarban	381.4	374.1	-7.3	-1.914	410263	410124	-139	0.0338807	83
Lower Hazara	Avg			200.7	197.05			215881.50	215462			85
Lower Hazara	Total			401.4	394.1	-7.3	1.81863	431763	430924	-839	0.1943196	
Lower Hazara	%											
Lower Hazara	Kaghan	Ghari	Shawal C-9	51.87	51	-0.87	1.67727	55680	55661	-19	0.0341236	88
Lower Hazara	Kaghan	Ghari	Dhana Muhammad jan	21	21	0	0	22575	22527	-48	0.2126246	73
Lower Hazara	Kaghan	Ghari	Jagir C-3	46	47	1	2.17391	49450	49600	150	0.3033367	89
Lower	Kaghan	Balakot	Ganol	40	40	0	0	53000	49200	-3800	-	91

Hazara											7.1698113	
Lower Hazara	Kaghan	Balakot	Bela ganol	40	39.4	-0.6	-1.5	53000	51600	-1400	2.6415094	89
Lower Hazara	Kaghan	Balakot	Hangrai	74.5	70.1	-4.4	5.90604	80663	76225	-4438	-5.501903	71
Lower Hazara	Kaghan	Balakot	Baila sacha	70	69.1	-0.9	1.28571	76325	75400	-925	1.2119227	83
Lower Hazara	Kaghan	Balakot	Hangrai chamber	76	76	0	0	81720	81600	-120	0.1468429	82
Lower Hazara	Kaghan	Ghari	sogdhar	82.15	83	0.85	1.03469	83400	88562	5162	6.1894484	87
Lower Hazara	Avg			55.72444444	55.17777778			61757	61152.77778			83.67
Lower Hazara	Total			501.52	496.6	-4.92	0.98102	555813	550375	-5438	0.9783866	
Lower Hazara	%											
Lower Hazara	Siran	upper siran	Bela Bhogarmang	40.9	41	0.1	0.2445	43960	43627	-333	0.7575068	85
Lower Hazara	Siran	upper siran	Panjool	54	52	-2	-3.7037	58050	56000	-2050	3.5314384	75
Lower Hazara	Siran	upper siran	Baso Mandagucha	43.5	36.05	-7.45	17.1264	46763	46070	-693	1.4819409	71
Lower Hazara	Siran	Lower Siran	Bajna	79	86	7	8.86076	84880	81568	-3312	3.9019793	80
Lower Hazara	Siran	Mansehra	Jabba	68	68	0	0	94600	94400	-200	0.2114165	80
Lower Hazara	Siran	Hillkot	Singalkot	116	81.51	-34.49	29.7328	124700	125000	300	0.2405774	80
Lower Hazara	Avg			70.23	64.09			75492.17	74444.17			78.50
Lower Hazara	Total			421.4	384.56	-36.84	8.74229	452953	446665	-6288	1.3882235	
Lower Hazara	%											
Upper Hazara	Hazara Tribal	Pashto	Bari	80	57.6	-22.4	-28	64000	53424	-10576	-16.525	74
Upper Hazara	Hazara Tribal	Allai	Gantar	93	58	-35	37.6344	99975	56769	-43206	43.216804	67
Upper Hazara	Hazara Tribal	Battagram	Kotgala	155.1	156	0.9	0.58027	166733	166832	99	0.0593764	91

Upper Hazara	Hazara Tribal	Pashto	Musatangi	40	40	0	0	43000	34800	-8200	19.069767	62
Upper Hazara	Avg			92.03	77.90			93427.00	77956.25			73.50
Upper Hazara	Total			368.1	311.6	-56.5	15.3491	373708	311825	-61883	16.559185	
Upper Hazara	%											
Upper Hazara	Thor Ghar	Kandar	Laid	126	126	0	0	135324	131200	-4124	3.0475008	80
Upper Hazara	Thor Ghar	Juddbah	Dour Bala	52.6	55	2.4	4.56274	55900	63322	7422	13.277281	93
Upper Hazara	Thor Ghar	Juddbah	Shadaag	115	116	1	0.86957	124025	124121	96	0.0774037	92
Upper Hazara	Thor Ghar	Juddbah	Dado Serai	80	96	16	20	86000	87200	1200	1.3953488	94
Upper Hazara	Thor Ghar	Kandar	Dilyari Maira	31.5	31.5	0	0	33863	34650	787	2.3240705	88
Upper Hazara	Avg			81.02	84.9			87022.4	88098.6			89.4
Upper Hazara	Total			405.1	424.5	19.4	4.78894	435112	440493	5381	1.2366931	
Upper Hazara	%											
Upper Hazara	Agror Tanawla	Gidarpur	Kehniyan	179	184	5	2.7933	192425	192524	99	0.0514486	84
Upper Hazara	Agror Tanawla	Shergarh	Bejibang	32	32	0	0	34400	31000	-3400	9.8837209	76
Upper Hazara	Agror Tanawla	Agror	Daru Banda	40	41	1	2.5	43500	44200	700	1.6091954	90
Upper Hazara	Agror Tanawla	Oghi	Bandi Sadiq	20	20.18	0.18	0.9	21500	23800	2300	10.697674	92
Upper Hazara	Avg			67.75	69.295			72956.25	72881			85.5
Upper Hazara	Total			271	277.18	6.18	2.28044	291825	291524	-301	-0.103144	
Upper Hazara	%											
Hazara	Avg											
Hazara	Total			2960.52	2879.54	-80.98	2.73533	3208749	3136133	-72616	2.2630626	

Hazara	%											80.73
Watershed	Bunir W/Shed	Daggar	Sarmalang	110	109	-1	0.90909	118250	116765	-1485	-1.255814	81
Watershed	Bunir W/Shed	Daggar	Shapool	173	174	1	0.57803	185975	186303	328	0.1763678	76
Watershed	Bunir W/Shed	Daggar	Jabai Mughal Dara	168	168	0	0	180600	182112	1512	0.8372093	85
Watershed	Bunir W/Shed	Daggar	Sher Dil Banda	150	143	-7	4.66667	161250	158400	-2850	1.7674419	87
Watershed	Bunir W/Shed	Pacha	Khan Tangai	190	186	-4	2.10526	204250	202800	-1450	0.7099143	78
Watershed	Bunir W/Shed	Chamla	Dormai Kandao	85	84.9	-0.1	0.11765	91125	89250	-1875	2.0576132	85
Watershed	Bunir W/Shed	Chamla	Ghund	150	150	0	0	161250	153600	-7650	-4.744186	71
Watershed	Avg			146.5714286	144.9857143			157528.571	155604.2857			80.43
Watershed	Total			1026	1014.9	-11.1	1.08187	1102700	1089230	-13470	1.2215471	
Watershed	%											
Watershed	Kohistan W/Shed	Besham	Kerai	150	151	1	0.66667	161250	158036	-3214	1.9931783	88
Watershed	Kohistan W/Shed	Besham	Sur Banr	91	92	1	1.0989	97825	95200	-2625	2.6833631	65
Watershed	Kohistan W/Shed	Besham	Guna Nagar	200	202.2	2.2	1.1	215000	218461	3461	1.6097674	88
Watershed	Kohistan W/Shed	Besham	Karawat	100	98	-2	-2	107500	103400	-4100	3.8139535	64
Watershed	Kohistan W/Shed	Puran	Mairagai	250	249.2	-0.8	-0.32	268750	269225	475	0.1767442	74
Watershed	Kohistan W/Shed	Puran	Akral	100	98.3	-1.7	-1.7	107500	106150	-1350	-1.255814	79
Watershed	Kohistan W/Shed	Puran	Lochana	65	65	0	0	69875	70460	585	0.8372093	80
Watershed	Kohistan W/Shed	Puran	Akral Lochana	60	60	0	0	64500	64614	114	0.1767442	81
Watershed	Kohistan W/Shed	Kohistan	Munjee (Lahore)	50	50	0	0	53750	52305	-1445	2.6883721	82
Watershed	Avg			118.4444444	118.4111111			127327.778	126427.8889	899.88889	1.0704684	77.89
Watershed	Total			1066	1065.7	-0.3	0.02814	1145950	1137851	-8099	9.6342159	

Watershed	%											
Watershed	Daur W/Shed	Havaleia	Baldher	35	35	0	0	37625	37450	-175	0.4651163	91
Watershed	Daur W/Shed	Havaleia	Baldher	30	30	0	0	32300	32150	-150	0.4643963	89
Watershed	Daur W/Shed	Havaleia	Shorang	63.9	64	0.1	0.15649	68201	68005	-196	0.2873858	90
Watershed	Daur W/Shed	Havaleia	Kailag Shorang	61	60	-1	1.63934	65600	65393	-207	0.3155488	93
Watershed	Daur W/Shed	Havaleia	Tarmuchia	140	141.9	1.9	1.35714	150495	150337	-158	0.1049869	94
Watershed	Daur W/Shed	Havaleia	Chiti Diki	61	62	1	1.63934	65600	65303	-297	0.4527439	74
Watershed	Daur W/Shed	Havaleia	Nara Daki	97	98	1	1.03093	104350	104130	-220	0.2108289	78
Watershed	Daur W/Shed	Havaleia	Shorang	26	26	0	0	27950	27850	-100	0.3577818	80
Watershed	Daur W/Shed	Havaleia	Chando Mira	50	50	0	0	53800	53550	-250	-0.464684	76
Watershed	Daur W/Shed	Abbottabad	Muslimabad	99	100	1	1.0101	106425	106186	-239	0.2245713	67
Watershed	Daur W/Shed	Abbottabad	Burj	143	140	-3	-2.0979	153725	153400	-325	0.2114165	64
Watershed	Daur W/Shed	Abbottabad	Habiba	137	137	0	0	147275	146965	-310	0.2104906	65
Watershed	Daur W/Shed	Abbottabad	Batangi	132	132	0	0	141900	141549	-351	0.2473573	67
Watershed	Avg			82.68	82.76			88865.08	88636.00			79.08
Watershed	Total			1074.9	1075.9	1	0.09303	1155246	1152268	-2978	0.2577806	
Watershed	%											
Watershed	Kunhar W/Shed	Siran	Baffa Kolharay	125.69	125	-0.69	0.54897	134375	134449	74	0.0550698	88
Watershed	Kunhar W/Shed	Siran	Datta	45	45	0	0	48375	48326	-49	-0.101292	87
Watershed	Kunhar W/Shed	Ghari	Karnol	74	75	1	1.35135	80000	78800	-1200	-1.5	83
Watershed	Kunhar W/Shed	Balakot	Tarana balakot	58.46	56.87	-1.59	2.71981	62887	62985	98	0.1558351	88
Watershed	Kunhar W/Shed	Balakot	Pumhara 1	48	50	2	4.16667	52200	51600	-600	1.1494253	81

Watershed	Kunhar W/Shed	Balakot	Chakka Ghanela	74	73.7	-0.3	-	79550	77000	-2550	-	83
Watershed	Kunhar W/Shed	Siran	Narbeerh	94	95	1	1.06383	102092	98800	-3292	-	83
Watershed	Kunhar W/Shed	Ghari	Dalolah	41	42	1	2.43902	45000	43929	-1071	-2.38	80
Watershed	Kunhar W/Shed	Siran	sheila	70	70.2	0.2	0.28571	75250	75400	150	0.1993355	89
Watershed	Kunhar W/Shed	Ghari	Som kagal	54	53	-1	-	58060	57400	-660	-	86
Watershed	Kunhar W/Shed	Balakot	Torri batangi	60	59.1	-0.9	-1.5	64500	63600	-900	-	87
Watershed	Kunhar W/Shed	Siran	Mandian dera	107	105.8	-1.2	-1.1215	115025	114331	-694	-	83
Watershed	Kunhar W/Shed	Ghari	Batsang bela	29	29	0	0	31175	30933	-242	-	88
Watershed	Kunhar W/Shed	Ghari	Bararkot Bela	31	31	0	0	33325	32938	-387	-	87
Watershed	Kunhar W/Shed	Ghari	Sohal	62	62	0	0	66650	65900	-750	-	87
Watershed	Kunhar W/Shed	Balakot	Showal shagi	26.5	26.5	0	0	28488	28538	50	-	81
Watershed	Kunhar W/Shed	Balakot	Banda	44	45	1	2.27273	47300	47200	-100	-	85
Watershed	Kunhar W/Shed	Balakot	Kummi	72.6	74	1.4	1.92837	78099	78301	202	-	84
Watershed	Kunhar W/Shed	Ghari	Darra Syedan	52	52	0	0	56000	55800	-200	-	84
Watershed	Avg			61.49	61.59			66229.00	65591.05			84.95
Watershed	Total			1168.25	1170.17	1.92	0.16435	1258351	1246230	-12121	0.9632448	
Watershed	%											
Watershed	Unhar W/Shed	Shergarh	Doga Miagan	48.07	48	-0.07	-	51675	51531	-144	-	82
Watershed	Unhar W/Shed	Shergarh	Bandi Mera	65	65	0	0	69875	70121	246	-	82
Watershed	Unhar W/Shed	Shergarh	Takhar Mera	70.2	72	1.8	2.5641	75465	77615	2150	-	81
Watershed	Unhar W/Shed	Allai	Nogram	77.23	76.5	-0.73	-	82949	81785	-1164	-	72
Watershed	Unhar	Allai	Chirdan	113	113	0	0	121995	121525	-470	-	84

	W/Shed										0.3852617	
Watershed	Unhar W/Shed	Allai	Batkol	20.3	20	-0.3	1.47783	21803	21776	-27	0.1238362	84
Watershed	Unhar W/Shed	Battgram	Belyane bala	91.63	87	-4.63	5.05293	98502	98801	299	0.3035471	81
Watershed	Unhar W/Shed	Battgram	Chappargram	80.13	83	2.87	3.58168	86139	86108	-31	0.0359883	83
Watershed	Avg											81.125
Watershed	Total			565.56	564.5	-1.06	0.18742	608403	609262	859	0.1411893	649
Watershed	Avg											
Watershed	Total			4900.71	4891.17	-9.54	0.19467	5270650	5234841	-35809	0.6794039	
Watershed	%											80.69
Total	Avg											
Total	Total			15888.73	15793.40	-95.33	0.59999	16615160	16464102	-151058	0.9091577	
Total	%											83.88

9.6 Appendix-E (II): Details of plantations of multipurpose tree species

Region and circle	Forest division	Range/subdivision	Location/ site	Aera claimed (ha)	Aera ha (Mointering Team)	Varienc e	%	Total plants planted (per recored)	Total plants planted (Mointering team)	Varienc e	%	Survival Rate %
South	Peshawar	Peshawar	Misre Banda	198	193.6	-4.4	-2.222	213000	213600	600	0.2817	92
South	Peshawar	Nizampur	Army rang Manki Sharif	125	121.18	-3.82	-3.056	134375	133871	-504	-0.375	89
South	Peshawar	Peshawr	Gari chand	121	119.45	-1.55	-1.281	130075	130277	202	0.1553	91
South	Avg			148.00	144.7433	-3.26	-2.2	159150	159249.33	99.33	0.062	90.67
South	Total			444	434.23	-9.77	-2.2	477450	477748	298	0.06	
South	%											
South	Mardan	Mardan	Mughalka	40	37.73	-2.27	-5.675	43250	49600	6350	14.682	82
South	Mardan	Swabi	Aladher	318	318	0	0	341850	321923	-19927	-5.829	95
South	Avg			179.00	177.865			192550.00	185761.50	6788.50	4.43	88.50
South	Total			358	355.73	-2.27	-0.634	385100	371523	-13577	-3.526	177
South	%											
South	Kohat	Kohat	Sherbanda	30	30	0	0	32050	32400	350	1.092	75
South	Kohat	Teri	Banda Daood Shah	50	68.3	18.3	36.6	53750	54200	450	0.8372	78
South	Kohat	Karak	Umerdin Kola 1	35	36.2	1.2	3.4286	37625	38111	486	1.2917	77
South	Kohat	Karak	Umerdin Kola 2	45	46.05	1.05	2.3333	48375	48717	342	0.707	80
South	Kohat	Thall	Pastu	40	66	26	65	43000	40600	-2400	-5.581	57
South	Kohat	Teri	Edar Banda	20	18	-2	-10	21500	22800	1300	6.0465	95
South	Kohat	Hangu	Raisan	73	72.61	-0.39	-0.534	78475	76853	-1622	-2.067	86
South	Avg			41.86	48.17			44967.86	44811.57	-156.29	0.33	78.29
South	Total			293.00	337.16	44.16	15.07	314775.00	313681.00	-1094	-0.348	548
South	%											
South	Bannu	Bannu	Patal Khel	170	181	11	6.4706	182750	183200	450	0.2462	77
South	Avg			170.00	181			182750.00	183200.00	450.00	0.25	77.00
South	Total			170	181	11	6.4706	182750.00	183200.00	450	0.2462	77
South	%											

South	Avg									-1598.86	1.267	
South	Total			1265.00	1308.12	43.12	3.4087	1360075	1346152.00	-13923	-1E+06	
South	%											83.61
Malakand	Malakand	Dargi	Selai patai	112	106	-6	-5.357	120400	119400	-1000	-0.831	84
Malakand	Malakand	Batkhelda	Baeawal	120	122	2	1.6667	129000	128800	-200	-0.155	80
Malakand	Avg			116.00	114			124700.00	124100.00	-600.00	-0.49	82
Malakand	Total			232	228	-4	-1.724	249400	248200	-1200	-0.481	
Malakand	%											
Malakand	Buner	Daggar	Bilal Nagar	123	125	2	1.626	132225	131515	-710	-0.537	81
Malakand	Buner	Chamla	Soora Ormal	120	124.5	4.5	3.75	129000	128307	-693	-0.537	84
Malakand	Avg			121.5	124.75			130612.5	129911	-701.5	-0.537	82.5
Malakand	Total			243	249.5	6.5	2.6749	261225	259822	-1403		
Malakand	%											
Malakand	Alpuri	Alpuri	Bada Gata Bilay Baba (Tangoo)	67	63	-4	-5.97	72025	67773	-4252	-5.904	68
Malakand	Alpuri	Alpuri	Faiz Abad Dando (Dherai)	25	26.5	1.5	6	26800	27723	923	3.444	77
Malakand	Alpuri	Karora	Laodar	50	55	5	10	53660	54365	705	1.3138	86
Malakand	Avg			47.33	48.17			50828.33	49953.67	-874.67	-0.38	77.00
Malakand	Total			142	144.5	2.5	1.7606	152485	149861	-2624		
Malakand	%											
Malakand	Kalam	Behrain South	Kas Ragas Kota	40	41	1	2.5	43000	46200	3200	7.44	80
Malakand	Avg			40	41			43000	46200			80
Malakand	Total			40	41	1	2.5	43000	46200	3200	7.4419	
Malakand	%											
Malakand	Swat	Matta	Mandoor+baidar	214	212	-2	-0.935	223600	224800	1200	0.5367	85
Malakand	Swat	Mingora	Karr	45	43.68	-1.32	-2.933	48375	49295	920	1.9018	81
Malakand	Swat	Mingora	Talegarm	52	51.7	-0.3	-0.577	55900	55400	-500	-0.894	94
Malakand	Swat	Kabal	Sewa gali	102	64.38	-37.62	-36.88	120000	109800	-10200	-8.5	85
Malakand	Avg			103.25	92.94			111968.75	109823.75			86.25
Malakand	Total			413	371.76	-41.24	-9.985	447875	439295	-8580	-1.916	
Malakand	%											
Malakand	Dir Kohistan	Patrak	Barai Bar Kalay	50	42	-8	-16	53750	49200	-4550	-8.465	76
Malakand	Dir Kohistan	Shirengal	Sharmai	101	100.29	-0.71	-0.703	108575	108272	-303	-0.279	83

Malakand	Avg			75.50	71.15			81162.50	78736.00			79.50
Malakand	Total			151.00	142.29	-8.71	-5.77	162325.00	157472.00	-4853.00	-2.99	
Malakand	%											
Malakand	Upper Dir	Dir	Kharkanai "A"	80	78.5	-1.5	-1.875	86000	88000	2000	2.3256	95
Malakand	Upper Dir	Dir	Kharkanai "B"	40	40.7	0.7	1.75	43000	44200	1200	2.7907	82.3
Malakand	Upper Dir	Dir	Bandai	80	82	2	2.5	86000	81846	-4154	-4.83	88.8
Malakand	Upper Dir	Dir	Lil Band "A"	60	59	-1	-1.667	64500	62307	-2193	-3.4	93
Malakand	Upper Dir	Warai	Chapar	62	64.3	2.3	3.7097	66650	69701	3051	4.5776	90
Malakand	Avg			64.4	64.9			69230	69210.8			89.82
Malakand	Total			322	324.5	2.5	0.7764	346150	346054	-96	-0.028	
Malakand	%											
Malakand	Lower Dir	Timargara	Deolay Talash	125	123	-2	-1.6	134375	134629	254	0.189	84
Malakand	Lower Dir	Chakdara	Gishkot osakai	61	67	6	9.8361	65575	65200	-375	-0.572	80
Malakand	Lower Dir	Chakdara	Sia (Palala loye Navo)	55	55	0	0	59125	58870	-255	-0.431	89
Malakand	Lower Dir	Jandool	Shar Banai	183	171	-12	-6.557	196000	196273	273	0.1393	87
Malakand	Avg			106	104			113768.8	113743			85.00
Malakand	Total			424	416	-8	-1.887	455075	454972	-103	-0.023	
Malakand	%											
Malakand	Chitral	Booni	Avi Lasht	16	9.8	-6.2	-38.75	17200	17200	0	0	88
Malakand	Chitral	Booni	Qutaan Lasht Dizk	46	40.84	-5.16	-11.22	49450	49400	-50	-0.101	87
Malakand	Chitral	Booni	Qutaan Lasht	69	69.74	0.74	1.0725	74175	74276	101	0.1362	92
Malakand	Chitral	Chitral	Maskoor Nala II	12	10	-2	-16.67	12900	13000	100	0.7752	88
Malakand	Avg			35.75	32.595			38431.25	38469.00			88.75
Malakand	Total			143	130.38	-12.62	-8.825	153725	153876	151	0.0982	
Malakand	%											
Malakand	Avg											
Malakand	Total			2110.0	2047.9	-62.1	-2.942	2271260	2255752	-15508	-0.683	
Malakand	%											83.42
Lower Hazara	Haripur	Satora	Tarari Thouha	130	139	9	6.9231	143000	134000	-9000	-6.294	85
Lower Hazara	Haripur	Maknial	Karrar	80	101	21	26.25	96750	84800	-11950	-12.35	90
Lower Hazara	Haripur	Haripur	Bandi Labyal II	86	86	0	0	92450	91000	-1450	-1.568	91
Lower Hazara	Haripur	Khanpur	Langrial	60	51	-9	-15	68000	54800	-13200	-19.41	72
Lower Hazara	Haripur	Ghazi	Bela	230	231	1	0.4348	247250	247600	350	0.1416	89

Lower Hazara	Avg			117.20	121.6			129490.00	122440.00			85.40
Lower Hazara	Total			586	608	22	3.7543	647450	612200	-35250	-5.444	
Lower Hazara	%											
Lower Hazara	Gallies	Dongagali	Bathnara	52	55	3	5.7692	56000	56200	200	0.3571	94
Lower Hazara	Gallies	Bagnotar	Justar+Cham	20	18	-2	-10	21500	21800	300	1.3953	73
Lower Hazara	Gallies	Berangali	Jahfer	95	97.5	2.5	2.6316	105000	105688	688	0.6552	94
Lower Hazara	Avg			55.67	56.83			60833.33	60833.33			87
Lower Hazara	Total			167	170.5	3.5	2.0958	182500	183688	1188	0.651	
Lower Hazara	%											
Lower Hazara	Kaghan	Kaghan	Teer Sukhria	66	66.2	0.2	0.303	70950	70800	-150	-0.211	86
Lower Hazara	Avg			66	66.2			70950	70800			86.00
Lower Hazara	Total			66	66.2	0.2	0.303	70950	70800	-150	-0.211	
Lower Hazara	%											
Lower Hazara	Siran	Mansehra	Cher Sandasar	20	18.8	-1.2	-6	21000	21400	400	1.9048	81
Lower Hazara	Siran	Mansehra	Jabba Soora	20	12.9	-7.1	-35.5	22000	13932	-8068	-36.67	91
Lower Hazara	Siran	Upper Siran	Purana Bhogarmang	28	27.71	-0.29	-1.036	29000	29876	876	3.0207	88
Lower Hazara	Siran	Mansehra	Massar RF 12 (III)	34	28	-6	-17.65	37200	36600	-600	-1.613	88
Lower Hazara	Siran	Lower Siran	Shnai Bala Bagh	23	23.8	0.8	3.4783	24000	24725	725	3.0208	83
Lower Hazara	Avg			25.00	22.24			26640.00	25306.60			86.20
Lower Hazara	Total			125	111.21	-13.79	-11.03	133200	126533	-6667	-5.005	
Lower Hazara	%											

Hazara												
Upper Hazara	Hazara Tribal	Pashto	Tandol 1	45	42.6	-2.4	-5.333	48375	45783	-2592	-5.358	90
Upper Hazara	Hazara Tribal	Allai	Chalera Ali Sheria	97	95.87	-1.13	-1.165	105500	104522	-978	-0.927	94
Upper Hazara	Hazara Tribal	Hillan	Kadlo	45	12.97	-32.03	-71.18	48375	48522	147	0.3039	93
Upper Hazara	Hazara Tribal	Battgram	Soba Dari Naryala	117	104.78	-12.22	-10.44	125800	125725	-75	-0.06	94
Upper Hazara	Avg			76.00	64.06			82012.50	81138.00			92.75
Upper Hazara	Total			304	256.22	-47.78	-15.72	328050	324552	-3498	-1.066	
Upper Hazara	%											
Upper Hazara	Thor Ghar	Kandar	Laid	200	202.12	2.12	1.06	215000	215000	0	0	94
Upper Hazara	Avg			200	202.12			215000	215000			94
Upper Hazara	Total			200	202.12	2.12	1.06	215000	215000	0	0	
Upper Hazara	%											
Upper Hazara	Agror Tanawla	Oghi	Londi Bangash	25	26.201	1.201	4.804	26875	26923	48	0.1786	95
Upper Hazara	Agror Tanawla	Gidarpur	Landai Khawajgan	100	101.2	1.2	1.2	110500	107400	-3100	-2.805	94
Upper Hazara	Agror Tanawla	Shergarh	Shochni	40	42.2	2.2	5.5	43500	43200	-300	-0.69	95
Upper Hazara	Agror Tanawla	Shergarh	Guldhar	22	22.4	0.4	1.8182	24000	23800	-200	-0.833	90
Upper Hazara	Agror Tanawla	Gidarpur	Char Bankotti	86	78.32	-7.68	-8.93	96000	89200	-6800	-7.083	84
Upper Hazara	Avg			54.6	54.0642			60175	58104.6			91.6
Upper Hazara	Total			273	270.321	-2.679	-0.981	300875	290523	-10352	-3.441	
Upper Hazara	%											
Hazara	Avg											
Hazara	Total			1721	1684.571	-36.429	-2.117	1878025	1823296	-54729	-2.914	

Hazara	%											88.99
Watershed	Bunir W/Shed	Pacha	Malak pur	50	56	6	12	53750	58600	4850	9.0233	90
Watershed	Bunir W/Shed	Daggar	Ghazi	220	206	-14	-6.364	236500	237000	500	0.2114	91
Watershed	Bunir W/Shed	Daggar	Marado & Mekho khpa	116	128	12	10.345	124700	121800	-2900	-2.326	91
Watershed	Bunir W/Shed	Daggar	Daggar	130	127.3	-2.7	-2.077	139750	136600	-3150	-2.254	90
Watershed	Avg			129	129.325			138675	138500			90.50
Watershed	Total			516	517.3	1.3	0.2519	554700	554000	-700	-0.126	
Watershed	%											
Watershed	Kohistan W/Shed	Besham	Kerai	85	85.4	0.4	0.4706	91375	88269	-3106	-3.399	78.5
Watershed	Kohistan W/Shed	Besham	Kikor	90	92	2	2.2222	96750	95538	-1212	-1.253	79
Watershed	Kohistan W/Shed	Puran	Machai	165	169	4	2.4242	177375	182769	5394	3.041	82
Watershed	Avg			113.33	115.47			121833.33	122192.00	358.67	-0.54	79.83
Watershed	Total			340	346.4	6.4	1.8824	365500	366576	1076	-1.611	
Watershed	%											
Watershed	Daur W/Shed	Sherwan	Sobangali	67	65.5	-1.5	-2.239	72025	71568	-457	-0.635	75
Watershed	Daur W/Shed	Abbotabad	Dhanger	65	65.1	0.1	0.1538	69875	67561	-2314	-3.312	61
Watershed	Daur W/Shed	Havelian	Naloka Narwara	105	105	0	0	106560	106212	-348	-0.327	91
Watershed	Daur W/Shed	Havelian	Chatti Dhaki	79	80.48	1.48	1.8734	84925	85320	395	0.4651	87
Watershed	Daur W/Shed	Havelian	Harnra Narian	42	42.53	0.53	1.2619	44100	44940	840	1.9048	80
Watershed	Avg			71.60	71.72			75497.00	75120.20			78.80
Watershed	Total			358	358.61	0.61	0.1704	377485	375601	-1884	-0.499	
Watershed	%											
Watershed	Kunhar W/Shed	Balakot	Pandair Pitica	95	109	14	14.737	102150	99948	-2202	-2.156	84
Watershed	Kunhar W/Shed	Siran	Blag Bala	100	101	1	1	107500	107000	-500	-0.465	86
Watershed	Kunhar W/Shed	Siran	Thathi Ahmed Khan	57	68	11	19.298	61275	61453	178	0.2905	84

Watershed	Kunhar W/Shed	Garhi Habibullah	Garhi Habibullah	31	30.8	-0.2	-0.645	33325	33519	194	0.5821	87
Watershed	Avg			70.75	77.20			76062.50	75480.00			85.25
Watershed	Total			283	308.8	25.8	9.1166	304250	301920	-2330	-0.766	
Watershed	%											
Watershed	Unhar W/Shed	Shergarh	Fujdara	263.4	265.6	2.2	0.8352	275284	242049	-33235	-12.07	79
Watershed	Unhar W/Shed	Shergarh	Surni	141	143.72	2.72	1.9291	138000	142390	4390	3.1812	89
Watershed	Unhar W/Shed	Shergarh	Deri Namshera	134	113	-21	-15.67	144050	135400	-8650	-6.005	67
Watershed	Unhar W/Shed	Battgram	Banara	100	101.6	1.6	1.6	107500	104000	-3500	-3.256	74
Watershed	Unhar W/Shed	Allai	Lundi Cheran	58	58.2	0.2	0.3448	72100	60600	-11500	-15.95	97
Watershed	Unhar W/Shed	Shergarh	Sumbalboot	43	51.22	8.22	19.116	46875	50427	3552	7.5776	80
Watershed	Avg											81
Watershed	Total			739.4	733.34	-6.06	-0.82	783809	734866	-48943	-6.244	486
Watershed	%											
Watershed	Avg											
Watershed	Total			2236.4	2264.45	28.05	1.2542	2385744	2332963	-52781	-2.212	
Watershed	%											83.08
Total	Avg											
Total	Total			7332.40	7305.07	-27.329	-0.373	7895104	7758163	-136941	-1.735	
Total	%											84.78

9.7 Appendix-F: Details of Woodlots

Region	Foest division	Area	Total plants planted (per recorded)	Total plants planted (Mointering team)	Variance	%	Survival Rate %
South	Peshawar	18.74	20000	19989	-11	-0.055	20
South	Peshawar	7	10000	9920	-80	-0.8	87
South	Peshawar	21	15000	14980	-20	0.13333333	60
South	Peshawar	75	80000	79792	-208	-0.26	84
South	Avg		31250	31170.25	79.75	0.31208333	62.75
South	Mardan	41	44330	44280	-50	0.11279044	82
South	Mardan	23	2500	2453	-47	-1.88	72
South	Mardan	7.4	8000	7893	-107	-1.3375	75
South	Mardan	20	23300	23200	-100	0.42918455	90
South	Mardan	20	22000	22000	0	0	85
South	Mardan	3.4	3650	3627	-23	0.63013699	53
South	Mardan	8	9030	9000	-30	0.33222591	69
South	Mardan	5.5	6000	5900	-100	1.66666667	59
South	Mardan	70	85000	85000	0	0	66
South	Avg		22645.556	22594.778	-50.778	-0.710	72.333333
South	Kohat	11.6	12000	11970	-30	-0.25	68
South	Kohat	11.6	12000	11970	-30	-0.25	78
South	Kohat	18.6	20000	20010	10	0.05	100
South	Kohat	18.6	20000	20047	47	0.235	78
South	Kohat	10.6	11500	11440	-60	0.52173913	90
South	Kohat	17.6	19000	19556	556	2.92631579	92
South	Kohat	17	18275	13081	-5194	28.4213406	86
South	Kohat	17	18275	17000	-1275	6.97674419	78
South	Kohat	6	6250	6150	-100	-1.6	91
South	Kohat	9	10000	9045	-955	-9.55	84
South	Kohat	17.6	19000	19067	67	0.35263158	52
South	Avg		15118.18	14485.09	-633.09	-4.00	81.55
South	Bannu	18	19350	19400	50	0.25839793	40
South	Bannu	26	27950	28000	50	0.17889088	35
South	Bannu	6	6450	6500	50	0.7751938	99
South	Bannu	44	47300	47483	183	0.38689218	95
South	Avg		25262.5	25345.75	83.25	0.3998437	67.25
South	D.I.Khan	200	215000	214986	-14	0.00651163	46
South	D.I.K	92.5	100000	99373	-627	-0.627	75

	Avg		157500	157179.5	-320.5	-0.3168	60.5
		861.74	50355.25	50155.07	-168.27	-0.99	68.88
Malakand	Malakand		23000	23108	108	0.46956522	49
Malakand	Malakand		23000	23002	2	0.00869565	52
Malakand	Malakand		20000	19980	-20	-0.1	60
Malakand	Malakand		20000	19980	-20	-0.1	65
Malakand	Malakand		20000	19980	-20	-0.1	60
Malakand	Malakand	7	30000	29800	-200	0.66666667	70
Malakand	Avg		22666.67	22641.67	-25.00	-0.08	59.33
Malakand	Bunir	14.7	15800	15000	-800	5.06329114	30
Malakand	Bunir	5.5	6000	5980	-20	0.33333333	73
Malakand	Bunir	2	2150	2150	0	0	80
Malakand	Bunir	4	4300	4325	25	0.58139535	90
Malakand	Bunir	2	2150	2150	0	0	85
Malakand	Bunir	3	3250	3225	-25	0.76923077	50
Malakand	Bunir	8	8600	9000	400	4.65116279	90
Malakand	Avg		6035.71	5975.71	-60.00	-0.13	71.14
Malakand	Alpuri	7.7	8280	8277	-3	0.03623188	90
Malakand	Alpuri	9	9675	9600	-75	-0.7751938	82
Malakand	Alpuri	5.45	5860	5858	-2	0.03412969	76
Malakand	Alpuri	1	4300	4300	0	0	95
Malakand	Alpuri	2	8600	8765	165	1.91860465	97
Malakand	Alpuri	2	8600	8450	-150	1.74418605	95
Malakand	Alpuri	1	4300	4300	0	0	90
Malakand	Alpuri	37	39775	38500	-1275	3.20553111	72
Malakand	Alpuri	19	22000	21900	-100	0.45454545	90
Malakand	Alpuri	48	51600	51600	0	0	88
Malakand	Avg		16299.00	16155.00	-144.00	-0.43	87.50
Malakand	Kalam	61	65575	64975	-600	0.91498284	71
Malakand	Kalam	37.2	40000	40200	200	0.5	65
Malakand	Avg		52787.5	52587.5	-200	-0.21	68.00
Malakand	Swat	13	14000	14192	192	1.37142857	77
Malakand	Swat	18	18000	18900	900	5	77
Malakand	Swat	3	3000	3100	100	3.33333333	81
Malakand	Swat	3	3000	2800	-200	6.66666667	79
Malakand	Swat	18	18700	18900	200	1.06951872	78
Malakand	Swat	3	3000	2900	-100	3.33333333	85
Malakand	Avg		9950	10132	182	0.129	79.5
Malakand	Dir Kohistan	1	1075	1075	0	0	70
Malakand	Avg		1075	1075	0	0	70
Malakand	Upper Dir	30	32250	32900	650	2.01550388	84
Malakand	Avg		32250	32900	650	2.02	84

Malakand	Low Dir	20	24500	21600	-2900	11.8367347	91
Malakand	Low Dir	10	10750	12400	1650	15.3488372	64
Malakand	Low Dir	17	12500	18133	5633	45.064	36
Malakand	Low Dir	2.5	2500	2800	300	12	96
Malakand	Low Dir	12	12900	12800	-100	-0.7751938	52
Malakand	Lower Dir	47.8	51480	50523	-957	1.85897436	89
Malakand	Lower Dir	7.74	8000	8708	708	8.85	93
Malakand	Lower Dir	26	28000	29800	1800	6.42857143	91
Malakand	Avg		18828.75	19595.5	766.75	9.15	76.5
Malakand	Chitral	2	2150	2600	450	20.9302326	90
Malakand	Chitral	5	5375	5375	0	0	70
Malakand	Chitral	5	5375	5600	225	4.18604651	80
Malakand	Chitral	2	2150	2150	0	0	95
Malakand	Chitral	1	1075	1075	0	0	90
Malakand	Chitral	9	9675	9695	20	0.20671835	90
Malakand	Chitral	2	2150	2000	-150	6.97674419	90
Malakand	Chitral	4	4300	4300	0	0	75
Malakand	Chitral	10	10750	10750	0	0	60
Malakand	Chitral	3	3225	3300	75	2.3255814	85
Malakand	Chitral	1	1075	1075	0	0	40
Malakand	Chitral	3	3225	3300	75	2.3255814	75
Malakand	Chitral	4	4300	4200	-100	-2.3255814	40
Malakand	Chitral	1	1075	1075	0	0	50
Malakand	Chitral	1	1075	1075	0	0	40
Malakand	Chitral	1	1075	1075	0	0	60
Malakand	Chitral	1	1075	1075	0	0	65
Malakand	Chitral	4	4300	4400	100	2.3255814	90
Malakand	Avg		3523.61	3562.22	38.61	1.28	71.39
Malakand		567.59	18157.36	18291.62	134.26	1.30	74.15
Lower Hazara	Haripur	11	20000	20088	88	0.44	90
Lower Hazara	Haripur	28	30380	31800	1420	4.67412772	97
Lower Hazara	Haripur	6.5	7300	7638	338	4.63013699	66
Lower Hazara	Haripur	50	56300	56800	500	0.88809947	78
Lower Hazara	Avg		28495	29081.5	586.5	2.66	82.75
Lower Hazara	Kaghan	23	24725	25108	383	1.54903943	78
Lower Hazara	Avg		24725	25108	383	1.55	78
Lower Hazara	Siran	16	17600	20400	2800	15.9090909	82
Lower Hazara	Siran	8	9500	7800	-1700	17.8947368	57
Lower Hazara	Siran	23	28000	26067	-1933	6.90357143	94
Lower Hazara	Siran	10	11000	10600	-400	3.63636364	83
Lower Hazara	Avg		16525	16216.75	-308.25	-3.13	79
Upper Hazara	Hazara Tribe	12	12900	12600	-300	-2.3255814	25
Upper Hazara	Hazara Tribe	14	16200	13000	-3200	19.7530864	91

Upper Hazara	Hazara Tribe	10	9760	8800	-960	9.83606557	91
Upper Hazara	Hazara Tribe	30	32250	30800	-1450	4.49612403	88
Upper Hazara	Hazara Tribe	20	21500	20400	-1100	5.11627907	79
Upper Hazara	Hazara Tribe	10	10750	12400	1650	15.3488372	39
Upper Hazara	Hazara Tribe	10	10750	11000	250	2.3255814	24
Upper Hazara	Hazara Tribe	12	12900	12200	-700	5.42635659	21
Upper Hazara	Avg		15876.25	15150	-726.25	3.65988431	57.25
Upper Hazara	Thor Ghar	40	42978	44800	1822	4.23937829	96
Upper Hazara	Avg		42978	44800	1822	4.23937829	96
Upper Hazara	Agror Tanawla	11	11825	16317	4492	37.987315	92
Upper Hazara	Agror Tanawla	16	17200	24200	7000	40.6976744	92
Upper Hazara	Agror Tanawla	8	10000	10200	200	2	89
Upper Hazara	Agror Tanawla	40	43500	38200	-5300	-12.183908	92
Upper Hazara	Agror Tanawla	18	19350	25400	6050	31.2661499	99
Upper Hazara	Agror Tanawla	7	7525	14700	7175	95.3488372	95
Upper Hazara	Agror Tanawla	16	17200	18200	1000	5.81395349	95
Upper Hazara	Agror Tanawla	15	18000	8438	-9562	53.1222222	90
Upper Hazara	Agror Tanawla	10	12000	11500	-500	4.16666667	90
Upper Hazara	Agror Tanawla	20	21500	23600	2100	9.76744186	91
Upper Hazara	Agror Tanawla	15	16500	16313	-187	1.13333333	96
Upper Hazara	Agror Tanawla	20	21500	26000	4500	20.9302326	88
Upper Hazara	Agror Tanawla	10	12000	15400	3400	28.3333333	88
Upper Hazara	Avg		17546.1538	19112.92308	1566.769231	15.5029852	92.08
Upper Hazara	Avg	539.5	24357.57	24911.53	553.96	2.86	80.85
Watershed	Bunir W/Shed	7	7500	7467	-33	-0.44	75
Watershed	Bunir W/Shed	6	6450	6430	-20	0.31007752	90
Watershed	Bunir W/Shed	5	5375	5380	5	0.09302326	80
Watershed	Bunir W/Shed	3	3225	3225	0	0	90
Watershed	Bunir W/Shed	12	12900	12800	-100	-0.7751938	68
Watershed	Bunir W/Shed	6	6450	6500	50	0.7751938	90
Watershed	Bunir W/Shed	11.5	12360	12290	-70	0.56634304	72
Watershed	Bunir W/Shed	6	6450	6450	0	0	70
Watershed	Bunir W/Shed	6	6450	6430	-20	0.31007752	60
Watershed	Bunir W/Shed	6	6450	6450	0	0	70
Watershed	Bunir W/Shed	6	6450	6470	20	0.31007752	90
Watershed	Bunir W/Shed	14.6	15695	15700	5	0.03185728	88
Watershed	Bunir W/Shed	21.3	22900	23000	100	0.43668122	93
Watershed	Bunir W/Shed	18.3	19675	19670	-5	0.02541296	90
Watershed	Bunir W/Shed	29.7	31930	31950	20	0.06263702	87

Watershed	Bunir W/Shed	9.3	10000	9990	-10	-0.1	82
Watershed	Bunir W/Shed	8.8	9475	9460	-15	0.15831135	90
Watershed	Bunir W/Shed	1.9	2050	2042	-8	-0.3902439	85
Watershed	Bunir W/Shed	3.7	3980	3977	-3	0.07537688	73
Watershed	Bunir W/Shed	2.1	2260	2257	-3	0.13274336	69
Watershed	Bunir W/Shed	9.3	10000	10010	10	0.1	90
Watershed	Avg		9905.95	9902.29	-3.67	-0.07	81.05
Watershed	Besham W/Shed	10	10750	10750	0	0	75
Watershed	Besham W/Shed	10	10750	10685	-65	0.60465116	79
Watershed	Besham W/Shed	6	6450	6500	50	0.7751938	76
Watershed	Besham W/Shed	12	12900	12935	35	0.27131783	55
Watershed	Besham W/Shed	15	16125	16190	65	0.40310078	70
Watershed	Besham W/Shed	2	2150	2150	0	0	80
Watershed	Avg		9854.17	9868.33	14.17	0.14	72.50
Watershed	Daur W/Shed	5.5	5913	5920	7	0.11838322	86
Watershed	Daur W/Shed	4.5	4838	4824	-14	0.28937578	83
Watershed	Daur W/Shed	7	7525	7539	14	0.18604651	82
Watershed	Daur W/Shed	5	5375	5384	9	0.16744186	82
Watershed	Daur W/Shed	4	4300	4325	25	0.58139535	80
Watershed	Daur W/Shed	10	11000	11976	976	8.87272727	83
Watershed	Daur W/Shed	22	23650	23875	225	0.95137421	80
Watershed	Daur W/Shed	16	17200	17322	122	0.70930233	78
Watershed	Avg		9975.13	10145.63	170.50	1.41	81.75
Watershed	Kunhar W/Shed	7	7525	7700	175	2.3255814	88
Watershed	Kunhar W/Shed	7	7500	7525	25	0.33333333	87
Watershed	Kunhar W/Shed	14	15000	11600	-3400	-22.666666	47
Watershed	Kunhar W/Shed	3	3200	3450	250	7.8125	86
Watershed	Kunhar W/Shed	22	24000	23800	-200	-0.83333333	93
Watershed	Kunhar W/Shed	13	14000	13557	-443	-3.1642857	88
Watershed	Kunhar W/Shed	9	9700	9540	-160	-1.6494845	70
Watershed	Kunhar W/Shed	13	14000	14114	114	0.81428571	95
Watershed	Kunhar W/Shed	15	16125	16286	161	0.99844961	81
Watershed	Kunhar W/Shed	11	11825	11917	92	0.77801268	86
Watershed	Avg		12287.5	11948.9	-338.6	-1.53	82.1
Watershed	Unhar W/Shed	15	22000	22286	286	1.3	89
Watershed	Unhar W/Shed	12	12900	15400	2500	19.379845	77
Watershed	Unhar W/Shed	40	43172	45800	2628	6.08727879	60
Watershed	Unhar W/Shed	27	29025	29077	52	0.1791559	73
Watershed	Unhar W/Shed	20.9	22554	22572	18	0.07980846	86
Watershed	Unhar W/Shed	23	24700	25108	408	1.65182186	90
Watershed	Unhar W/Shed	17.7	19060	20453	1393	7.30849948	87
Watershed	Avg		24773.00	25813.71	1040.71	5.14	80.29
Watershed		592.1	13359.15	13535.77	176.62	1.02	79.54
Total			26557.33	26723.50	174.14	1.05	75.85

9.8 Appendix-G: Details of reclamation of saline and water logged areas

Region	Foest division	Range/subdivisi on	Location/ site	Aera claimed (ha)	Aera ha (Mointeri ng Team)	Varienc e	%	Total plants planted (per recored)	Total plants planted (Mointeri ng team)	Varienc e	%	Surviv al Rate %	Avg Spacin g (ft)
South	Peshawar	Nowshera	Azakhel paya	26	25.87	-0.13	-0.5	28000	28050	50	0.1786	97	5
South	Peshawar	Peshawar	Misre Banda	29	28.77	-0.23	0.79	82300	79957	-2343	2.847	51	6.2
South	Avg			27.5	27.32			55150	54003.5	-1146.5	1.334	74	5.6
South	Total			55	54.64	-0.36	0.65	110300	108007	-2293	2.668		
South	%												
South	Mardan	Rustam	Batkor	120	119	-1	0.83	129000	131400	2400	1.8605	93	4.78
	Avg				119	-1	0.83	129000	131400	2400	1.8605	93	4.78
	Total			120	119	-1	0.83	129000	131400	2400	1.8605	93	4.78
	%												
South	Kohat	Kohat	Koteri	25	25	0	0	107500	107500	0	0	85	5
South	Kohat	Kohat	Billi Tang	25	10	-15	-60	10750	10664	-86	-0.8	88	10.07
South	Kohat	Teri	Teri Dargah	80	80	0	0	86000	86200	200	0.2326	78	4.9
South	Avg			43.333333	38.333333	-5	-20	68083.3333	68121.333	38	0.0558	83.667	6.6567
South	Total			130	115	-15	11.5	204250	204364	114	0.0558		
South	%												
South	Bannu	Bannu	Shabaz Azmat khel	52	49	-3	5.77	211000	211092	92	0.0436	98	5.1
South	Bannu	Laki marwat	Sari Gambila	21	21	0	0	91375	91350	-25	0.027	94	4.9
South	Bannu	Laki marwat	Daratang	95	92	-3	3.16	102125	102036	-89	0.087	96	4.9
South	Bannu	Laki marwat	Gambila	80	80	0	0	86100	86000	-100	0.116	95	5
South	Bannu	Laki marwat	Kotka Hakim kha	85	84	-1	-	91375	91350	-25	-	93	4.9

			n				1.18				0.027		
South	Bannu	Lakki	Gambela	35	34.75	-0.25	0.71	37625	39667	2042	5.427 2	53	9.7
South	Bannu	Laki marwat	Wanda Mir Alam	450	448	-2	0.44	483750	483800	50	0.010 3	85	4.9
South	Bannu	Laki marwat	Mir Alam Minjiwala	50	72.76	22.76	45.5 2	78307	78217	-90	- 0.115	85	5
South	Avg			108.5	110.19			147707.13	147939.00			87.38	5.55
South	Total			868	881.51	13.51	1.55 6	1181657	1183512	1855	0.157		
South	%												
South	D.I.Khan	Paharpur	Mitha pur	18	18	0	0	19350	19463	113	0.584	46	4.9
South	D.I.Khan	Paharpur	Hote village	600	597	-3	-0.5	645000	645000	0	0	93	5
South	D.I.Khan	D.I.Khan	Ghafari-banda	192	191.6	-0.4	0.21	206400	206387	-13	- 0.006	93	4.9
South	D.I.Khan	D.I.Khan	Torrek khan	25	24.8	-0.2	-0.8	26875	26867	-8	-0.03	95	4.9
South	D.I.Khan	D.I.Khan	Yasin drazinda	25	24.96	-0.04	0.16	26875	26979	104	0.387	72	4.9
South	D.I.Khan	D.I.Khan	Dhapchabak Resume land	100	98.8	-1.2	-1.2	107500	107563	63	0.058 6	80	5
South	D.I.Khan	D.I.Khan	Dame phase aera	220	219.84	-0.16	0.07	236500	236539	39	0.016 5	88	5
South	D.I.Khan	D.I.Khan	Taimur Sha drahan	45	44	-1	2.22	48375	48384	9	0.018 6	73	4.9
South	D.I.Khan	D.I.Khan	Inyatullah drahm	80	80	0	0	86000	86000	0	0	87	5
South	D.I.K	Prowa	Disty No.20 Tail 1& 2	60	59.5	-0.5	0.83	64500	65438	938	1.454 3	89	9.9
South	D.I.Khan	D.I.Khan	Alamgir Aria	95	84.88	-10.12	10.7	91375	91372	-3	- 0.003	78	4.9
South	Avg			132.72727	131.22			141704.55	141817.45			81.27	5.39
South	Total			1460	1443.38	-16.62	- 1.14	1558750	1559992	1242	0.079 7		
South	%												
South	Avg												
South	Total			2633	2613.53	-19.47	- 0.74	3183957	3187275	3318	0.104 2		
South	%											83.4	5.586

9.9 Appendix-H: Details of roadside and canal side plantations

Region	Foest division	Range/subdivision	Location/ site	Aera (ha)	Total plants planted (per recored)	Total plants planted (Mointering team)	Variance	%	Survival Rate %
South	Peshawar	Peshawar	Motory way	38	41524	41234	-290	-0.6983913	74
South	Mardan	Katlang	Rama	17	18275	18275	0	0	93
South	Mardan	Mardan	Rashakai Ring Road	35	37625	38088	463	1.23056478	83
South	Kohat	Kohat	Pindi road	14	15050	15000	-50	-0.3322259	85
South	Bannu	Laki marwart	D.I khan road	35	37625	37676	51	0.13554817	89
South	D.I.Khan	Paharpur	Spur No.18	10.4	11287	11340	53	0.46956676	94
South	D.I.Khan	Paharpur	Chashma Road kot	15	16125	16071	-54	-0.3348837	86
South	D.I.Khan	Paharpur	CRBC Matraha	20	21500	21658	158	0.73488372	70
South	D.I.Khan	Paharpur	Kottla Mianer	32.5	34937	34931	-6	-0.0171738	92
South	D.I.Khan	Paharpur	CRBC Tir Garh	24	25800	25806	6	0.02325581	93
South	D.I.Khan	Paharpur	CRBC Bilot beat linear	56	60200	60308	108	0.17940199	86
South	D.I.Khan	Paharpur	Chashma Road Bilot beat	29.5	31712	31693	-19	-0.0599142	89
South	D.I.Khan	Paharpur	Chashma Road sigrra beat	8.5	9137	8925	-212	-2.3202364	96
South	D.I.Khan	D.I.Khan	C & W land Bahker	150	161250	161250	0	0	81
South				38.43	37289.07	37303.93			87.44
South				484.9	522047	522255	208	0.03984316	787
South									87.21
Malakand	Malakand	Dargai	Malakand 3 Canal Side	18	19350	19260	-90	-0.4651163	91
Malakand	Buner	Daggar	Bhatai to Kalail Road	15	23750	23750	0	0	71
Malakand	Alpuri	Alpuri	Shangla Top to Alpuri Road	25	26875	26700	-175	-0.6511628	70
Malakand	Kalam	Behrain South	Kas Qandeel Road	10	15800	16000	200	1.26582278	78
Malakand	Chitral	Drosh North	Khair Abad Road Side	15	23800	24000	200	0.84033613	85
Malakand	Avg								
Malakand	Total			83	109575	109710	135	0.12320329	
Malakand	%								79.00
Lower Hazara	Siran	Upper Siran	Chinarkot	18	19350	19400	50	0.25839793	82
Lower Hazara	Kaghan	Kaghan	Danda Jared	14	15050	15851	801	5.32225914	95
Upper Hazara	Hazara Tribe	Battgram	Kotgala	50	53500	53400	-100	-0.1869159	85
Upper Hazara	Thor Ghar	Juddbah	Shatal Road	75	80625	80329	-296	-0.3671318	81

Upper Hazara	Upper Kohistan	Harban	harban to asper	35	37625	37722	97	0.25780731	83
Upper Hazara	Lower Kohistan	Palas	Shalkanabad	35	37625	37528	-97	-0.2578073	81
Upper Hazara	Avg								
Upper Hazara	Total			227	243775	244230	455	0.18664752	
Upper Hazara	%								84.5
All Region	Avg								
All Region	Total			794.9	875397	876195	798	0.09115864	
All Region	%								83.57

9.10 Appendix-I: Details of Sowing and Dibbling

Region	Foest division	Range/subdivision	Location/ site	Aera (ha)	Total
South	Mardan	Rustam	Salam Khan	330	1236
South	Kohat	Kohat	Koteri	55	893
South	Kohat	Kohat	Dhoda	10	2080
South	Kohat	Kohat	Siab	40	2340
South	Kohat	Kohat	Gul hassan banda	120	2612
South	Kohat	Teri	Bahadur khel	20	No Sprouting found
South	Kohat	Karak	Alwar Banda	50	No Sprouting found
South	Kohat	Teri	Drangi	100	No Sprouting found
South	D.I.Khan	Paharpur	CRBC Tir Garh	1142	No Sprouting found
South	Avg			207.44	1832.17
South	Total			1867	9161
South	%age				100
Malakand	Buner	Daggar	Navi Dara	59	419
Malakand	Buner	Chamla	Lakai Ghar	107	1144
Malakand	Alpuri	Alpuri	Banda Copt#4	109	790
Malakand	Alpuri	Karora	Soor Band Compt#15	20	499
Malakand	Kalam	Behrain South	Tirat (Shalotek) Compt#2	70	1333
Malakand	Swat	Mingora	Chail Shagai	100	1323
Malakand	Swat	Mingora	Manyaar Kashala	100	1329
Malakand	Upper Dir	Wari	Mahmano Banda	40	1433
Malakand	Swat	Fatepoor	Redar Tal sir	350	842
Malakand	Alpuri	Alpuri	Shalizara	45	833
Malakand	Avg			75.625	995
Malakand	Total			1000	9945
Malakand	%				100
Hazara	Siran	Upper Siran	Panjool RF-2 (III)	40	2010
Hazara	Agror Tanawal	Gidarpur	Gidarpur RLC -4 5	140	1683
Hazara	Agror Tanawal	Gidarpur	Gidarpur RLC -1 2	110	1830
Hazara	Upper Kohistan	Harban	suggimoos	202	No Sprouting found
Hazara	Gallies	Dongagali	Mira romal	32.38	2121
Hazara	Gallies	Berangali	Chattri	60	2734
Hazara	Siran	Upper Siran	Devli baila	20	2403
Hazara	Hazara Tribe	Battgram	Hotal Deshan	119	596.32
Hazara	Kohistan	Lower Kohistan	Shalkanabad	60	1674
Hazara	Kohistan	Lower Kohistan	Jumgali	100	903
Hazara	Avg			123	1772.7
Hazara	Total			492	15954.32
Hazara	%				100
Watershed	Bunir W/Shed	Daggar	Sarmalang	83	1033
Watershed	Bunir W/Shed	Pacha	Pesho Ghat	115	1163
Watershed	Kohistan W/Shed	Kohistan	Gorgat Rania	200	1049
Watershed	Daur watershed	Abbotabad	Burji	40	2304

Watershed	Daur watershed	Abbotabad	Kasaki	83	1432.45
Watershed	Daur watershed	Havelian	Mohri Dewal	115	1388.84
Watershed	Bunir W/Shed	Daggar	Sarmalang	83	713
Watershed	Bunir W/Shed	Pacha	Pesho Ghat	115	816
Watershed	Kohistan W/Shed	Kohistan	Gorgat Ranial	200	1289
Watershed	Unhar	Shergarh	Nikka Pani	95	834
Watershed	Daur watershed	Abbotabad	Burji	40	2186
Watershed	Avg			106.2727273	1291.7
Watershed	Total			1169	14208.29
Watershed	%				100
All Region	Avg				1473
All Region	Total			4528	12317
All Region	%				100

9.11 Appendix-J: Details about farm forestry

Region	Division	Sub Division	Provided by FD	Survived	Survival %	Average Spacing in ft
South	Peshawar	Charsadda	185448	136008	73.3	6.7
South	Peshawar	Nizampur	302687	187854	62.1	6.8
South	Mardan	Mardan	79842	47621	59.6	6.4
South	Mardan	Sawabi	162100	103258	63.7	5.8
South	Mardan	Rustam	73200	47961	65.5	6.3
South	Mardan	Katlang	22750	13250	58.2	5.5
South	Kohat	Kohat	64677	38256	59.1	5.2
South	Kohat	Teri	46288	28379	61.3	5
South	Kohat	Thall	7800	4200	53.8	5.5
South	Kohat	Karak	283230	185572	65.5	5.8
South	Kohat	Hango	37246	22675	60.9	5.3
South	Bannu	Bannu	172233	106578	61.9	4.2
South	Bannu	L Marwat	131000	72718	55.5	5.4
South	D I Khan	D I Khan	342720	221431	64.6	4.8
South			1911221	1215761	63.6	5.62
Malakand	Swat	Mingora	24850	13084	52.7	5.2
Malakand	Swat	Kabal	22000	10556	48.0	4.5
Malakand	Swat	Matta	68800	28253	41.1	6.1
Malakand	Swat	Fathipur	23500	10650	45.3	5
Malakand	Lower Dir	Timergara	167000	134190	80.4	8.6
Malakand	Lower Dir	Chakdara	11550	6916	59.9	5.25
Malakand	Alpuri	Alpuri	39500	19495	49.4	4.2
Malakand	Alpuri	Karora	52500	29392	56.0	4.8
Malakand	Bunir	Chamla	130000	74782	57.5	6.3
Malakand	Bunir	Daggar	88400	62985	71.3	5.5
Malakand	Chitral	Chitral	22384	9961	44.5	4.7
Malakand	Chitral	Drosh South	16308	8027	49.2	5
Malakand	Chitral	Drosh North	8648	4721	54.6	6.4
Malakand	Chitral	Boni	40780	17322	42.5	6.5
Malakand	Dir Kohistan	Patrak	7962	4877	61.3	6.2
Malakand	Dir Kohistan	Shiringal	35000	22263	63.6	6.5
Malakand	Dir Kohistan	Kalkot	6500	2328	35.8	6
Malakand	Kalam	Behrain south	8700	2880	33.1	4.2
Malakand	Kalam	Kalam	9300	4047	43.5	6.2
Malakand	Kalam	Utror	6070	2028	33.4	4.3
Malakand	Kalam	Behrain North	17195	9651	56.1	5.5
Malakand	Lower Dir	Chakrada	7750	5489	70.8	7

Malakand	Malakand	Dargai	34160	21138	61.9	6.8
Malakand	Malakand	Batkheila	18660	11886	63.7	4.2
Malakand	Upper Dir	Wari	30000	17610	58.7	6.7
Malakand	Upper Dir	Darora	31000	20567	66.3	5
Malakand	Upper Dir	Dir	29500	20044	67.9	6
Malakand			958017	575142	60.0	5.65
Hazara	Haripur	Khanpur	34943	14816	42.4	6
Hazara	Haripur	Haripur	41635	26521	63.7	5.4
Hazara	Haripur	Ghazi	39750	18951	47.7	5
Hazara	Hazara Tribble	Battgram	13795	5897	42.7	5.52
Hazara	Hazara Tribble	Allai	36350	22328	61.4	7.6
Hazara	Hazara Tribble	Hillan	14000	8039	57.4	9.1
Hazara	Agror Tanawal	Agror	11700	5243	44.8	5.2
Hazara	Agror Tanawal	Oghi	67400	48076	71.3	4.5
Hazara	Agror Tanawal	Gidarpur	88300	64660	73.2	5.28
Hazara	Agror Tanawal	Shergarh	28700	18664	65.0	6
Hazara	Siran	Lower Siran	135795	105291	77.5	6.3
Hazara	Siran	Mansehra	156000	89135	57.1	7.2
Hazara	Torghar	Juddbah	127580	66835	52.4	6.8
Hazara	Kaghan	Balakot	130500	73984	56.7	6.7
Hazara	Gallis	Abbottabad	49353	37830	76.7	8.3
Hazara	Lower Kohistan	Pattan	56223	23173	41.2	6.9
Hazara	Upper Kohistan	Daso	144500	50794	35.2	7.4
Hazara			1176524	680237	57.8	6.42
Watershed	Buner W.S	Daggar	165845	102933	62.1	5.2
Watershed	Buner W.S	Pacha	123000	79704	64.8	5
Watershed	Buner W.S	Chamla	103500	61679	59.6	5.5
Watershed	Besham W.S	Besham	175000	107218	61.3	5.2
Watershed	Besham W.S	Puran	142260	92183	64.8	5
Watershed	Besham W.S	Kohistan	60500	32678	54.0	6.1
Watershed	Unhar	Sherghar	97950	63999	65.3	4.7
Watershed	Unhar	Battgram	27031	10360	38.3	8.4
Watershed	Kunhar	Mansehra	156600	101322	64.7	5.1
Watershed			1051686	652076	62.0	
Total			5097448	3123216	61.27	
Average						5.83
%age						

9.12 Appendix-K(I): Details of badlands rehabilitation and watershed management measures

Name Division	Intervention	Target				Quantity				Success rate of vegetation material (%)
		Planned	Achieved	Monitored	% Monitor	Avg vol (cft)	Area (sft)	Area (ha)	Length (ft)	
Upper Dir	Loose stone check dam	200	200	56	28	78.84	0	0		NA
Upper Dir	Vegetated soft Gabion checkdams	20	20	8	40	0	0.00	20.00		45
Upper Dir					34	78.84	0.00	20.00	0.00	45
Buner W.Shed	Loose stone check dams	40	35	8	22.86	98.74	0	0	0	N/A
Buner W.Shed	Brush Layering	20	12	3	25.00	0	8765	0	875	35
Buner W.Shed	Gabions Check Dam	20	8	2	25.00	876.86	0	0	0	N/A
Buner W.Shed	Plantation	20	20	5	25.00	0	0	20	0	30
					24.46	975.6	8765	20	875	32.5
Alpuri	Loose stone check dam	80	80	15	18.75	232	0	0	0	N/A
Alpuri	Brush Layering	20	20	5	25	0	9864	0	1155	56
Alpuri	Plantation	15	15	7	46.67	0	0	5	0	52
					30.14	232	9864	5	1155	54.00
Kalam	Loose stone check dam	50	50	12	24	1986.98	0	0	0	N/A
Kalam	Gabion Check Dam	8	8	2	25	1174	0	0	0	N/A
Kalam	Vegetative Loose Stone Retaining Wall	1	1	1	100	0	2156	0	1178	52
Kalam	Plantation	10	10	2	20	0	0	10	0	48
					42.25	3160.98	2156	10	1178	50.00
Unhar watershed	Loose stone check dame	131	131	14	10.69	210.68	0	0	0	N/A
Unhar watershed	Gabion Check dam	9	9	2	22.22	490.86	0	0	0	N/A
Unhar watershed	Soft Vegetative layering	18	18	10	55.56	0	1015.4	0	0	61
Unhar watershed	Layering	60	60	16	26.67	0	0	0	0	73

Unhar watershed	Plantation	50	50	50	100.00	0	0	50	0	64
Unhar watershed	Cut of Drain	2	2	1	50	7818.71	0	0	0	N/A
Unhar watershed					44.18857789	8520.25	1015.4	50	0	66.00
Daur watershed	Loose stone check dam	615	615	24	3.90	197.2	0	0	0	N/A
Daur watershed	Soft vegetative layering	583	583	41	7.03	0	0	20	0	67.00
Daur watershed	Cut of Drain	246	246	2	0.81	1722.6	0	0	0	N/A
Daur watershed	Wirenated spur	9	9	2	22.22	3957.1	0	0	0	N/A
					8.49	5876.9	0	20	0	67.00
Kunhar wshed /degraded watershed	Vegetative layering	40	40	29	72.5	0	0	30	0	69.72
Kunhar wshed /degraded watershed	Soft vegetative layering	4	4	3	75	0	0	30	0	72.70
Kunhar wshed /degraded watershed	Loose stone check dam	48	48	18	37.5	862.95	0	0	0	N/A
Kunhar wshed /degraded watershed	Cut of Drain	4	4	2	50	1679	0	0	0	N/A
Kunhar wshed /degraded watershed	Spur	5	5	4	80	564.1	0	0	0	N/A
Kunhar wshed /degraded watershed	Plantation (5m*5m)	3	3	3	100	0	0	3	0	78.00
Kunhar wshed /degraded watershed	Plantation (10m*10m)	30	30	30	100	0	0	30	0	75.00
Kunhar wshed /degraded watershed					63	3106.05	0	93	0	71.21
Hazara Tribal	Loose stone check dam	498	498	50	10.04	145.12	0	0	0	N/A
Hazara Tribal	Brush wood check Dam	2464	2464	124	5.03	0	0	0	0	68.38
Hazara Tribal	Layering	510	510	53	10.39	0	0	0	0	69.00

Hazara Tribal	Cut of drain	57	57	6	10.53	370.53	0	0	0	N/A
Hazara Tribal	Plantation	40	40	40	100	0	0	37.5	0	97.00
					27.20	515.65	0	37.5	0	78.13
Siran	Loose stone check dam	76	76	29	38.16	728.9	0	0	0	N/A
Siran	Layering	4	4	2	50.00	0	0	25	0	71.21
Siran	Soft vegetative layering	4	4	3	75	0	0	40.56	0	72
Siran	Cut of Drain	1	1	1	100	6536.6	0	0	0	N/A
Siran					65.789	7265.5		65.56	0	71.605
Total						29731.77	21800.40	321.06	3208.00	59.49

9.13 Appendix-K(II): Details of badlands rehabilitation and watershed management measures

Name Division	Intervention	Target				Quantity				Success rate of vegetation material (%)
		Planned	Achieved	Monitored	% Monitor	Avg vol (cft)	Area (sft)	Area (ha)	Length (ft)	
Kaghan	Loose stone check dam	70	70	7	10	186.72	0	0		NA
Kaghan	Vegetated Loose stone check	83	83	9	10.84	148.58	0.00	0.00		65
Kaghan	Soft gabion	3	3	3	100.00	313.97	0	0	0	85
Kaghan	Brush wood Layering	8	8	5	62.50	0	0	0	89	92
Kaghan	Cut of Drain	1	1	1	100.00	3908	0	0	0	N/A
Kaghan	Plantation	9	9	9	100.00	0	0	9	0	92
Kaghan Pagul	Loose stone check dam	81	81	8	9.88	463.63	0	0	0	0
Kaghan Pagul	Vegetated Loose stone check	37	37	9	24.32	160.96	0	0	0	84
Kaghan Pagul	Vegetative Soft gabion	39	39	6	15.38	200.41	0	0	0	85
Kaghan Pagul	Brush wood Layering	152	152	18	11.84	0	0	0	642	80
Kaghan Pagul	Cut of Drain	3	3	1	33.33	1184.82	0	0	0	N/A
					43.46	6567.09	0.00	9.00	731.00	72.875
Kaghan degraded watershed	Vegetated Loose stone check	78	78	8	10.26	11534	0	0	0	70
Kaghan degraded watershed	Soft gabion	27	27	3	11.11	1003.14	0	0	0	83
Kaghan degraded watershed	Brush wood Layering	27	27	13	48.15	0	0	0	432.2	76.66
Kaghan degraded watershed	Cut of Drain	3	3	1	33.33	972	0	0	0	N/A
Kaghan degraded watershed	Plantation (5m*5m)	3	3	3	100	0	0	3	0	81
Kaghan degraded watershed	Plantation (10m*10m)	13	13	13	100	0	0	13	0	84
					50.47	13509.14	0	16	432.2	78.93
Siran	Loose stone check dam	50	50	3	6	498.6	0	0	0	N/A

Siran	Vegetative Loose Stone	55	55	9	16.363636	537.88	0	0	0	80
Siran	Cut of Drain	2	2	1	50	903	0	0	0	N/A
					24.121212	1939.48	0	0	0	80.00
Daur watershed	Loose stone check dame	53	53	48	90.57	761.96	0	0	0	N/A
Daur watershed	Gabion Check dam	2	2	2	100.00	7081.81	0	0	0	N/A
Daur watershed	Soft Vegetative layering	518	518	321	61.97	0	0	0	0	82
Daur watershed	Gabion Spur	19	19	4	21.05	7775.53	0	0	0	N/A
Daur watershed	Plantation	2	2	2	100.00	0	0	2	0	79
Daur watershed	Cut of Drain	1	1	1	100	3324	0	0	0	N/A
Total						22015.71	0.00	25.00	1163.20	77.27

9.14 Appendix-L (i): Details of departmental nurseries-Tube

Regions	Division	Range/Sub-Division	Location	Area (ha)	Stock						
					Total P. Stock as per record	P. Stock Distributed	Planting stock available during monitoring	Survival Rate	Net available P. Stock	Fit	Unfit
South	Peshawar	Peshawar	Ghufran Abad	0.2	303120	0	303120	85	257652	180356.4	77295.6
South	Peshawar	Charsadda	kochiano kali	0.4	340710	163130	177580	97	172252.6	86126.3	86126.3
South	Peshawar	Total		0.6	643830	163130	480700		429904.6	266482.7	163421.9
South	Peshawar	Avg		0.3				91.00			
South	Peshawar	%								61.99	38.01
South	Bannu	Bannu	Hassan Khel	0.8	1100000	335000	765000	78	596700	447525	149175.00
South	Bannu	Bannu	Tapi kala	0.65	780000	480000	300000	72	216000	129600	86400.00
South	Bannu	Total		1.45	1880000	815000	1065000		812700	577125	235575
South	Bannu	Avg		0.65				75			
South	Bannu	%								71.01	28.99
South	All divisions	Total		2.05	2523830	978130	1545700		1242604.6	843607.7	398996.9
South	All divisions	Avg		0.95				83.00			
South	All divisions	%			100.00					67.89	32.11
Malakand	Malakand	Dargai	Jharay Sakhakot	0.8	1000000	50000	950000	95	902500	180500	722000
Malakand	Malakand	Total		0.8	1000000	50000	950000		902500	180500	722000
Malakand	Malakand	Avg		0.80				95.00			
Malakand	Malakand	%			100.00					20.00	80.00
Malakand	Swat	Mingora	Kot Nawaikaley	0.5	1568500	976542	591958	70	414371	414371	0
Malakand	Swat	Matta	Chuprial	0.75	916460	54400	862060	95	818957	614200	204757
Malakand	Swat	Fatehpur	Ghar Shin Nawy Kaly	0.75	725000	555000	170000	95	161500	134600	26900
Malakand	Swat	Total		2	3209960	1585942	1624018		1394827.6	1163171	231657
Malakand	Swat	Avg		0.67				86.666667			
Malakand	Swat	%			100.00					83.39	16.61
Malakand	Kalam	Behrain South	Benorai	2	1870250	65700	1804550	79	1425594.5	926636.425	498958.075
Malakand	Kalam	Total		2	1870250	65700	1804550		1425594.5	926636.425	498958.075
Malakand	Kalam	Avg		2.00				79			
Malakand	Kalam	%			100.00					65.00	35.00
Malakand	Shangla	Alpuri	Karora	0.83	1235500	525500	710000	85	603500	590000	13500
Malakand	Shangla	Total		0.83	1235500	525500	710000		603500	590000	13500
Malakand	Shangla	Avg		0.83				85.00			

Malakand	Shangla	%			100.00					97.76	2.24
Malakand	Bunair	Chamla	Sura village	1.06	141500	0	141500	94	133010	94437	38572.9
Malakand	Bunair	Total		1.06	141500	0	141500		133010	94437.1	38572.9
Malakand	Bunair	Avg		1.06				94.00			
Malakand	Bunair	%			100.00					71.00	29.00
	Chitral	Chitral	Chamarkun	0.4	339000	339000	0	100	0	0.00	0
Malakand	Chitral	Total		0.4	339000	339000	0	100	0	0	0
Malakand	Chitral	Avg		0.40				100.00			
Malakand	Chitral	%			100.00					#DIV/0!	#DIV/0!
Malakand	Lower Dir	Timergara	Bandagai	0.56	750000	8200	741800	95	704710	458062	246649
Malakand	Lower Dir	Chakdara	Shaheedabad	0.36	376000	118564.792	257435.2083	96	247137.8	201170	45968
Malakand	Lower Dir	Total		0.92	1126000	126765	999235		951847.8	659231.6692	292616
Malakand	Lower Dir	Avg		0.46				95.50			
Malakand	Lower Dir	%			100.00					69.26	30.74
Malakand	All divisions	Total		8.01	8922210	2692906.79	6229303.208		5411279.9	3613976.194	1797304.106
Malakand	All divisions	Avg		0.89				90.74			
Malakand	All divisions	%			100.00					66.79	33.21
Hazara Teritorial	Siran	Mansehra	Baffa Doraha	2	2550000	0	2550000	91	2320500	1,856,400	464100
Hazara Teritorial	Siran	Total		2	2550000	0	2550000		2320500	1856400	464100
Hazara Teritorial	Siran	Avg		2.00				91			
Hazara Teritorial	Siran	%			100.00					80.00	20.00
Hazara Teritorial	Hazara Tribe	Battgram	jehangir abad	1.5	1848183	8200	1839983	78	1435187	760,649	674538
Hazara Teritorial	Siran	Total		1.5	1848183	8200	1839983		1435187	760649	674538
Hazara Teritorial	Siran	Avg		1.50				78			
Hazara Teritorial	Siran	%			100.00					53.00	47.00
Hazara Teritorial	Torghar	Kandar	Ismail Band	0.6	410000	52000	358000	93	332,940	233058	99882
Hazara Teritorial	Torghar	Total		0.6	410000	52000	358000		332940	233058	99882
Hazara Teritorial	Torghar	Avg		0.60				93			
Hazara Teritorial	Torghar	%			100.00					70.00	30.00
Hazara Teritorial	Agror tanawal	Gidarpur	Chowki	1.5	1850000	190000	1660000	81	1,344,600	605070	739530
Hazara Teritorial	Agror tanawal	Total		1.5	1850000.0	190000.0	1660000.0		1344600.0	605070.0	739530.0

Hazara Teritorial	Agror tanawal	Avg		1.50				81			
Hazara Teritorial	Agror tanawal	%			100.00					45.00	55.00
Hazara Teritorial	Gallies	Abbottabad	Salhad	1.5	1853250	762600	1,090,650	95	1,036,118	221729	814388.3550
Hazara Teritorial	Gallies	Total		1.50	1853250.0	762600.0	1090650.0	95.0	1036117.5	221729.1	814388.4
Hazara Teritorial	Gallies	Avg		1.50				95			
Hazara Teritorial	Gallies	%			100.00					21.40	78.60
Hazara Teritorial	Haripur	Haripur	Nikkapur	0.4	548250	62250	486000	95	461700	415530	46170.0000
Hazara Teritorial	Haripur	Total		0.4	548250.0	62250.0	486000.0		461700.0	415530.0	46170
Hazara Teritorial	Haripur	Avg		0.40				95			
Hazara Teritorial	Haripur	%			100.00					90.00	10.00
Hazara territorial		Total		7.5	9059683.0	1075050.0	7984633.0		6931044.2	4092436.1	2838608.1
Hazara territorial		Avg									
Hazara territorial		%			100.00			88.83		59.05	40.95
Hazara Watershed	Unhar Watershed	Allai	Batkol	1.2	1543140	0	1543140	90	1388826	833296	555530
Hazara Watershed		Total		1.2	1543140	0	1543140		1388826	833296	555530
Hazara Watershed		Avg		1.2				90.00			
Hazara Watershed		%			100.00					60.00	40.00
Hazara Watershed	Daur w.shed	Havelia	Sadaqat khan	1	1214600	689200	525400	75	394050	78810	315240
Hazara Watershed	Daur w.shed	Total		1	1214600	689200	525400		394050	78810	315240
Hazara Watershed	Daur w.shed	Avg		1.00				75			
Hazara Watershed	Daur w.shed	%			100.00					20.00	80.00
	Besham w.shed	Besham	Ziarat Paty (Shang)	0.5	442300	88900	353400	78	275652	192956.4	82696
	Besham w.shed	Chamla	Kuz Kaley	0.5	630000	300000	330000	67	221100	129800	91300
Watershed	Besham w.Shed	Total		1	1072300	388900	683400		496752	322756	173996
Watershed	Besham w.Shed	Avg		0.50				72.5			
Watershed	Besham w.Shed	%			100.00					64.97	35.03
	Buner w.shed	Pacha	Daggar Talan	0.53	468837	6000	462837	72	333243	236601	96642

	Buner w.shed	Chamla	Kaoga	0.4	500000	0	500000	98	490000	411600	78400
Watershed	Buner w.shed	Total		0.93	968837	6000	962837		823243	648201	175042
Watershed	Buner w.shed	Avg		0.47				85			
Watershed	Buner w.shed	%			100.00					78.74	21.26
watershed	All divisions	Total		4	4798877	1084100	3714777		3102871	1883063	1219808
watershed	All divisions	Avg									
watershed	All divisions	%			100.00			80.63		60.69	39.31
All regions	All regions	Total		22	25304600	5830187	19474413		16687799	10433083	6254717
All regions	All regions	Avg									
All regions	All regions	%			100.00			85.80		62.52	37.48

9.15 Appendix-L (II): Details of departmental nurseries-Bare Rooted

			Stock							
South	Division	Subdivision	Location	Area Ha				Size		Survival Rate
					Distributed	Available	Net Stock	Fit	Unfit	
South	Peshawar	Charsadda	Gul Rang	1	0	103000	92700	83430	9270	90
	Total			1	0	103000	92700	83430	9270	
	Average									90
	%									
South	Mardan	Mardan	Jamra Takhtbhai	6	190000	9000	8100	7290	810	90
South				6	190000	9000	8100	7290	810	
										90
South	All division			7	190000	112000	100800	90720	10080	
South										90
South										
Lower Hazara	Haripur	Haripur	Dheri Sikandar	1.34	0	123000	116850	114513	2337	95
Lower Hazara	Haripur	Khanpur	Kutli Hattar	1	25000	81600	69360	69360	0	85
				2.34	25000	204600	186210	183873	2337	
										90
Lower Hazara	Gallies	Abbottabad	Dingapur	6.5	805500	25000	23250	22320	930	93
Lower Hazara	Gallies	Abbottabad	Dingapur	1	100000	0	0	0	0	96
	Total			7.5	905500	25000	23250	22320	930	
	Avg									94.5
	%									
Lower Hazara	Siran	Lower Siran	Dharyal	1	123800	0	0	0	0	93
Lower Hazara	Siran	Lower Siran	Shnai Bala	1	99000	0	0	0	0	96
	Total			2	222800	0	0	0	0	
	Avg									94.5
	%									
Upper Hazara	Agror Tanawal	Gidarpur	Chowki	1	0	60000	55800	55242	558	93
	Total			1	0	60000	55800	55242	558	
	Avg									93

	%									
Upper Hazara	Hazara tibal	Battgram	Maidan	0.92	0	36445	13484.65	12405.88	1079	37
	Total			0.92	0	36445	13484.7	12405.9	1078.772	
	Avg									37
	%									
Upper Hazara	Thor Ghar	Kandar	Umar Shah Banda	2	0	250000	230000	216200	13800	92
Upper Hazara	Thor Ghar	Juddbah	Gujar Bandi	1	0	94612	90827.52	88102.69	2724.8256	96
	Total			3	0	344612	320828	304303	16524.826	
	Avg									94
	%									
Upper Hazara	Lower Kohistan	Patan	Ranolia	0.06	55000	0	0	0	0	0
Upper Hazara	Lower Kohistan	Patan	Shang	0.8	90800	0	0	0	0	0
Upper Hazara	Lower Kohistan	Jalkot	Goshali	0.75	67575	0	0	0	0	0
	Total			1.61	213375	0	0	0	0	0
	Avg									0
	%									
Hazara	Total			18.37	1366675	670657	599572.2	578143.6	21428.5976	0
	Average									83.83
	%									
Malakand	Malakand	Dargai	Sakhakot	2	0	288286	259457	212755	46702	90
	Total			2	0	288286	259457.4	212755.1	46702.332	
	Avg									90
	%									
Malakand	Alpuri	Alpuri	Bingalai	3	0	367350	312248	275500	36748	85
Malakand	Alpuri	Karora	Shang (Medan)	1	0	24500	22540	20750	1790	92
	Total			4	0	391850	334787.5	296250	38537.5	
	Avg									88.5
	%									
Malakand	Lower Dir	Chakdara	Shaeedabad	0.49	0	49400	45942	41807.22	4134.78	93
Malakand	Lower Dir	Timergara	Bandagai	0.95	1000	122334	111323.9	101304.8	10019.1546	91

Malakand	Lower Dir	Chakdara	Shaeedabad	1.13	0	160700	155879	149643.8	6235.16	97
	Total			2.57	1000	332434	313144.9	292755.8	20389.0946	
	Avg									93.666667
	%									
Malakand	Kalam	Behrain North	Chikrai	2	134500	101500	88305	81241	7064	87
	Total			2	134500	101500	88305	81240.6	7064.4	
	Avg									87
	%									
Malakand	Chitral	Drosh South	Nagar	2	218300	0	0	0	0	100
Malakand	Chitral	Booni	Dokandeih	0.48	49100	0	0	0	0	100
Malakand	Chitral	Drosh North	Dad Khandori	1	0	80000	76000	75000	1000	95
	Total			3.48	267400	80000	76000	75000	1000	
	Avg									98.333333
	%									
Malakand	Swat	Fatehpur	Nawey Kaley	1	0	80000	76000	75000	1000	95
Malakand	Swat	Mingora	Kot (Naway Kaly)	0.85	0	94000	77080	71300	5780	82
Malakand	Swat	Matta	Kwarai	0.75	0	75400	71630	66630	5000	95
Malakand	Swat	Kabal	Damghar	1	0	119300	113335	93500	19835	95
Malakand	Swat	Fatehpur	Nawey Kaley	1.25	120000	0	0	0	0	
	Total			4.85	120000	368700	338045	306430	31615	
	Avg									91.75
	%									
Malakand	Buner	Daggar	Daggar	1.6	99375	74025	61440.75	56832	4608.75	83
Malakand	Buner	Chamla	Chamla	1	0	118400	100640	91900	8740	85
	Total			2.6	99375	192425	162080.8	148732	13348.75	
	Avg									84
	%									
Malakand	All division	Total		21.5	622275	1755195	1571821	1413164	158657.0766	
		Avg								90.464286
		%								
Watershed	Daur w/s	Haripur	Nikkapah	1.5	219900	18250	15147.5	12420.95	2726.55	83
	Total			1.5	219900	18250	15147.5	12420.95	2726.55	
	Avg									83
	%									

Watershed	Besham W.Shed	Kohistan	Ziarat Patay (Shang)	0.6	69500	0	0	0	0	100
Watershed	Besham W.Shed	Puran	Sundvi	1.3	148100	0	0	0	0	100
Watershed	Besham W.Shed	Besham	Ziarat Patay (Shang)	0.8	95000	0	0	0	0	
	Total			1.9	217600	0	0	0	0	
	Avg									100
	%									
Watershed	Buner W.Shed	Daggar	Kaloo Cheena	2.5	312500	0	0	0	0	100
Watershed	Buner W.Shed	Daggar	Kaloo Cheena	1.5	150000	0	0	0	0	
	Total			2.5	312500	0	0	0	0	
	Avg									100
	%									
Watershed	Unhar w/shed	Battagram	Kandoli	1	123550	0	0	0	0	0
Watershed	Unhar w/shed	Battgram	Kandoli	0.5	52000	0	0	0	0	100
Watershed	Unhar w/shed	Shergarh	Parhena	0.5	23050	26350	23978.5	23259.15	719.355	91
	Total			2	198600	26350	23978.5	23259.15	719.355	
	Avg									91
	%									
Watershed	Kunhar W/Shed	Siran	Muradpur	1	95600	0	0	0	0	0
Watershed	Kunhar W/Shed	Siran	Muradpur	0.5	75500	0	0	0	0	0
	Total			1.5	171100	0	0	0	0	
	Avg									
	%									
Watershed	All division	Total		9.4	1119700	44600	39126	35680.1	3445.905	0
		Avg								93.5
		%								
All division	Total			56.27	3298650	2582452	2311319	2117707	193611.5792	
	Avg									89.45
	%									

9.16 Appendix-M (I): Details of private nurseries-Tube

Division	Range/Sub-Division	Location	Units allocated	Stock					
				Distribut ed	Available Stock	Net Stock	Fit	Unfit	Survival Rate
Peshawar	Peshawar	Akbar pura	12	100000	200000	190000	165300	24700	95
Peshawar	Peshawar	Akhun Panju Baba	2	20000	30000	27000	18900	8100	90
Peshawar	Peshawar	Akbar pura	4	0	200000	180000	45000	135000	90
Peshawar	Peshawar	Tarnab Faram	32	0	925000	832500	749250	83250	90
Peshawar	Peshawar	Chugal Pura	4	66000	134000	127300	120935	6365	95
Peshawar	Peshawar	Jiggu Ghufra n Abad	20	100000	305000	259250	181475	77775	85
Peshawar	Charsadda	Toranzai	5	0	120000	84000	71400	12600	70
Peshawar	Charsadda	Ziam	4	0	80000	80000	36000	44000	100
Peshawar	Charsadda	Umerzai	40	0	1000000	600000	240000	360000	60
Peshawar	Nowshera	Manki sharif	40	300000	700000	686000	617400	68600	98
Peshawar	Nowshera	Manki sharif	40	100000	900000	810000	648000	162000	90
Peshawar	Total		203	686000	4594000	3876050	2893660	982390	
Peshawar	Average		18.45						87.55
Peshawar	%								
Mardan	Katlang	Gulli bagh	6	0	15000	14250	12825	1425	95
Mardan	Katlang	Kunj Ghareeb abad	40	700000	300000	270000	54000	216000	90
Mardan	Katlang	Katlang bazar	4	0	100000	92000	46000	46000	92
Mardan	Katlang	Gulli Bagh	6	0	150000	147000	29400	117600	98
Mardan	Katlang	gulli bagh	6	0	150000	142500	71250	71250	95
Mardan	Mardan	Gujjar Ghari	2	25000	25000	22500	2250	20250	90
Mardan	Total		64	725000	740000	688250	215725	472525	
Mardan	Average		10.67						93.33
Mardan	%								
Kohat	Kohat	Kharmati	4	25000	75000	45000	13500	31500	60
Kohat	Kohat	Bora gari	2	1600	48400	23716	22530.2	1185.8	49
Kohat	Kohat	Bora gari	4	10000	101000	76760	69084	7676	76
Kohat	Kohat	Ghumbat	2	36000	2000	1500	450	1050	75

Kohat	Kohat	Ghumbat	2	0	50000	40000	36000	4000	80
Kohat	Karak	Khamedan	80	120000	1880000	1128000	620400	507600	60
Kohat	Total		94	192600	2156400	1314976	761964.2	553011.8	
Kohat	Average								66.67
Kohat	%								
	Total		361	1603600	7490400	5879276	3871349	2007927	
	Average								82.52
	%								
Swat	Mingora	Mjurad Abad Manglawar	2	0	50000	45000	44000	1000	90
Swat	Mingora	Murad Abad Manglawar	4	0	100000	96000	90000	6000	96
Swat	Mingora	Maira Charbagh	2	25000	25000	22500	15000	7500	90
Swat	Mingora	Maira Charbagh	4	0	100000	22000	15000	7000	22
Swat	Mingora	Manglawar	4	0	100000	85000	80000	5000	85
Swat	Mingora	Dewana Baba Charbagh	8	0	200000	190000	180000	10000	95
Swat	Mingora	Manglawar	4	0	100000	95000	80000	15000	95
Swat	Matta	Dureshkhela	4	30000	70000	61600	27000	34600	88
Swat	Matta	Dureshkhela	12	0	200000	170000	10700	159300	85
Swat	Matta	Garai Chopriyal	8	0	240000	228000	220000	8000	95
Swat	Matta	Baraim Gora	10	0	270000	264600	255000	9600	98
Swat	Matta	Chupriyal Garai	4	0	100000	90000	55000	35000	90
Swat	Matta	Dureshkhela	11	115000	160000	136000	55000	81000	85
Swat	Kabal	Ningolai	3	0	75000	73500	71000	2500	98
Swat	Kabal	Ningolai	4	30000	70000	63000	53000	10000	90
Swat	Kabal	Ningholai Malak Abad	8	40000	160000	136000	115000	21000	85
Swat	Kabal	Khairabad	4	0	100000	85000	45000	40000	85
Swat	Kabal	Khairabad	6	1000	149000	126650	25000	101650	85
Swat	Fatehpur	Jukhtai	14	0	350000	332500	300000	32500	95
Swat	Fatehpur	Jukhtai	4	0	130000	114400	100000	14400	88
Swat	Fatehpur	Jukhtai	8	0	200000	170000	160000	10000	85
	Total		128	241000	2949000	2606750	1995700	611050	

	Average								86.90
	%								
Alpuri	Alpuri	Chawga Chorlangai	32	17000	783000	626400	411075	215325	80
Alpuri	Alpuri	Chawga Chorlangai	3	0	75000	67500	22500	45000	90
Alpuri	Alpuri	Chawga Chorlangai	13	0	325000	299000	81250	217750	92
Alpuri	Alpuri	Shang(Booda)	10	24000	218000	196200	121000	75200	90
Alpuri	Alpuri	Shang	16	0	412000	309000	300000	9000	75
Alpuri	Alpuri	Shang	8	18000	182000	172900	135000	37900	95
Alpuri	Total		82	59000	1995000	1671000	1070825	600175	
Alpuri	Average								87
Alpuri	%								
Malakand	Dargai	Dargai	5	0	125000	118750	59375	59375	95
Malakand	Dargai	Dargai	60	716000	784000	744800	521360	223440	95
Malakand	Dargai	Dargai Phatak	4	25000	675000	303750	91125	212625	45
Malakand	Dargai	Gcp Ghee Mill Dargai	4	0	100000	75000	22500	52500	75
Malakand	Dargai	Dargai	6	0	1300000	1235000	1049750	185250	95
Malakand	Total	0	79	741000	2984000	2477300	1744110	733190	
Malakand	Average								81
Malakand	%								
Chitral	Chitral	Kuro Ayun	8	22000	178000	133500	43250	90250	75
Chitral	Chitral	Sahan Ayun	8	5400	194600	105084	67800	37284	54
Chitral	Chitral	Singoor	2	0	50000	0	0	0	0
Chitral	Chitral	Singoor	2	4500	45500	25025	12700	12325	55
Chitral	Chitral	Sahan Ayun	4	4000	96000	52800	31500	21300	55
Chitral	Drosh North	Kesu	8	0	200000	30000	11000	19000	15
Chitral	Drosh North	Azor Dam	2	0	50000	15000	3000	12000	30
Chitral	Drosh South	Shah Nigar	2	0	50000	0	0	0	0
Chitral	Drosh South	Shah Nigar	1	0	25000	1250	0	1250	5
Chitral	Drosh South	Azor Dam	1	3000	22000	0	0	0	0
Chitral	Drosh South	Azor Dam	4	0	100000	0	0	0	0

Chitral	Booni	Lasht Booni	1	0	25000	18750	12300	6450	75
Chitral	Booni	Booni Lasht	1	0	25000	10000	6780	3220	40
	Total		44	38900	1061100	391409	188330	203079	
	Average								31.08
	%								
Buner	Chamla	Thothalai	16	158000	302000	286900	218000	68900	95
Buner	Chamla	Maskipur	2	0	50000	40000	0	40000	80
Buner	Chamla	Maskipur	4	0	100000	65000	0	65000	65
Buner	Chamla	Nawagai	2	0	55000	49500	30000	19500	90
Buner	Daggar	Apin Pand Daggar	80	1000000	1100000	990000	920000	70000	90
Buner	Daggar	Yakh Dara Matwanai	20	125850	459793	436803.35	450000	13196.65	95
	Total		124	1283850	2066793	1868203.35	1618000	276596.65	
	Average								85.8333
	%								3333
Dir kohistan	Sheringal	Bar Dog	6	40000	110000	104500	2000	102500	95
Dir kohistan	Patrak	Deoon Patrak	10	2800	177200	159480	135200	24280	90
Dir kohistan	Patrak	Deoon Patrak	10	0	250000	125000	0	125000	50
Dir kohistan	Patrak	Deoon Patrak	10	0	250000	125000	0	125000	50
	Total		36	42800	787200	513980	137200	376780	
	Average								71.25
	%								
Kalam	Behrain South	Dabargai	6	18000	162000	180000	100000	80000	100
Kalam	Behrain South	Badalai	10	250000	70000	0	0	0	100
Kalam	Behrain South	Jarray	10	0	280000	250000	100000	150000	100
Kalam	Behrain South	Damana	24	0	753000	600000	480000	120000	100
Kalam	Behrain NOrth	Baram Patay	18	0	450000	382500	76500	306000	100
Bunir	Total		68	268000	1715000	1412500	756500	656000	
Bunir	Average				0	0	0	0	100
Bunir	%				0	0	0	0	
lower Dir	Chakdara	Darbar	2		45356	36284.8	34017	2268	80
lower Dir	Chakdara	Darbar	1		24000	22560	13440	9120	94
lower Dir	Chakdara	Darbar	2		60750	52852.5	48600	4253	87

lower Dir	Chakdara	Chakdara	4		100000	96500	91000	5500	96.5
lower Dir	Chakdara	Darbar	2		42550	41699	40848	851	98
lower Dir	Chakdara	Darbar	2		47454	41996.79	33597.432	8399	88.5
lower Dir	Timergara	Thrai	2		41326	38019.92	30415.936	7604	92
lower Dir	Timergara	Thrai	2		59660	57273.6	51546.24	5727	96
lower Dir	Timergara	Thrai	12		300000	282000	211500	70500	94
lower Dir	Timergara	Bajauro	2		71096	68963.12	59997.9144	8965	97
lower Dir	Timergara	Thrai	7		153629	150556.42	108400.6224	42156	98
lower Dir	Jandool	Gambeer	20		500000	475000	142500	332500	95
lower Dir	Chakdara	Gula Trap	4		105000	97650	73237.5	24413	93
lower Dir	Chakdara	Tekni Payeen	2		42132	29071.08	10174.878	18896	69
lower Dir	Chakdara	Tekni Payeen	2		53035	40836.95	39203.472	1633	77
lower Dir	Total		66	0	1645988	1531264.18	988478.9948	542785.1852	
lower Dir	Average				0	0	0	0	90.33
lower Dir	%				0	0	0	0	
	Total		627	2674550	15204081	12472406.53	8499143.995	3999655.835	
	Average								79.17
	%								
Siran	Hillkot	Karmang	1		25000	20000	19000	1000	80
Siran	Hillkot	Karmang	2		50000	48500	45000	3500	97
Siran	Lower siran	Makhria	12		337578	295718.328	270062.4	25656	87.6
Siran	Lower siran	Tarnain Baffa	10	70000	196797	186957.15	177117.3	9840	95
Siran	upper siron	Kalas Nawaz Abad	2		38640	30757.44	9003.12	21754	79.6
Siran	upper siron	Kare Cham	2	34348	25652	18649.004	11189.4024	7460	72.7
Siran	upper siron	Kiare Nawaz Abad	2	0	50000	32750	3275	29475	65.5
Siran	Mansehra	Commece College	10		256916	192687	57806.1	134881	75
Siran	Hillkot	Single Kot	1	0	19785	15234.45	1523.445	13711	77
Siran	Total		42	104348	1000368	841253.372	593976.7674	247276.6046	
Siran	Average								81.04
Siran	%								
Haripur	Haripur	Gher Khan	4	0	95000	66500	53200	13300	70
Haripur	Haripur	Gujjar Mora	10	23000	207000	186300	149040	37260	90
Haripur	Haripur	Mirpur	2	0	46000	43700	42826	874	95

Haripur	Haripur	Doya Khushki	12	0	300000	255000	122400	132600	85
Haripur	Haripur	Qazian	16	150000	250000	245000	142100	102900	98
Haripur	Makhanial	Ghambeer	4	10000	90000	85500	68400	17100	95
Haripur	Ghazi	Jalo Bhai	25	70000	555000	538350	484515	53835	97
Haripur	Khanpur	Tarnava	14	0	350000	227500	45500	182000	65
Haripur	Total		87	253000	1893000	1647850	1107981	539869	
Haripur	Average								86.88
Haripur	%								
Hazara tribe	Battgram	Ajmeera	2	0	38744	27353.264	8205.9792	19147	70.6
Hazara tribe	Battgram	Oghoz Banda	16		189550	155431	23314.65	132116	82
Hazara tribe	Battgram	Oghoz Banda	12		313216	255584.256	15335.05536	240249	81.6
Hazara tribe	Allai	Byari	20		380231	304565.031	185784.6689	118780	80.1
Hazara tribe	Allai	Bagh Rashank	6		219866	201836.988	151377.741	50459	91.8
Batagaram	Total		56	0	1141607	944770.539	384018.0945	560752.4445	
Batagaram	Average								81.22
Batagaram	%								
Agror tanawal	Shergarh	Bela Tanowa	5	0	103556	94235.96	82844.8	11391	91
Agror tanawal	Shergarh	Bela Tanowa	4	0	97466	93567.36	9746.6	83821	96
Agror tanawal	Shergarh	Chansair	2	0	34775	20865	19126.25	1739	60
Agror tanawal	Agror	Charan Goda	2	0	32180	18020.8	3218	14803	56
Agror tanawal	Gidarpur	Chowki	4	9000	91000	77805	64610	13195	85.5
Agror tanawal	Gidarpur	Chowki	2	5000	30500	23942.5	15323.2	8619	78.5
Agror tanawal	Gidarpur	Chowki	5	9000	241000	216900	140985	75915	90
Agror tanawal	Gidarpur	Kakoo	8	63000	137000	100010	23002.3	77008	73
Agror tanawal	Oghi	Arbora	1	0	15000	9300	6510	2790	62
Agror tanawal	Shergarh	Kubahi	4	99000	46900	43429.4	6080.116	37349	92.6
Agror tanawal	Total		37	185000	829377	698076.02	371446.266	326629.754	
Agror tanawal	Average								78.46
Agror tanawal	%								
Upper kohistan	Komila	Koogi Seo	2	45000	0	0	0	0	0
Upper kohistan	Total		2	45000	0	0	0	0	
Upper kohistan	Average								0
Torghar	Kandar	Bakyana	1		10956	7121.4	6573.6	547.8	65
Torghar	Kandar	Bakyana	1		22120	11723.6	8848	2875.6	53

Torghar	Kandar	Bakyana	2		28800	18000	17856	144	62.5
Torghar	Kandar	Kyanai	2		76098	70771.14	49844.19	20927	93
Torghar	Juddbah	Zizari	2		46834	41682.26	39808.9	1873	89
Torghar	Juddbah	Zizari	6		123394	115990.36	86992.77	28998	94
Torghar	Juddbah	Zizari	4		87181	74975.66	68977.6072	5998	86
Torghar	Juddbah	Zizari	3		67851	57673.35	53636.2155	4037	85
Torghar	Juddbah	Suri Qamar	3		54960	41769.6	16707.84	25062	76
Torghar	Juddbah	Dour Payen	5		107986	89628.38	82906.2515	6722	83
Torghar	Juddbah	Dour Bala	6		108482	88955.24	73832.8492	15122	82
Torghar	Juddbah	Dour Bala	2		47154	43381.68	36874.428	6507	92
Torghar	Total		37						
Torghar	Average								80.04
	Total		261	587348	4864352	4131949.93	2457422.128	1674527.803	
	Average					1			67.94
Unhar Watershed	Battgram	Quinchbori	4		100000	93000	71610	21390	93
Unhar Watershed	Battgram	Quinchbori	2		60000	57600	25920	31680	96
Unhar Watershed	Battgram	Quinchbori	2		53000	47700	4770	42930	90
Unhar Watershed	Allai	Rashank Bandi	4		110308	99277.2	95306.112	3971	90
Unhar Watershed	Allai	Batkol	3		75000	72750	70567.5	2183	97
Unhar Watershed	Allai	Batkol	3		75000	71250	68400	2850	95
Unhar Watershed	Allai	Batkol	4		100000	95000	93100	1900	95
Unhar Watershed	Allai	Shagai Rashang	5		174801	157320.9	149454.855	7866	90
Unhar Watershed	Allai	Shagai Rashang	4		97761	86029.68	68823.744	17206	88
Unhar Watershed	Allai	Rashang Bandi	4		102000	94860	85374	9486	93

Unhar Watershed	Allai	Rashang Bandi	11		208034	135222.1	81133.26	54089	65
Unhar Watershed	Battgram	Maidan	3		98000	68600	54880	13720	70
Unhar Watershed	Battgram	Maidan	4		61735	33954.25	0	33954	55
Unhar Watershed	Total		53	0	1315639	1112564.13	869339.471	243224.659	
Unhar Watershed	Average								85.92
Daur watershed	Abbottabad	Lehndi Daur	7	24000	111000	99900	79920	19980	90
Daur watershed	Abbottabad	Akhoon Bandi	1	0	24500	23275	18620	4655	95
Haripur	Abbtabad	Akhoon bandi	2	0	50000	32000	22400	9600	64
Haripur	Abbtabad	Bastisheer khan	1	9500	15500	15190	14126.7	1063.3	98
Daur watershed	Havelian	Akhoon Bandi	2	12000	22500	19800	11880	7920	88
Daur Watershed	Total		13	45500	223500	190165	146946.7	43218.3	
	Average								87
Kohistan W/shed	Besham	Damoarai	6	30000	150000	180000	169000	11000	98
Kohistan W/shed	Besham	Naway kalay shapoor	20	210000	107000	507000	89100	207900	85
Kohistan W/shed	Besham	shang	3	35000	125000	76500	76000	0	98
Kohistan W/shed	Besham	shang budha	10	0	136000	256000	240000	16000	95
Kohistan W/shed	Besham	Banjat	13	75500	251300	310460	211464	23496	98
Kohistan W/shed	Puran	Mairagai	12	270000	50000	280000	0	10000	98
Kohistan W/shed	Puran	Aloch	6	150000	50000	50000	0	0	100
Kohistan W/shed	Puran	Kotkay	2	6500	53500	52000	11375	34125	80
Kohistan W/shed	Puran	Sunoke	5	38000	102000	122500	16900	67600	87
	Total		77	815000	1024800	1834460	813839	370121	
	Average								93.22
Buner watershed	Pacha	Bhai Kalay	9	92000	148000	140600	44000	96600	95
Buner watershed	Pacha	Bhai Kalay	7	95320	89680	85196	79680	5516	95
Buner watershed	Pacha	Talan Daggar	5	42000	108000	102600	98000	4600	95
Buner watershed	Daggar	Shanti Nagar	10	20500	299500	284525	282000	2525	95
Buner watershed	Daggar	Najo Cheena	12	207000	103000	97850	96000	1850	95

Buner watershed	Daggar				0	0		0	
Buner watershed	Daggar				0	0		0	
Buner watershed	Daggar	Kal Derai	14	200000	200000	190000	135000	55000	95
	Total		43	456820	748180	710771	599680	111091	
	Average								95
	Total		186	1317320	3312119	3847960.13	2429805.171	767654.959	
	Average								90.29
	Total		1435	6182818	30870952	26331593	17257720	8449765	
	Average								91.32

9.17 Appendix M (II) Contact detail of Private Tube Nursery Growers

Division	Range/Sub-Division	Name of nry grower	NIC Number	Location	Units allocated
Peshawar	Peshawar	Muhammad Wisal, Qazi Mudasir, Nadeem Khan	17201-7530392-7, 17201-8730941-3, 17201-0370937-5	Akbar Pura	12
Peshawar	Peshawar	Waheed Khan	17201-5506683-5	Akhun Panju Baba	2
Peshawar	Peshawar	Kazim Raza, Arshid Ali	17201-2267546-3	Akbar Pura	4
Peshawar	Peshawar	Shaukat Ali, Rahatullah, Rehman Gul	17301-2508044-3	Tarnab Faram	32
Peshawar	Peshawar	Yasir, Javed	17201-2127277-3	Chugal Pura	4
Peshawar	Peshawar	Pervaiz Hussain	17301-3957154-9	Jiggu Ghufuran Abad	20
Peshawar	Charsadda	Mir Alam Shah	17101-1013903-1	Toranzai	5
Peshawar	Charsadda	Pervaiz, Saman Jan	0	Ziam	4
Peshawar	Charsadda	Abdul Samad Khan	0	Umerzai	40
Peshawar	Nowshera	Khalid Khan Khattak	0	Manki Sharif	40
Peshawar	Nowshera	Shujat Khan	61101-1962700-1	Manki Sharif	40
Mardan	Katlang	Kifayat Ullah, Rahim Ullah, Yaseen, Zubair	0	Gulli Bagh	6
Mardan	Katlang	Zafar Iqbal	0300 9059492	Kunj Ghareeb Abad	40
Mardan	Katlang	Farooq, Mudasir, Rrshad	16101-7906060-5 16101-4833997-1 16101-4803004-7	Katlang Bazar	4
Mardan	Katlang	Sitara, Waseema, Abdul Wahab	0303 8391677	Gulli Bagh	6
Mardan	Katlang	Jawad, Sufaid , Ameen, Husn UI Mab	0315 5723410	Gulli Bagh	6
Mardan	Mardan	Nadeem	0	Gujjar Ghari	2
Kohat	Kohat	Liaqat	0	Kharmati	4
Kohat	Kohat	Ehsan	0	Bora Gari	2
Kohat	Kohat	Muhammad Ibrahim	0	Bora Gari	4
Kohat	Kohat	Mujahid Amin	14301-7574257-9	Ghumbat	2
Kohat	Kohat	Saeed	14301-1338626-9	Ghumbat	2
Kohat	Karak	Jamshed Khan, Imtiaz Khan, Allah Dad, Muhammad Rafiq	14203-26851129, 14203-6696722-9, 14203-3092231-7 14203,1241948-1	Khamedan	80
Swat	Mingora	Rehmat Ali	0	Mjurad Abad Manglawar	2
Swat	Mingora	Usman Ghani	15602-0397365-1	Murad Abad Manglawar	4
Swat	Mingora	Mushtaq	15602-3608698-1	Maira Charbagh	2
Swat	Mingora	Abdullah Shah	0	Maira Charbagh	4
Swat	Mingora	Amir Bashar	0	Manglawar	4
Swat	Mingora	Nouman Khan, Wasim Khan	0	Dewana Baba Charbagh	8
Swat	Mingora	Amjad Ali	0	Manglawar	4
Swat	Matta	Fatima Bibi	15601- 0107413-2	Dureshkhela	4

Swat	Matta	Muhammad Karam	15601-4863858-1	Dureskhela	12
Swat	Matta	Mian Bahadar Shah	15601-1046101-5	Garai Chopriyal	8
Swat	Matta	Liaqath Shah, Akber Hussain	15601-8361656-3	Baraim Gora	10
Swat	Matta	Khurshaid	15601-2370049-9	Chupriyal Garai	4
Swat	Matta	Muhammad Sher	15601-1007805-3	Dureskhela	11
Swat	Kabal	Rehmatah Ali	15602-2973823-9	Ningolai	3
Swat	Kabal	Muthawakil Khan	15602-0533372-9	Ningolai	4
Swat	Kabal	Fayaz Ahmad, Riaz Ahmad	15602-3188331-5, 15602-2333543-9	Ningolai Malak Abad	8
Swat	Kabal	Saeedullah Khan	15602-6824733-3	Khairabad	4
Swat	Kabal	Habibullah, Hamidullah	15602-3923541-9, 15602-4559751-5	Khairabad	6
Swat	Fatehpur	Riaz Ali Khan, Saeedullah Jan 15502-0504583-7,	0	Jukhtai	14
Swat	Fatehpur	Saddam Hussain	15602-8724533-5	Jukhtai	4
Swat	Fatehpur	Ihsanullah, Said Alim Khan	155602-0516665-5	Jukhtai	8
Alpuri	Alpuri	Muhammad Nisar, Hussain Akber	15505-2113575-9, 15505-0213827-7	Chawga Chorlangai	32
Alpuri	Alpuri	Nasrullah	15505-6184207-1	Chawga Chorlangai	3
Alpuri	Alpuri	Shahi Gulfam	15505-4396640-8	Chawga Chorlangai	13
Alpuri	Alpuri	Ikramullah, Niaz Muhammad, Habibullah	15502-8891594-7, 15502-2005898-7, 15502-2008030-9	Shang (Booda)	10
Alpuri	Alpuri	Noorul Hassan, Noorul Ali	15501-1301121-9, 15501-0853387-5	Shang	16
Alpuri	Alpuri	Hassan Taj	15502-7375579-7	Shang	8
Malakand	Dargai	Azra Bibi, Zakiya Begum	15401-4205524-4, 15402-7834792-8	Dargai	5
Malakand	Dargai	Mukamil Shah, Majid Ali, Atique, Atta Ullah, Ijaz Raheem, Mohd Tahir, Ghulam Mohd, Haji Bahadur, Yousaf Khan, Mohd Farooq, Pervez Ahmad, Abdul Wahab	0	Dargai	60
Malakand	Dargai	Aftab Gul	15401-6525538-1	Dargai Phatak	4
Malakand	Dargai	Syed Mohammad Ayaz	0	Gcp Ghee Mill Dargai	4
Malakand	Dargai	Sohail Sameer, Sultan Zeb	15701-1226690-7, 15401-8350775-5	Dargai	6
Chitral	Chitral	Niaz Wali Shah	15201-9640424-9	Kuro Ayun	8
Chitral	Chitral	Mumtaz Ahmad	15201-7189985-9	Sahan Ayun	8
Chitral	Chitral	Atiya	not available	Singoor	2
Chitral	Chitral	Abida Shareef	15201-1411256-8	Singoor	2
Chitral	Chitral	Muhammad Yahya	15201-3464620-3	Sahan Ayun	4
Chitral	Drosh North	Niamat Kareem	15201-2890704-3	Kesu	8
Chitral	Drosh North	Hafeeza Jabeen	15201-8948877-6	Azor Dam	2
Chitral	Drosh South	Waqar	15201-2324754-7	Shah Nigar	2
Chitral	Drosh South	Faheemullah	15201-8951962-1	Shah Nigar	1
Chitral	Drosh South	Aftab Ahmad	15201-1784749-1	Azor Dam	1
Chitral	Drosh South	Hussain Ahmad	not available	Azor Dam	4

Chitral	Booni	Aziz Gul	15202-0808626-6	Lasht Booni	1
Chitral	Booni	Saba Gul	15202-3704931-9	Booni Lasht	1
Buner	Chamla	Jawher Murad, Ghulam Akber, Tasleem Muhammad, Ameer Aman, Farooq Ali, Abass, Waqas, Aladad.	15101-9692317-9, 15101-8175529-7, 151015798251-3, 15101-0418200-7, 151019788868-1, 15101-7702162-5, 15101-7703017-5, 15101-6322000-3	Thothalai	16
Buner	Chamla	Gulzaman Shah	15104-0346271-9	Maskipur	2
Buner	Chamla	Muhammad Zubair	15101-0816625-5	Maskipur	4
Buner	chamla	Syed Mehboob Ali	15101-0357052-5	Nawagai	2
Buner	Daggar	Bakhte Raj, Fakhre Alam, Akber Hussain, Bakth Sher.	15101-3391941-1, 15101-0237122-7, 15101-1284927-7, 15101-4667847-5.	Apin Pand Daggar	80
Buner	Daggar	Faisal Khan, Aslam Khan.	17301-3202358-3, 15191-0413618-9	Yakh Dara Matwanai	20
Dir kohistan	Sheringal	Taj Wali	15701-1162883-9	Bar Dog	6
Dir kohistan	Patrak	Shaokat Hayat	15701-1191683-3	Deoon Patrak	10
Dir kohistan	Patrak	Muhammad Islam	15702-2491339-5	Deoon Patrak	10
Dir kohistan	Patrak	Muhammad Ali	15701-1162983-1	Deoon Patrak	10
Kalam	Behrain South	Hasham Khan, Rasool Khan, Ali Mehmood	15602-0508773-3, 15602-0313999-1, 15602-4887088-3	Dabargai	6
Kalam	Behrain South	Shahi Parwar, Zahida	15602-7439451-6, 15602-0215103-8	Badalai	10
Kalam	Behrain South	Shah Nazar, M Nasir	15602-0358996-3, 15602-5778214-7	Jarray	10
Kalam	Behrain South	Fzal Mabood, Fazal Wahab. M.Irshad	15602-9468932-9, 15602-0373950-1, 15602-9075321-1	Damana	24
Kalam	Behrain North	Abdul Qayum, M.Jamil, Qaiser Karim	15602-0465429-5, 15602-9056159-5, 15605-0343745-5	Baram Patay	18
lower Dir	Chakdara	Naseer Khan	16101-3836078-1	Chakdara	4
lower Dir	Chakdara	Skindar Zaman	15307-8237202-7	Darbar	2
lower Dir	Chakdara	Bahr Rawan	15302-0874476-1	Darbar	2
lower Dir	Timergara	Hazrat Hayat	N/A	Thrai	2
lower Dir	Timergara	Umer Khitab	N/A	Thrai	2
lower Dir	Timergara	Bakhtiar Khan	N/A	Thrai	12
lower Dir	Timergara	Shakeel Khan	15302-7991458-1	Bajauro	2
lower Dir	Timergara	Muhammad Ghulam	N/A	Thrai	7
lower Dir	Jandool	Mehboob Yar Asfandiyar Sajjad	15302-0887756-7 15302-0885250-7	Gamber	20
lower Dir	Chakdara	Mehboob Ur Rehman	15302-0947874-7	Gula Trap	4
lower Dir	Chakdara	Fahad Shah	15307-7800730-1	Tekni Payeen	2
lower Dir	Chakdara	Shabnam	15307-6783034-8	Tekni Payeen	2
Siran	Hillkot	M Rafiq	13503-7193927-3	Karmang	1
Siran	Hillkot	M Nazeer	13503-0532329-7	Karmang	2

Siran	Lower siran	Haji Zakir Hussain Ansab, Anjum	13503-0491297-3, 13503-0645367-7	Makhria	12
Siran	Lower siran	M.Atif, Nisar Ahmed Nasiba Bibi	13503-4292836-1 13503-7243246-1 13503-7464861-0	Tarnain Baffa	10
Siran	upper siron	Asad	13503-6187593-5	Kalas Nawaz Abad	2
Siran	upper siron	Riyasat Khan	13503-4228317-7	Kare Cham	2
Siran	upper siron	M. Arif	13503-8059059-1	Kiare Nawaz Abad	2
Siran	Mansehra	Shabbir Rafiq Imtiaz Ahmed	13504-9501743-9 13504-4620282-7 13504-1998138-1	Commece College	10
Siran	Hillkot	Sajid Shah	13503-0562638-9	Single Kot	1
Haripur	Haripur	Basharat Ali, Khuram Shehzad	13302-0468730-3 13302-2217039-7	Doya Khushki	12
Haripur	Haripur	Sajad Ahmad, Fakhre Alam	42501-232812-5	Qazian	16
Haripur	Makhanial	Haji Aftab Gul	13101-0823872-3	Ghambeer	4
Haripur	Ghazi	Muhammad Nawaz, Tariq, Waqar, Khalid, Amir, Ayaz	13301-1350832-3 13301-3534746-7 13301-5660314-1	Jalo Bhai	25
Haripur	Khanpur	Abid Khan, Liaqat Khan, Mohd Maqsood	13302-0433995-1 13302-3913384-9 13302-8436155-1	Tarnava	14
Hazara tribe	Battgram	Mohabat Khan	13202-0752134-5	Ajmeera	2
Hazara tribe	Battgram	Rafiq Sherazi, Muhammad Issa, Riaz Ali Shah, Faiz-Ul-Islam	61101-8499357-9, 13503-6406782-9, 13302-0596808-9, 13302-0784873-5	Oghoz Banda	16
Hazara tribe	Battgram	Samiullah Shah, Sayed Ullah Shah, Majid Shah	13202-8860006-5, 13202-3680145-1, 13202-6248032-1	Oghoz Banda	12
Hazara tribe	Allai	Bakhmarim, Bakhmunir, Sultan Munir, Muhammad Rauf	13201-1810623-7, 13201-1814190-7, 13201-1812802-5, 13201-1839889-1	Byari	20
Hazara tribe	Allai	Saif-Ul-Islam	13201-4307583-5	Bagh Rashank	6
Agror tanawal	Shergarh	Muhammad Farooq		Bela Tanowa	5
Agror tanawal	Shergarh	Israr Ahmed	13504-6676925-3	Bela Tanowa	4
Agror tanawal	Shergarh	Awais	13504-0455118-1	Chansair	2
Agror tanawal	Agror	Taj-Un-Nisa	13504-7156023-0	Charan Goda	2
Agror tanawal	Gidarpur	Habib-Ur-Rehman Riyasat Raza Hanif Tanveer	0	Chowki	4
Agror tanawal	Gidarpur	Ali Farman	0	Chowki	2
Agror tanawal	Gidarpur	Saddam Hussain	0	Chowki	5
Agror tanawal	Gidarpur	Noor Ahmed M. Younas M. Fayyaz Umar Zada	0	Kakoo	8
Agror tanawal	oghi	Shahzad	0	Arbora	1
Agror tanawal	Shergarh	M Zakir	13504-6791332-5	Kubahi	4
Upper kohistan	Komila	Fazal Raheem	13401-6388077-5	Koogi Seo	2
Torghar	Kandar	Farooq	13502-0685930-1	Bakyana	1
Torghar	Kandar	Bakht Zareen Shah	13504-2260119-7	Bakyana	1

Torghar	Kandar	Rehmat Hussain	42101-3196930-7	Bakyana	2
Torghar	Kandar	Khabir Dad	13504-5421076-7	Kyanai	2
Torghar	Juddbah	Kifayatullah	42401-6229547-7	Zizari	2
Torghar	Juddbah	Fazal-Ur-Rehman Noor Nabi	42401-6165001-1 13601-0488503-5	Zizari	6
Torghar	Juddbah	Abdul Wali Shah	13601-0503128-1	Zizari	4
Torghar	Juddbah	Khaleelullah	13601-0499993-7	Zizari	3
Torghar	Juddbah	Gul Khiran Syed Gulab Shah	13504-2510609-3 42201-2442764-5	Suri Qamar	3
Torghar	Juddbah	Aurang Zaib Gulzar Khan	42201-7144519-5 13504-1324903-3	Dour Payen	5
Torghar	Juddbah	Sadbar Jamal	13504-2239781-5 13504-4171286-7	Dour Bala	6
Torghar	Juddbah	Umar Ali	42101-0709858-7	Dour Bala	2
Unhar Watershed	Battgram	Muhammad Anwar	13202-6072227-3	Quinchbori	4
Unhar Watershed	Battgram	Kachkol	13202-0751850-1	Quinchbori	2
Unhar Watershed	Battgram	Ahmed Khan	13202-0782508-3	Quinchbori	2
Unhar Watershed	Allai	Shams-Ul-Islam	13202-7636787-1	Rashank Bandi	4
Unhar Watershed	Allai	Ahmed Khan	13201-4057324-1	Batkol	3
Unhar Watershed	Allai	Sadam Hussain	13201-4117761-3	Batkol	3
Unhar Watershed	Allai	Khursheed Anwar	13201-1946215-9	Batkol	4
Unhar Watershed	Allai	Gohar-Ul-Islam	13201-3289295-7	Shagai Rashang	5
Unhar Watershed	Allai	Muhammad Iqbal	13201-9566124-9	Shagai Rashang	4
Unhar Watershed	Allai	Muhammad Munir	13201-1808812-3	Rashang Bandi	4
Unhar Watershed	Allai	Sadar-Ul-Islam, Shahid-Ul-Islam, Saeed-Ul-Islam	13201-5849003-5 13201-2261391-9 13201-4366301-1	Rashang Bandi	11
Unhar Watershed	Battgram	Juma Gul	0	Maidan	3
Unhar Watershed	Battgram	Ayub	0	Maidan	4
Daur watershed	Abbottabad	Muhammad Nasim, Sheraz,	13302-0475598-9 13302-1539309-1	Lehndi Daur	7
Daur watershed	Abbottabad	Shaheen Akhtar	13302-0347468-0	Akhood Bandi	1
Haripur	Abbtabad	Muhammad Qasim	13302-6767245-9	Akhood Bandi	2
Haripur	Abbtabad	Muhammad Abbas	13302-4196044-9	Bastisheer Khan	1
Daur watershed	Havelian	Naheeda Bibi, Rasheeda	13302-0431691-6	Akhood Bandi	2
Kohistan W/shed	Besham	Iftikhar, Ijaz	15501-2283804-5, 15501,0802103-5	Damoarai	6
Kohistan W/shed	Besham	Ikramul Haq, Navidullah, Sohail, Inamul Haq, Wasim	15501-2267433-5, 15501-1225947-9, 15501-2953232-7, 15501-7631740-3, 15501-1834423-3	Naway Kalay Shapoor	20
Kohistan W/shed	Besham	Umar Hayat	15502-9021169-3	Shang	3
Kohistan W/shed	Besham	Faiz Muhammad, M.Riaz, Tariq Aziz, Ismail,	15502-0369347-3, 155022005890-3, 15502-6652027-1, 15502-2305839-7	Shang Budha	10

Kohistan W/shed	Besham	M.Azam, Ziaul Haq, Umar Khan, M.Hanif, Fakhrulhasan	15503-4643426-9, 15501-9001278-1, 15501-3787676-1, 15503-2666225-5, 15501-2253491-1	Banjat	13
Kohistan W/shed	Puran	Nawab Ali,Nisar, Askarullah,	42301-9399677-5, 15501-4044590-7, 15501-0363696-1	Mairagai	12
Kohistan W/shed	Puran	Abdul Qudos,Islam,	15505-5740156-7,	Aloch	6
Kohistan W/shed	Puran	Bahar Ali	15505-1791513-9	Kotkay	2
Kohistan W/shed	Puran	Syed Abdur Rauf, Abdul Qudos	15505-8898520-9, 15505,6473317-7	Sunoke	5
Buner watershed	Pacha	Zahid Ali, Gowher Ali	15101-0923374-9, 15101-5140690-7	Bhai Kalay	9
Buner watershed	Pacha	Alam Khan,Ataullah	15101-6009449-5,	Bhai Kalay	7
Buner watershed	Pacha	Bakht Sher	0	Talan Daggar	5
Buner watershed	Daggar	Arshad, Shakir	15101-0423377- 3,15101-2783195-7	Shanti Nagar	10
Buner watershed	Daggar	Darul Amin,Shermoor Khan,Muhammad Faraz	151011-0119093-1, 15101-9717471-1, 15101-0357279-5	Najo Cheena	12
Buner watershed	Daggar	Abduljalil,Najeebullah, Abdu rahman,Habibullah,Syed Zafar Shah,Syed Bahadar,Zarjamil,Javedullah	15101-62355278-7, 15101-8368425-7, 15101-3553773-1, 15101-0357768-1, 15101-0354586-8, 15101-0357764-3, 15101-4528676-1	Kal Derai	14

9.18 Appendix-N (I): Details of private nurseries - Bare Rooted

Division	Range/Sub-Division	Location	Units	Stock					Survival Rate
				Distributed	Available	Net Stock	Plantable	Unplantable	
Peshawar	Peshawar	Chughal Pura	5	0	125000	112500	103500	9000	90
Peshawar	Peshawar	Akbar Pura	20	0	500000	475000	427500	47500	95
Peshawar	charsadda	Gul Rang	1	0	25000	22500	21375	1125	90
Peshawar	charsadda	Sarki Masharan	8	0	200000	190000	171000	19000	95
Peshawar	charsadda	Zarbab Ghari	8	0	200000	190000	180500	9500	95
Kohat	Kohat	Bora garri	4	10000	90000	83000	56440	26560	83
Total			46	10000	1140000	1073000	960315	112685	
Average									91.33
%									
Haripur	Haripur	Gher Khan	4	0	85000	83300	79135	4165	98
Haripur	Haripur	Gujjar Mora	4	0	100000	90000	76500	13500	90
Haripur	Khanpur	Tarnawa	4	20000	80000	98000	98000	0	98
Siran	Upper siran	Kare cham	1	25000	0	24750	24502.5	247.5	99
Siran	Upper siran	kalas nawaz abad	4	114000	0	112860	111731.4	1128.6	99
Siran	Upper siran	Jabori	1	25000	0	24750	24502.5	247.5	99
Siran	Lower siran	Makriya	10	250000	0	247500	245025	2475	99
Hazara Tribe	Battgram	Magri	2	0	47615	41901.2	38968.116	2933.084	88
Hazara Tribe	Battgram	Ajmira	1	0	22928	20635.2	17952.624	2682.576	90
Hazara Tribe	Pashto	Roof kanai	2	0	41507	38601.51	29337.148	9264.3624	93
Hazara Tribe	Pashto	telos	2	0	22441	12342.55	3702.765	8639.785	55
Agror Tanawal	Agror	Dara Bella	2	0	53000	50880	50371.2	508.8	96
Agror Tanawal	Shergarh	Bela Tanowa	5	0	116744	109739.36	106447.18	3292.1808	94
Agror Tanawal	Shergarh	Bela Tanowa	4	28000	71000	96030	94109.4	1920.6	97
Agror Tanawal	Shergarh	Chansair	2	0	45000	41535	34889.4	6645.6	92.3
Agror Tanawal	Gidarpur	Chowki	2	11600	28000	36036	21981.96	14054.04	91
Agror Tanawal	Gidarpur	Malhoo	2	43000	8000	42840	35985.6	6854.4	84
Agror Tanawal	Gidarpur	Chowki	2	50000	0	0	0	0	0
Agror Tanawal	Agror	Charrangoda	3	0	65000	61750	54340	7410	95
Agror Tanawal	Oghi	Arbora	2	55830	0	0	0	0	0
Agror Tanawal	Shergarh	Chansair	2	36955	13000	47307.385	37845.908	9461.477	94.7
Agror Tanawal	Oghi	Bandi Sadiq	2	47850	0	0	0	0	0
Agror Tanawal	Gidarpur	Malhoo	2	0	50000	46500	44175	2325	93

lower Kohistan	Patan	Daag Segiyon	2	36123	0	0	0	0	0
lower Kohistan	Patan	Seri Jijal	1	20000	0	0	0	0	0
lower Kohistan	Patan	Seri Jijal	2	47000	0	0	0	0	
Upper Kohistan	Komila	Seglo Seo	4	85000	0	0	0	0	0
Torgar	Kandar	Laid Akazai	2	10000	30000	37200	35340	1860	93
Torgar	Kandar	Backyani	2	0	50610	42006.3	38225.733	3780.567	83
Torgar	Kandar	Kyanai	3	0	75000	68250	58012.5	56272.125	91
Torgar	Juddbah	Dour Payen	1	0	23000	21850	21194.5	20558.665	95
Torgar	Juddbah	Dour Bala	1	12000	12000	19440	13802.4	13388.328	81
Torgar	Juddbah	Dour Bala	2	0	41000	32800	10168	9862.96	80
Torgar	Juddbah	Dour Bala	1	0	23230	18119.4	11415.222	11072.765	78
Torgar	Juddbah	Dour Payen	1	15000	10000	24000	23520	22814.4	96
Total			87	932358	1114075	1590923.9	1441181.1	237365.32	
Average									74.76
%									
Malakanad	Batkhela	Thana By Pass	2	0	50000	49000	45080	3920	98
Malakanad	Batkhela	Alladand	4	0	100000	95000	90250	4750	95
Malakanad	Batkhela	Alladand	2	0	50000	47500	47500	0	95
Malakanad	Batkhela	Alladand	6	0	150000	135000	132300	2700	90
Malakanad	Batkhela	Jalawani	2	0	50000	42500	42500	0	85
Alpuri	Alpuri	Sundvi Sanila	6	0	125000	112500	102500	10000	90
Alpuri	Karora	Chakat	6	0	150000	142500	140350	2150	95
Buner	Chamla	maskipur	2	0	45000	44100	41500	2600	98
Buner	Chamla	korea	8	0	200000	196000	175000	21000	98
Buner	Chamla	koz kalai	1		25000	23500	17000	6500	94
Buner	Daggar	manyari kokand	4	0	100000	100000	90500	9500	100
Buner	Daggar	spin pand	2	0	50000	50000	45000	5000	100
Swat	Mingora	qala charbagh	2	0	50000	50000	37000	13000	100
Swat	Fatehpur	khairabad	2	0	50000	49000	40550	8450	98
Swat	Fatehpur	jukhtai	6	0	150000	147000	126000	21000	98
Swat	Matta	sambat	2	0	50000	50000	46800	3200	100
Swat	Matta	chupriyal	2	30000	20000	49500	18300	31200	99
Swat	Kabal	ningolai	1		24000	23520	20900	2620	98

Kalam	Behrain south	kherabad	4	0	60000	60000	40000	20000	100
Kalam	Behrain south	Jarrai	2	0	50000	50000	42300	7700	100
Kalam	Behrain south	Jarrai	2	0	31500	31500	30000	1500	100
Chitral	booni	boombagh	3	0	18000	18000	18000	0	100
Chitral	booni	koraagh	1	0	25000	24000	15000	9000	96
Chitral	booni	reshon	1	0	14500	13775	12500	1275	95
Chitral	booni	dokandah	2	0	36000	34560	21000	13560	96
Chitral	darosh North	shah nigar	1	0	22875	22875	22875	0	100
Chitral	darosh North	kesu	7	0	114100	114100	114100	0	100
Lower Dir	Chakdara	Darbar	2	0	41206	35025.1	29070.833	5954.267	85
Lower Dir	Timergara	Thrai	2	0	32911	28303.46	26605.252	1698.2076	86
Lower Dir	Jandool	Monda	3	0	66832	60817.12	58992.606	57222.828	91
Lower Dir	Jandool	Hakeemabad	4	0	97756	92868.2	74294.56	72065.723	95
Lower Dir	Jandool	Hakeemabad	1	0	25000	24250	23037.5	22346.375	97
Total		0	95	30000	2074680	2016693.9	1786805.8	359912.4	
Average									96
%									
Daur Watershed	Abbottabad	Baltair	1	0	25000	22500	20700	1800	90
Daur Watershed	Abbottabad	Baltair	2	0	50000	44000	41800	2200	88
Daur Watershed	Abbottabad	Baltair	1	0	25000	24500	24500	0	98
Buner watershed	Daggar	gagra	4	36000	81300	111435	47700	63735	95
Buner watershed	Daggar	kol pikas	3	2000	103000	97650	86000	11650	93
Buner watershed	Pacha	bhai kalay	7	179000	0	179000	179000	0	100
Kohistan w.shed	Puran	Kotke	2	34200	0	34200	34200	0	100
Kohistan w.shed	Puran	sandoke aloch	3	0	75000	75000	69500	5500	100
Kohistan w.shed	Besham	snaway kalay shapoor	4	10250	70000	80250	55000	25250	100

Kohistan w.shed	Besham	Damoray	4	0	100000	100000	100000	0	100
Unhar watershed	Battgram	Maidan	2	0	50000	40000	32000	8000	80
Unhar watershed	Battgram	Kandai Khadang	1	0	44608	40147.2	39344.26	802.944	90
Unhar watershed	Battgram	Shaglan khadang	3	90000	11200	97152	97152	0	96
Unhar watershed	Shergarh	Bazagey	3	0	75000	72750	72022.5	727.5	97
Unhar watershed	Shergarh	Dogai	2	0	53000	47700	45792	1908	90
Total			42	351450	763108	1066284.2	944710.76	121573.44	
Average									94.47
%									
Total			270	1323808	5091863	5746902	5133012.6	831536.16	
Average									89.14
%									

9.19 Appendix N(II) Contact Detail of Pravite Bare-rooted Nursery Grower

Division	Range/Sub-Division	Name	CNIC	Location	Units
Peshawar	Peshawar	Shah Fahad	21203-1820843-1	Chughal Pura	5
Peshawar	Peshawar	Izhar Ul Haq	17301-2171220-9	Akbar Pura	20
Peshawar	charsadda	Niaz Ali	17101-5804137-9	Gul Rang	1
Peshawar	charsadda	Arshid, Nasrullah, Khesta Rehman	17101-0207529-7	Sarki Masharan	8
Peshawar	charsadda	Arif Jan, Nabi Gul	0	Zarbab Ghari	8
Kohat	Kohat	Wali Muhammad	0	Bora Garri	4
Haripur	Haripur	Habibur Rehman	13302-794556-7	Gher Khan	4
Haripur	Haripur	Shaukat Zaman	13302-0411425-9	Gujjar Mora	4
Haripur	Khanpur	Mohammad Salim	13501-1340989-9	Tarnawa	4
Siran	Upper siran	Riyasat Khan	13503-4228317-7	Kare Cham	1
Siran	Upper siran	Asad	13503-8167593-5	Kalas Nawaz Abad	4
Siran	Upper siran	Rafaqat Ali	13503-6983442-9	Jabori	1
Siran	Lower siran	Qaiser Naeem Farukh Naeematif Zakir	15503-9253064-3 13503-4044224-3 13503-8919389-7	Makriya	10
Hazara Tribe	Battgram	Syed Turab Shah, Rafique Sherazi	13202-8898996-1, 61101-8499357-9	Magri	2
Hazara Tribe	Battgram	Mohabat Khan	13202-0752134-5	Ajmira	1
Hazara Tribe	Pashto	Fatehullah	0	Roof Kanai	2
Hazara Tribe	Pashto	Arif Mehmoiod	0	Telos	2
Agror Tanawal	Agror	Jan Muhammad	13504-6554279-5	Dara Bella	2
Agror Tanawal	Shergarh		0	Bela Tanowa	5
Agror Tanawal	Shergarh	M. Iqbal	13504-2224282-5	Bela Tanowa	4
Agror Tanawal	Shergarh	Waqar	13504-7336024-5	Chansair	2
Agror Tanawal	Gidarpur	Tahir Khan Mehmood Khan	0	Chowki	2
Agror Tanawal	Gidarpur	Ahmed Khan Zafar Iqbal	0	Malhoo	2
Agror Tanawal	Gidarpur	M. Iqbal Sadiq Hussain	0	Chowki	2
Agror Tanawal	Agror	Jannat Gul	13504-6876295-5	Charrangoda	3
Agror Tanawal	Oghi	Shahzad	0	Arbora	2
Agror Tanawal	Shergarh	Babar	13504-7513518-5	Chansair	2

Agror Tanawal	Oghi	Babar	0	Bandi Sadiq	2
Agror Tanawal	Gidarpur	Bilal Hussain Kamran	0	Malhoo	2
lower Kohistan	Patan	Shahnawaz	13403-0165194-1	Daag Segiyon	2
lower Kohistan	Patan	Noorbaz	13403-0805263-7	Seri Jijal	1
lower Kohistan	Patan	Syed Jan	13403-4650093-1	Seri Jijal	2
Upper Kohistan	Komila	Syed Azeem	13401-9532956-3	Seglo Seo	4
Torgar	Kandar	Muhammad Rawan	0	Laid Akazai	2
Torgar	Kandar	Muhammad Hussain	13504-5079629-5	Backyani	2
Torgar	Kandar	Zawar Khan	13504-2220289-7	Kyanai	3
Torgar	Juddbah	Zar Saeed Shah	0	Dour Payen	1
Torgar	Juddbah	M Ayub Khan	0	Dour Bala	1
Torgar	Juddbah	Syed Zaman	0	Dour Bala	2
Torgar	Juddbah	Sultan Zaib	0	Dour Bala	1
Torgar	Juddbah	Rehmat Kjan	13502-2242343-1	Dour Payen	1
Malakanad	Batkhele	Daleel Ur Rehman	15402-1396711-9	Thana By Pass	2
Malakanad	Batkhele	Majeed Ur Rehman, Naveed Ur Rehman	15402-0472829-7	Alladand	4
Malakanad	Batkhele	Asghar Khan	15402-8396102-7	Alladand	2
Malakanad	Batkhele	Noor Mohd, Ameen Shah, Sajid Ali	15402-8018587-5 15402-7219253-5 15402-3443649-7	Alladand	6
Malakanad	Batkhele	Mohammad Sulaiman	15402-6574438-5	Jalawani	2
Alpuri	Alpuri	Umar Ali,Arshad Ali,Khairullah	15505-6765166, 15505-9460549-1, 15505-0215747-5	Sundvi Sanila	6
Alpuri	Karora	M.Nazar,Noorul Haq,Latif,Ronaq Zaman	not available	Chakat	6
Buner	Chamla	Gul Zaman Shah	15104-0346271-9	Maskipur	2
Buner	Chamla	Amir Sultan	15101-0383729-3	Korea	8
Buner	Chamla	Amroz Khan	15101-0357967-7	Koz Kalai	1
Buner	Daggar	Mukkamil Shah	15101-5001002-5	Manyari Kokand	4
Buner	Daggar	Ahmad Ali	15101-0229750-9	Spin Pand	2
Swat	Mingora	Bashir Ahmad	15602-0491741-9	Qala Charbagh	2
Swat	Fatehpur	Habibullah	15602-3923541-9	Khairabad	2
Swat	Fatehpur	Ikramullah,Abdulkarim,Shakirullah	15602-0504606-5, 15602-0325731-7, 15602-0504546-9	Jukhtai	6

Swat	Matta	Shah Said Bacha	15601-4404953-1	Sambat	2
Swat	Matta	Shaokat Ali	15601-2931571-9	Chupriyal	2
Swat	Kabal	Bakht Biland Khan		Ningolai	1
Kalam	Behrain south	Ahmad Ali,	15602-7065810-3	Kherabad	4
Kalam	Behrain south	Fazal Mubin	15602-0379890-1	Jarrai	2
Kalam	Behrain south	Said Ali	15602 5954424-7	Jarrai	2
Chitral	booni	Rahmat Khan, Wazir Khan,Ghulam Sayed	15201-1118886-6, 15201-0593445-1, 15202-8832600-7	Boombagh	3
Chitral	booni	Zahida Mehtab	15202-0805933-8	Koraagh	1
Chitral	booni	Chirag Uddin	15202-7276504-7	Reshon	1
Chitral	booni	Zubair Farooq	15202-4553206-1	Dokandah	2
Chitral	darosh North	Ameeruddin	15201-2324754-7	Shah Nigar	1
Chitral	darosh North	Baba Jan,Zubair Ahmad,Maqsood Ahmad,Altafullah,Altaf Karim,	15201-5043520-3, 152014325646-3, 152017605334-3, 15201-6981621-3, 15201-5699710-3	Kesu	7
Lower Dir	Chakdara	Qaisar Khan	15307-2813387-3	Darbar	2
Lower Dir	Timergara	Sher Bahadur	N/A	Thrai	2
Lower Dir	Jandool	Fazal Hadi	N/A	Monda	3
Lower Dir	Jandool	Jahangir Khan	N/A	Hakeemabad	4
Lower Dir	Jandool	Iftikhar Khan	N/A	Hakeemabad	1
Daur Watershed	Abbottabad	Muhammad Miskeen	90403-0124560-1	Baltair	1
Daur Watershed	Abbottabad	Muhammad Ashfaq	13302-8624871-3	Baltair	2
Daur Watershed	Abbottabad	Kala Khan	13302-0506158-3	Baltair	1
Buner watershed	Daggar	Nazir Ahmad	15101-0427663-5	Gagra	4
Buner watershed	Daggar	Bahar Ali	15101-7186257-5	Kol Pikas	3
Buner watershed	Pacha	Shafiurahman,Attaullah	15101-9621823-9, 15101-552645-5	Bhai Kalay	7
Kohistan w.shed	Puran	Bahar Ali	15505-1791513-9	Kotke	2
Kohistan w.shed	Puran	Syed Abdur Rauf, Abdul Qudoos	15505-8898520-9	Sandoke Aloch	3
Kohistan w.shed	Besham	Farjad Ali	15501-8338319-3	Snaway Kalay Shapoor	4
Kohistan	Besham	Amir Ul Bashar	15501-5266422-5	Damoray	4

w.shed					
Unhar watershed	Battgram	Abdul Wahid	13202-3210085-1	Maidan	2
Unhar watershed	Battgram	Waqas Ahmed	13202-5313693-5	Kandai Khadang	1
Unhar watershed	Battgram	Saifullah	13202-0767050-9	Shaglan Khadang	3
Unhar watershed	Shergarh	Shahid Nawaz	37405-2314427-1	Bazagey	3
Unhar watershed	Shergarh	Ejaz Ahmed	13504-4428824-1	Dogai	2

9.20 Appendix O (1): Coordinates of Block Plantation till December 2016

oest division	Range/subdivision	Location/ site	Corrdinates		
			N	E	Ele (m)
Peshawar	Peshawar	Ghari Chandan	33 50 04.5	71 43 22.4	540
Peshawar	Charsadda	Dheri zardad	34 04 00.1	71 50 28.8	282
Peshawar	Nowshera	Army firing range	33 59 57.6	71 57 07.8	319
Mardan	Rustam	Janai	34 20 04.4	72 13 21.0	374
Mardan	Rustam	Dambarodara	34 24 22.0	72 21 37.5	585
Mardan	Rustam	Pitao Malandari	54 24 55.6	72 21 02.8	485
Mardan	Rustam	Sargaroo	34 25 32.9	72 18 24.5	496
Mardan	Rustam	Pumba	34 18 28.5	72 21 18.3	400
Mardan	Rustam	Ziam Tangy	34 24 32.6	72 17 54.1	433
Mardan	Rustam	Shahtori	34 23 14.1	72 16 46.0	412
Mardan	Rustam	Bringan	34 22 49.8	72 17 21.0	399
Mardan	Rustam	Saleem Khan	34 22 47.2	72 18 39.8	445
Mardan	Swabi	Nandaro kali	34 03 21.8	72 12 37.3	387
Mardan	Swabi	Daggar	34 04 38.4	72 08 15.3	349
Mardan	Swabi	Mishako Banda	34 03 31.1	72 09 41.7	373
Mardan	Katlang	Muslim Abad	34 25 15.5	72 00 02.9	405
Mardan	Katlang	Zareen abad	34 25 47.0	71 58 53.1	399
Mardan	Katlang	Muslim Abad Jamgae	34 25 22.6	72 00 35.7	447
Mardan	Mardan	Marati	34 4 43	72 7 37	340
Mardan	Mardan	Meshko ali mohammad	34 3 38	72 9 44	390
Kohat	Kohat	Koteri	33 25 16.8	71 36 47.1	361
Kohat	Kohat	Dhok Akbar khan	33 26 27.4	71 36 36.6	394
Kohat	Kohat	Dhoda	33 27 25.7	71 31 00.8	435
Kohat	Kohat	Gul hassan banda	33 35 49.7	71 46 33.1	422
Kohat	Kohat	Siab	33 27 05.7	71 36 55.8	398
Kohat	Hangu	Bar Abbas khel	33 27 47.8	70 58 15.1	896
Kohat	Hangu	Reserve khrasha beat	33 31 12.2	71 06 13.8	833
Kohat	Hangu	Kahi I & IV	33 27 26.2	70 49 53.1	940
Kohat	Teri	Shawai	33 11 12.8	71 01 32.1	549
Kohat	Karak	Chak manzi	32 55 06.6	71 00 42.7	443
Kohat	Karak	Alwar Banda	32 57 08.7	71 03 06.5	497
Bannu	Bannu	Adami block	35 58 44.9	70 44 06.6	312
Bannu	Bannu	Painda khel	32 57 41.4	70 48 36.3	318
Bannu	Bannu	Kashoo	32 58 19.1	70 50 01.2	327
Bannu	Bannu	Barathi	32 54 01.9	70 46 08.0	287
Bannu	Laki Marwat	Gambila	32 41 24.2	70 45 32.2	271
Bannu	Laki Marwat	Wanda mir alam	32 34 20.3	71 13 38.0	295
D.I.Khan	D.I.Khan	Bhakkar C&W Land	31 46 36.3	70 57 40.8	162
D.I.Khan	Paharpur	Mahmood abad	32 09 35.6	71 01 38.4	172
D.I.Khan	Paharpur	Kirri Kheshor	32 19 20.2	71 12 19.7	177

Malakand	Dargai	Dobandhi	34 32 03.6	71 56 35.0	525
Malakand	Dargai	Damama Ghondai	34 28 08.0	71 49 07.4	
Malakand	Dargai	Kandao hryankot	34 28 48.7	71 48 19.4	531
Malakand	Dargai	Jammu Hero Shah	34 21 32.4	71 47 45.4	503
Malakand	Batkhela	Narey Tangai	34 36 59.0	71 47 51.0	664
Malakand	Batkhela	Total Aspur			
Buner	Daggar	Katkala	34 34 29.1	72 21 15.5	844
Buner	Daggar	Balo Khan	34 35 51.7	72 25 16.0	1159
Buner	Chamla	Kuz kalay (Mia Dand)	34 25 59.9	72 41 32.0	639
Buner	Chamla	Namdaar (Agarai)	34 21 47.9	72 31 52.0	848
Alpuri	Alpuri	Kat Khwar	34 41 05.9	72 42 27.5	843
Alpuri	Alpuri	Narangai	34 41 09.4	72 45 10.9	1012
Alpuri	Alpuri	Braim East	34 42 32.1	72 34 43.1	1440
Alpuri	Alpuri	Inawar	34 41 15.1	72 35 14.0	1363
Alpuri	Karora	Maira(Ijtema Ground)	34 48 57.9	72 59 20.3	568
Alpuri	Karora	Gandorai(Kormang)	34 58 02.2	72 49 08.2	1504
Kalam	Behrain North	Shagai	35 11 28.7	72 32 32.7	1501
Kalam	Behrain North	Dabargai	35 08 48.9	72 34 29.4	1760
Kalam	Behrain South	Stal Damlai	35 09 47.4	72 31 43.5	1434
Kalam	Behrain South	Dabargai	35 09 18.9	72 35 13.8	1918
Swat	Mingora	Ashar Banr	34 52 50.6	72 30 46.5	1944
Swat	Mingora	Manyaar	34 42 17.2	72 16 03.1	888
Swat	Kabal	Mailaga 1 & 2	34 46 38.5	72 12 28.3	1364
Swat	Kabal	Ningolai	34 51 30.8	72 23 48.1	1416
Swat	Fatehpur	Chamtalai Dandi 1&2	34 53 38.0	72 30 13.1	1870
Swat	Matta	Baorai Banda	34 53 07.7	72 22 36.7	1607
Dir Kohistan	Patrak	Biar Barikot	35 21 59.5	72 08 20.7	1638
Dir Kohistan	Shirigal	Rondesh	35 11 38.0	71 58 32.9	1410
Dir Kohistan	Shirigal	Kali Khwar (Miana Dhog)	35 20 10.7	71 58 53.3	1883
Upper Dir	Dir	Ganorai B	35 08 54.1	71 52 27.2	1426
Upper Dir	Dir	Sundrawal	35 07 27.9	71 49 42.9	1384
Upper Dir	Dir	Mashango Kas	35 07 33.6	71 49 13.3	1329
Upper Dir	Dir	Makhai	35 07 04.6	71 44 00.3	1777
Upper Dir	Darora	Osherai	35 10 21.4	72 07 33.8	1849
Lower Dir	Jandool	Shontalla	34 56 11.0	71 38 28.7	1089
Lower Dir	Chakdara	Oghaz	34 48 59.60	72 02 32.7	1602
Lower Dir	Timergara	Talash	34 45 08.1	71 57 44.0	1149
Lower Dir	Timergara	Shamadeen	34 53 01.1	71 57 41.0	843
Chitral	Booni	Brep	36 24 06.8	72 37 54.2	2424
Chitral	Booni	Istach	36 26 44.9	72 40 04.2	2476
Chitral	Drosh North	Azor Dam	35 35 02.2	71 49 16.9	1464
Chitral	Chitral	Sayed abad	35 41 17.7	71 45 55.0	1365
Chitral	Chitral	Shadoke	35 51 38.9	71 47 59.0	1804
Chitral	Chitral	Langland School	35 54 18.4	71 47 56.7	1677
Haripur	Haripur	Karwala	33 57 39.5	73 05 48.9	875
Haripur	Khanpur	Julian	33 45 55.7	72 52 27.0	558
Haripur	Satura	Bodlan	33 58 21.3	73 10 25.6	1116
Haripur	Makhanial	Noorpur	33 53 48.0	73 15 55.6	1036
Haripur	Makhanial	Bashkoli	33 53 35.7	73 19 04.7	1472

Haripur	Khanpur	Deewan Salman Cement	33 53 36.6	72 49 29.4	468
Haripur	Ghazi	kotehra Guwari	33 58 08.1	72 38 22.7	370
Gallies	Abbottabad	Solan Bala	34 15 53.2	73 09 17.2	1141
Gallies	Abbottabad	Akhrila & Nagaki Sarban	34 08 07.6	73 13 12.4	1530
Kaghan	Ghari	Shawal C-9	34 28 17.1	73 20 35.5	978
Kaghan	Ghari	Dhana Muhammad jan	34 25 31.5	73 20 52.2	935
Kaghan	Ghari	Jagir C-3	34 25 35.8	73 21 06.4	862
Kaghan	Balakot	Ganol	34 36 48.8	73 25 50.9	1561
Kaghan	Balakot	Bela ganol	34 36 23.7	73 26 36.4	1723
Kaghan	Balakot	Hangrai	34 37 24.9	73 22 30.8	1687
Kaghan	Balakot	Baila sacha	34 39 07.4	73 25 20.1	1884
Kaghan	Balakot	Hangrai chamber	34 37 52.4	73 23 07.7	1834
Kaghan	Ghari	Sogdhar	34 25 17.9	73 22 44.7	1070
Siran	upper siran	Bela Bhogarmang	34 33 52.5	73 15 15.5	1180
Siran	upper siran	Panjool	34 39 39.9	73 15 18.7	1727
Siran	upper siran	Baso Mandagucha	34 40 08.1	73 16 18.8	1723
Siran	Lower Siran	Bajna	34 27 08.5	73 15 15.2	986
Siran	Mansehra	Jabba	34 26 47.0	73 18 35.4	1067
Siran	Hillkot	Singalkot	34 34 18.8	73 07 51.4	1412
Hazara Tribal	Pashto	Bari	34 53 08.7	73 02 26.5	1588
Hazara Tribal	Allai	Gantar	34 52 02.7	73 08 30.0	1827
Hazara Tribal	Battagram	Kotgala	34 41 58.5	72 58 40.7	884
Hazara Tribal	Pashto	Musatangi	34 50 35.0	73 03 30.5	1555
Thor Ghar	Kandar	Laid	34 32 35.2	72 49 55.1	692
Thor Ghar	Juddbah	Dour Bala	34 45 04.8	72 50 03.5	736
Thor Ghar	Juddbah	Shadaag	34 41 31.4	72 48 11.7	580
Thor Ghar	Juddbah	Dado Serai	34 44 26.5	72 49 36.3	936
Thor Ghar	Kandar	Dilyari Maira	34 31 30.0	72 48 19.2	1035
Agror Tanawla	Gidarpur	Kehniyan	34 22 52.8	73 06 16.4	958
Agror Tanawla	Shergarh	Bejibang	34 24 21.0	72 57 35.3	1222
Agror Tanawla	Agror	Daru Banda	34 28 29.8	73 01 13.7	1365
Agror Tanawla	Oghi	Bandi Sadiq	34 28 33.7	73 03 00.1	1230
Bunir W/Shed	Daggar	Sarmalang	34 26 09.3	72 21 29.3	911
Bunir W/Shed	Daggar	Shapool	34 26 24.4	72 20 39.1	909
Bunir W/Shed	Daggar	Jabai Mughal Dara	34 25 56.9	72 21 26.0	879
Bunir W/Shed	Daggar	Sher Dil Banda	34 26 20.2	72 20 25.9	1024
Bunir W/Shed	Pacha	Khan Tangai	34 30 03.4	72 19 38.1	776
Bunir W/Shed	Chamla	Dormai Kandao	34 21 09.7	72 30 08.5	1000
Bunir W/Shed	Chamla	Ghund	34 23 25.0	72 29 21.2	792
Kohistan W/Shed	Besham	Kerai	34 54 47.6	72 49 30.9	894
Kohistan W/Shed	Besham	Sur Banr	34 59 10.4	72 44 36.5	1486
Kohistan W/Shed	Besham	Guna Nagar	34 46 14.8	72 51 26.9	570
Kohistan W/Shed	Besham	Karawat	34 53 03.1	72 45 52.3	1031
Kohistan W/Shed	Puran	Mairagai	34 39 10.0	72 41 17.7	1352
Kohistan	Puran	Akral	34 40 57.2	72 38 58.4	1252

W/Shed					
Kohistan W/Shed	Puran	Lochana	34 40 12.3	72 39 07.6	1561
Kohistan W/Shed	Puran	Akral Lochana	34 40 38.3	72 38 54.0	1366
Kohistan W/Shed	Kohistan	Munjee (Lahore)	34 57 10.1	72 52 46.6	761
Daur W/Shed	Havaleia	Baldher	33 59 49	73 54.3	810
Daur W/Shed	Havaleia	Baldher	33 59 38	73 54 2	879
Daur W/Shed	Havaleia	Shorang	32 14 85 9	10 90 96 4	999
Daur W/Shed	Havaleia	Kailag Shorang	32 15 24.3	10 91 08.3	995
Daur W/Shed	Havaleia	Tarmuchia	33 59 45.4	73 09 38.5	995
Daur W/Shed	Havaleia	Chiti Diki	33 59 20.3	73 08 15.5	999
Daur W/Shed	Havaleia	Nara Daki	33 59 55.8	73 14 01.6	1730
Daur W/Shed	Havaleia	Shorang	33 59 27.2	73 06 33.5	870
Daur W/Shed	Havaleia	Chando Mira	34 00 01.6	73 13 20.5	1325
Daur W/Shed	Abbottabad	Muslimabad	34 05 50.1	73 10.41.0	1085
Daur W/Shed	Abbottabad	Burj	34 07 51.3	73 09 48.3	1572
Daur W/Shed	Abbottabad	Habiba	34 08 44.8	73 09 20.6	1482
Daur W/Shed	Abbottabad	Batangi	34 08 08.6	73 09 53.6	1542
Kunhar W/Shed	Siran	Baffa Kolharay	34 27 28.4	73 13 13.3	985
Kunhar W/Shed	Siran	Datta	34 16 55.9	73 15 01.1	1310
Kunhar W/Shed	Ghari	Karnol	34 23 00.3	73 22 44.2	819
Kunhar W/Shed	Balakot	Tarana balakot	34 31 29.6	73 20 38.6	1027
Kunhar W/Shed	Balakot	Pumhara 1	34 36 04.3	73 21 18.1	1879
Kunhar W/Shed	Balakot	Chakka Ghanela	34 36 46.9	73 21 33.7	1906
Kunhar W/Shed	Siran	Narbeerh	34 18 36.8	73 15 51.6	1328
Kunhar W/Shed	Ghari	Dalolah	34 21 03.9	73 23 18.7	901
Kunhar W/Shed	Siran	Sheila	34 18 12.2	73 08 58.8	1039
Kunhar W/Shed	Ghari	Som kagal	34 26 23.4	73 21 47.3	855
Kunhar W/Shed	Balakot	Torri batangi	34 29 50.4	73 22 51.3	1579
Kunhar W/Shed	Siran	Mandian dera	34 20 42.6	73 13 54.2	1446
Kunhar W/Shed	Ghari	Batsang bela	34 23 44.0	73 22 57.0	805
Kunhar W/Shed	Ghari	Bararkot Bela	34 22 58.3	73 23 03.3	800
Kunhar W/Shed	Ghari	Sohal	34 28 09.7	73 21 30.4	948
Kunhar W/Shed	Balakot	Showal shagi	34 29 35.1	73 21 36.8	939
Kunhar W/Shed	Balakot	Banda	34 30 27.1	73 22 31.7	1385
Kunhar W/Shed	Balakot	Kummi	34 30 47.1	73 22 19.8	1533
Kunhar W/Shed	Ghari	Darra Syedan	34 24 44.9	73 21 00.0	990
Unhar W/Shed	Shergarh	Doga Miagan	34 26 34.2	72 55 28.9	1062
Unhar W/Shed	Shergarh	Bandi Mera	34 22 20.9	73 07 46.0	862
Unhar W/Shed	Shergarh	Takhar Mera	34 22.25.7	73 04 53.0	820
Unhar W/Shed	Allai	Nogram	34 49 11.8	73 06 32.4	1574
Unhar W/Shed	Allai	Chirdan	34 51 40.3	73 01 26.9	1375
Unhar W/Shed	Allai	Batkol	34 48 51.3	72 58 07.1	555
Unhar W/Shed	Battgram	Belyane bala	34 38 14.7	73 05 46.3	1545
Unhar W/Shed	Battgram	Chappargram	34 39 43.8	73 03 48.9	1393

9.21 Appendix O (2): Coordinates of block plantation till June 2017

Foest division	Range/subdivision	Location/ site	Corrdinates		
			N	E	Ele (m)
Peshawar	Peshawar	Misre Banda	34 02 51.7	72 08 06.8	346
Peshawar	Nizampur	Army rang Manki Sharif	33 56 41.0	71 57 32.9	434
Peshawar	Peshawar	Gari chand	33 49 20.2	71 42 38.7	537
Mardan	Mardan	Mughalka	34 03 53.1	72 09 43.6	329
Mardan	Swabi	Aladher	33 55 38.9	72 17 47.0	274
Kohat	Kohat	Sherbanda	33 32 46.0	71 48 29.6	383
Kohat	Teri	Banda Daood Shah	33 19 01.5	71 13 18.6	593
Kohat	Karak	Umerdin Kola 1	32 55 41.5	70 58 04.5	399
Kohat	Karak	Umerdin Kola 2	32 55 49.6	70 58 30.8	410
Kohat	Thall	Pastu	33 17 50.8	70 40 15.1	1004
Kohat	Teri	Edar Banda	33 11 19.5	71 03 15.9	593
Kohat	Hangu	Raisan	33 34 36.7	71 09 51.5	741
Bannu	Bannu	Patal Khel	32 59 39.5	70 49 46.2	336
Malakand	Dargi	Selai patai	34 33 29.6	71 4 12.8	1085
Malakand	Batkhela	Baeawal	34 35 38.3	71 49 43.6	964
Buner	Daggar	Bilal Nagar	34 37 24.2	72 29 37.0	1304
Buner	Chamla	Soora Ormal	34 22 34.7	72 36 35.7	1024
Alpuri	Alpuri	Bada Gata Bilay Baba (Tangoo)	34 54 24.3	72 40 46.5	1813
Alpuri	Alpuri	Faiz Abad Dando (Dherai)	34 54 42.6	72 38 08.2	1570
Alpuri	Karora	Laodar	35 01 31.5	72 45 40.2	1820
Kalam	Behrain South	Kas Ragas Kota	35 05 30.7	72 29 17.7	1516
Swat	Matta	Mandoor+baidar	34 57 25.0	72 25 19.1	1450
Swat	Mingora	Karr	34 42 23.1	72 23 09.4	1573
Swat	Mingora	Talegarm	34 49 56.4	72 29 45.6	1325
Swat	Kabal	Sewa gali	34 45 37.4	72 12 33.3	1275
Dir Kohistan	Patrak	Barai Bar Kalay	35 25 21.9	72 02 56.3	1885
Dir Kohistan	Shirengal	Sharmai	35 11 42.18	71 58 06.9	1299
Upper Dir	Dir	Kharkanai "A"	835 07 14.7	71 45 12.9	1900
Upper Dir	Dir	Kharkanai "B"	35 06 48.9	71 45 26.1	1902
Upper Dir	Dir	Bandai	35 05 50.4	71 45 39.6	1720
Upper Dir	Dir	Lil Band "A"	34 07 06.9	71 45 56.2	1901
Upper Dir	Warai	Chapar	35 00 14.1	72 00 53.9	1186
Lower Dir	Timargara	Deolay Talash	35 01 06.5	71 38 47.2	1858
Lower Dir	Chakdara	Gishkot osakai	34 41 58.0	71 59 20.6	1185
Lower Dir	Chakdara	Sia (Palala loye Navo)	34 48 36.0	72 02 22.1	1575
Lower Dir	Jandool	Shar Banai	34 41 31.5	71 49 42.0	1799
Chitral	Booni	Avi Lasht	36 16 59.1	72 17 26.1	2022
Chitral	Booni	Qutaan Lasht Dizk	36 27 56.3	72 41 00.8	2520
Chitral	Booni	Qutaan Lasht	36 27 24.9	72 40 11.0	2506
Chitral	Chitral	Maskoor Nala II	35 40 58.3	71 45 27.4	1390
Haripur	Satora	Tarari Thouha	34 02 58.1	73 18 09.3	1937

Haripur	Maknial	Karrar	33 53 01.5	73 17 51.6	1200
Haripur	Haripur	Bandi Labyal II	34 13 40.3	72 54 57.2	927
Haripur	Khanpur	Langrial	33 55 48.7	73 06 53.6	1084
Haripur	Ghazi	Bela	33 59 30.0	72 35 04.4	314
Gallies	Dongagali	Bathnara	33 59 15.6	73 21 51.9	2330
Gallies	Bagnotar	Justar+Cham	34 05 16.9	73 22 29.6	2206
Gallies	Berangali	Jahfer	34 18 76.9	73 33 81.1	1859
Kaghan	Kaghan	Teer Sukhria	34 39 56.9	73 21 27.1	1819
Siran	Mansehra	Cher Sandasar	34 22 10.5	73 16 36.0	1092
Siran	Mansehra	Jabba Soora	34 26 36.1	73 18 35.8	1099
Siran	Upper Siran	Purana Bhogarmang	34 34 47.3	73 15 48.9	1370
Siran	Mansehra	Massar RF 12 (III)	34 26 50.2	73 18 39.5	1074
Siran	Lower Siran	Shnai Bala Bagh	34 26 51.6	73 17 39.5	1073
Hazara Tribal	Pashto	Tandol 1	34 53 20.6	73 00 15.8	1383
Hazara Tribal	Allai	Chalera Ali Sheria	34 51 05.2	73 01 18.1	1589
Hazara Tribal	Hillan	Kadlo	34 42 08.5	73 04 57.7	1428
Hazara Tribal	Battgram	Soba Dari Naryala	34 43 24.4	72 57 46.5	834
Thor Ghar	Kandar	Laid	34 37 59.5	72 51 46.0	1469
Agror Tanawla	Oghi	Londi Bangash	34 31 50.9	073 02 53.8	1399
Agror Tanawla	Gidarpur	Landai Khawajgan	34 25 54.9	073 07 07.6	951
Agror Tanawla	Shergarh	Shochni	34 28 55.1	072 57 10.6	1534
Agror Tanawla	Shergarh	Guldhar	34 24 25.8	72 55 50.4	1513
Agror Tanawla	Gidarpur	Char Bankotti	34 28 18.5	73 07 40.4	974
Bunir W/Shed	Pacha	Malak pur	34 37 11.4	72 26 55.0	866
Bunir W/Shed	Daggar	Ghazi	34 25 58.0	72 22 23.3	995
Bunir W/Shed	Daggar	Marado & Mekho khpa	34 38 17.0	72 40 02.5	1470
Bunir W/Shed	Daggar	Daggar	34 31 09.5	72 38 55.7	801
Kohistan W/Shed	Besham	Kerai	34 54 27.7	72 50 10.2	1384
Kohistan W/Shed	Besham	Kikor	35 00 23.3	72 46 11.4	1743
Kohistan W/Shed	Puran	Machai	34 40 37.5	72 41 42.0	969
Daur W/Shed	Sherwan	Sobangali	34 17 41.6	73 15 01.7	1358
Daur W/Shed	Abbotabad	Dhanger	34 09 88.8	73 15 71.4	1132
Daur W/Shed	Havelian	Naloka Narwara	33 98 50.3	73 25 94.8	1628
Daur W/Shed	Havelian	Chatti Dhaki	33 98 69.4	73 13 80.8	1030
Daur W/Shed	Havelian	Harnra Narian	34 03 50 04	73 15 19.8	1162
Kunhar W/Shed	Balakot	Pandair Pitica	34 36 40.8	073 21 53.5	1593
Kunhar W/Shed	Siran	Blag Bala	34 16 10.0	73 06 08.0	970
Kunhar W/Shed	Siran	Thathi Ahmed Khan	34 15 06.9	073 02 36.0	974
Kunhar W/Shed	Garhi Habibullah	Garhi Habibullah	34 22 15.2	073 24 06.1	864
Unhar W/Shed	Shergarh	Fujdara	34 22 43.6	73 03 56.3	869
Unhar W/Shed	Shergarh	Surni	34 18 41.3	73 03 12.5	864
Unhar W/Shed	Shergarh	Deri Namshera	34 17 10.6	73 00 39.8	729
Unhar W/Shed	Battgram	Banara	34 38 00.6	73 02 11.6	1520
Unhar W/Shed	Allai	Lundi Cheran	34 44 56.2	73 01 44.6	1178
Unhar W/Shed	Shergarh	Sumbalboot	34 31 11.5	72 58 17.7	1525

9.22 Appendix O (3): Coordinates of Woodlot

Foest division	Range/subdivision	Location/ site	Corrdinates		
			N	E	Ele (m)
Peshawar	Charsada	Dher zardad	34 02 45.7	71 50 24.5	287
Peshawar	Peshawar	Daman Hinki	34 03 52.9	71 37 21.7	293
Peshawar	Peshawar	Dalazak	34 02 45.1	71 32 05.2	307
Peshawar	Charsada	Hisara Dhaki	34 18 34.2	71 44 29.8	
Mardan	Swabi	Dhok Bela	34 00 45.2	72 31 17.0	303
Mardan	Katlang	Dheiri	34 23 46.1	72 02 50.8	376
Mardan	Katlang	Qasmi	34 26 27.9	72 03 18.9	412
Mardan	Mardan	Jamra	34 14 43	71 56 52	550
Mardan	Mardan	Rajar Road	34 14 24	71 55 46	355
Mardan	Katlang	Shamozi	34 23 50.6	72 06 52.7	413
Mardan	Katlang	Umar abad	34 18 45.5	71 57 30.4	333
Mardan	Katlang	Alao	34 24 23.0	72 02 47.2	401
Mardan	Swabi	Ghaar Bela	34 00 06.5	72 30 18.0	307
Kohat	Karak	Umardin Kalay	32 55 48.3	70 58 02.7	
Kohat	Thall	Rehmat Shah Banda	33 22 46.1	70 35 47.2	772
Kohat	Teri	Pasto Nari Panos	33 11 19.9	71 04 42.1	515
Kohat	Hangu	Tukh Sarai naway kalan	33 28 28.8	70 55 27.0	951
Kohat	Hangu	Naway Kalan	33 29 07.5	70 55 42.9	982
Kohat	Karak	Umardin Kalay	32 55 50.7	70 57 57.5	
Kohat	Karak	Shuka banda	32 54 41.6	71 03 16.3	508
Kohat	Karak	Shawa nassti	32 54 52.4	71 02 59.4	497
Kohat	Karak	Shetaka banda	32 54 41.2	71 03 30.9	516
Kohat	Karak	Shetaka banda	32 54 55.5	71 03 25.7	510
Kohat	Karak	Topi	32 59 30.1	71 00 57.6	466
Bannu	Banuu	Kashoo	35 58 44.9	70 44 06.6	312
Bannu	Banuu	Kotka Muhammad khan	32 57 41.4	70 48 36.3	318
Bannu	Banuu	Walagi	32 58 19.1	70 50 01.2	327
Bannu	Laki Marwat	Thandar wala lakki	32 54 01.9	70 46 08.0	287
D.I.K	Koolachi	Gara Aslam	32 03 14.8	70 25 51.8	222
D.I.Khan	Paharpur	Sami alizai farm	32 06 00.06	71 02 28.2	177
Malakand	Dargai	Heroshah 1	34 28 28.7	71 49 35.5	485
Malakand	Dargai	Heroshah 2	34 38 33.4	71 49 54.3	483
Malakand	Dargai	Landai	34 31 50.4	71 57 07.9	533
Malakand	Dargai	Wartair 1	34 31 21.16	71 59 14.2	570
Malakand	Dargai	Wartair 2	34 31 09.1	71 59 12.5	559

Malakand	Dargi	New Lerosha	34 27 35.8	71 49 37.2	461
Bunir	Daggar	Pir Abai (Thaoda Chena)	34 31 56.3	72 25 56.3	701
Bunir	Daggar	Torwarsak	34 29 55.9	72 20 03.5	800
Bunir	Chamla	Spankhada	34 18 36.5	72 32 64.8	530
Bunir	Chamla	Jandara	34 12 20.9	72 28 71.4	394
Bunir	Chamla	Hal (Khadokhail)	34 13 .744	72 32 .715	461
Bunir	Chamla	Qasim khel	34 14 .084	72 30 .938	415
Bunir	Chamla	Nogram Maira	34 15 .054	72 27 .017	440
Alpuri	Alpuri	Tangoo (Liloni)	34 58 49.6	72 38 20.3	1704
Alpuri	Alpuri	Tangoo (Liloni)	34 58 41.7	72 38 29.7	1952
Alpuri	Alpuri	Kas (Liloni)	34 59 45.1	72 38 11.8	1942
Alpuri	Alpuri	Pula (Liloni)	35 00 53.0	72 38 33.5	2027
Alpuri	Karora	Chena	34 53 07.3	72 46 08.2	1062
Alpuri	Karora	Guli Batt	34 52 02.8	72 46 08.8	1092
Alpuri	Karora	Sra Khawray (Karora)	34 53 26.2	72 46 06.7	936
Alpuri	Karora	Shunyar	35 02 10.2	72 44 53.1	1671
Alpuri	Karora	Pir Khana	35 01 47.6	72 43 52.6	1751
Alpuri	Karora	Pir Khana	35 02 18.2	72 45 09.2	1776
Swat	Matta	Kharedai	34 572	72 24 12	4180
Swat	Matta	Laoreen Shawar	34 59 36	72 17 21	6340
Swat	Matta	Naooro Banda	34 59 27	72 16 46	6090
Swat	Matta	Naooro Banda	34 59 19	72 16 51	5820
Swat	Matta	Khan thangai Shakardara	34 51 43	72 24 9	4330
Swat	Matta	Laoreen Shawar	34 59 31	72 17 10	6210
Kalam	Behrain South	Banjo (Madyan) Dabargai	35 07 06.4	72 31 11.3	1356
Kalam	Behrain South	Badalai	35 08 37.7	72 33 15.1	1516
Lower Dir	Timargara	Timtai ghar	34 58 50.6	71 37 58.6	1489
Lower Dir	Chakdara	Dach	34 45 02.1	72 01 59.2	1057
Lower Dir	Jandoo	Ghund	35 00 31.5	71 37 41.1	1750
Lower Dir	Jandool	Gararra	34 48 29.2	71 44 47.1	512
Lower Dir	Timergara	Alamgoro khour	34 51 59.9	71 50 32.8	901
Lower Dir	Jandool	Khadi Kheela	34 49 36.9	71 42 40.1	925
Lower Dir		Chakdara	34 38 35.3	71 47 18.8	577
Lower Dir	Jandool	Chalgazay	34 51 03.6	71 38 14.1	886
Chitral	Drosh North	Azor Dam	35 35 17.7	71 49 11.5	1374
Chitral	Drosh North	Kesu	35 38 47.7	71 47 21.2	1428
Chitral	Drosh North	Kesu Gol	35 38 29.4	71 47 27.7	1374
Chitral	Drosh South	Jingerait	35 31 42.2	71 45 29.3	1235

Chitral	Drosh South	Jingerait	35 31 34.0	71 45 48.9	1274
Chitral	Drosh South	Damik	35 31 27.4	71 45 51.9	1273
Chitral	Drosh South	Soveer Lasht	35 30 12.0	71 44 10.4	1257
Chitral	Drosh South	Jingerait Gol	35 31 55.9	71 45 02.5	1373
Chitral	Drosh South	Kalkatak	35 30 55.9	71 45 31.8	1380
Chitral	Drosh South	Badogal	35 28 53.9	71 44 54.9	1282
Chitral	Booni	Kaqlasht	36 16 44.1	72 14 49.2	2038
Chitral	Booni	Mori	36 00 46.2	72 00 01.8	1899
Chitral	Chitral	Singoor	35 53 27.9	71 47 38.1	1569
Chitral	Chitral	Khor Kashandien	35 50 40.1	71 45 59.7	1679
Chitral	Chitral	Gehraith	35 39 21.6	71 45 46.4	1394
Chitral	Chitral	Gehraith	35 39 14.8	71 46 09.5	1374
Chitral	Chitral	Gang	35 39 36.4	71 46 33.9	1421
Chitral	Chitral	Danin Gol	35 51 58.3	71 48 26.9	1735
Upper Dir	Dir	Nawra	35 07 22.9	71 48 14.6	1426
Dir Kohistan	Shirigal	Dhog Dara	35 20 25.9	71 58 22.6	1740
Haripur	Khanpur	Mang Bandar	34 54 47.9	72 53 58.1	0
Haripur	Ghazi	Tahanian Mian Dheri	34 57 17.7	72 34 36.3	330
Haripur	Haripur	Dowa Khuskhi	33 55 37.5	72 55 37.6	563
Haripur	Khanpur	Mang	33 54 55.6	72 54 26.8	528
Kaghan	Ghari	Dalota	34 22 28.3	73 23 18.7	782
Siran	Upper Siran	Banda Dhaki	34 37 30.8	73 13 27.0	1693
Siran	Upper Siran	Bagnu	34 40 18.4	73 16 44.4	1821
Siran	Upper Siran	Kalas Nawazabad	34 38 44.8	73 13 38.6	1582
Siran	Upper Siran	BasBela	34 35 48.2	73 15 42.1	1312
Agror Tanawla	Agror	Parrgali	34 32 04.7	073 00 11.8	1353
Agror Tanawla	Agror	Chajhar Bala	34 31 13.6	073 04 02.6	1176
Agror Tanawla	Agror	Shador Kangar Banda	34 30 02.2	073 04 50.2	1200
Agror Tanawla	Gidarpur	Khawajgan	34 25 57.8	073 07 44.4	853
Agror Tanawla	Gidarpur	Dub Muradpur	34 26 30.7	073 08 21.2	815
Agror Tanawla	Shergarh	Lassan Nawab	34 16 56.6	72 58 55.3	710
Agror Tanawla	Gidarpur	Tatar	34 27 15.1	73 07 16.5	897
Agror Tanawla	Gidarpur	Babral	34 28 00.0	073 07 06.0	964
Agror Tanawla	Gidarpur	Tredda	34 28 17.9	73 08 34.0	876
Agror Tanawla	Agror	Kathai	34 31 15.0	73 05 12.5	1162
Agror Tanawla	Agror	Kot Chajjar	34 30 37.6	73 01 39.6	1140
Agror Tanawla	Shergarh	Tanowa	34 25 41.3	72 59 26.3	1135
Agror Tanawla	Shergarh	sherghar nalla	34 28 27.1	72 59 24.4	1036
Hazara Tribe	Battgram	Mairagai	34 45 24.8	72 57 11.4	664
Hazara Tribe	Pashto	Shergat	34 52 03.2	73 02 42.2	1905

Hazara Tribe	Pashto	Shergat	34 52 01.5	73 02 44.7	1900
Hazara Tribe	Hillan	Bar Daar	34 40 48.9	73 08 11.0	1626
Hazara Tribe	Hillan	Kara Batamore	34 41 32.5	73 05 34.9	1385
Hazara Tribe	Battgram	Quingbori	34 49 55.1	73 04 23.2	1496
Hazara Tribe	Battgram	Quingbori	34 45 58.6	72 57 14.7	
Hazara Tribe	Battgram	Kotgala	34 41 29.4	72 57 50.9	
Thor Ghar	Juddbah	Dour Bala	34 44 56.0	72 49 45.9	689
Besham W/Shed	Besham	Bar Kana	34 57 56.3	72 45 00.5	1225
Besham W/Shed	Besham	Maidan (Bar kana)	34 57 55.6	72 44 57.7	1222
Besham W/Shed	Besham	Maidan (Bar kana)	34 57 51.6	72 44 56.1	1229
Besham W/Shed	Besham	Shunial	34 56 16.2	72 45 05.0	1152
Besham W/Shed	Besham	Bezandai (Matta)	34 53 01.8	72 46 23.2	1093
Besham W/Shed	Puran	Sundoko	34 43 13.1	72 40 39.5	1003
Bunir W/Shed	Daggar	Jattah	34 27 27.1	72 29 28.0	812
Bunir W/Shed	Daggar	Babalai	34 27 51.5	72 29 25.2	699
Bunir W/Shed	Daggar	Nawaikaley	34 27 46.7	72 24 17.1	746
Bunir W/Shed	Daggar	Nawaikaley	34 23 03.3	72 24 18.9	768
Bunir W/Shed	Daggar	Karapa	34 28 20.1	72 25 54.9	723
Bunir W/Shed	Daggar	Karapa	34 28 36.0	72 26 34.0	719
Bunir W/Shed	Daggar	Karapa	34 28 29.0	72 26 47.1	722
Bunir W/Shed	Daggar	Karapa	34 28 31.0	72 26 38.1	730
Bunir W/Shed	Daggar	Gata (Karapa)	34 29 14.0	72 26 56.2	722
Bunir W/Shed	Daggar	Sunigram	34 29 18.0	72 28 53.1	771
Bunir W/Shed	Daggar	Ghejoona	34 28 26.2	72 82 40.1	707
Bunir W/Shed	Pacha	Bhai kaley	34 34 21.5	72 24 37.3	756
Bunir W/Shed	Pacha	Daggar kaley	34 31 48.9	72 26 03.9	703
Bunir W/Shed	Pacha	Sultanwas	34 33 58.6	72 26 58.9	721
Bunir W/Shed	Pacha	Pacha Sharefai	34 35 54.2	72 26 56.7	744
Bunir W/Shed	Chamla	Ambela	34 23 08.3	72 27 52.7	753
Bunir W/Shed	Chamla	Koga	34 23 00.5	72 30 32.5	696
Bunir W/Shed	Chamla	Koga	34 24 00.7	72 29 11.7	704
Bunir W/Shed	Chamla	Koga	34 24 47.9	72 38 24.0	628
Bunir W/Shed	Chamla	Koga	34 24 00.9	72 29 10.6	633
Bunir W/Shed	Chamla	Nawagai	34 24 05.8	72 33 54.3	668
Daur W/Shed	Havaleia	Mohri I	34 00 20.2	73 14 16.9	1538
Daur W/Shed	Havaleia	Mohri II	34 00 21.7	73 14 40.6	1504
Daur W/Shed	Havaleia	Mohri III	34 00 28.4	73 14 23.7	1487
Daur W/Shed	Havaleia	Mohri III	34 00 28.4	73 14 23.7	1487
Daur W/Shed	Havaleia	Nara Dhaki	33 59 23.1	73 13 39.1	1570
Daur W/Shed	Havaleia	Karrha Nikapa	32 10 72.4	10 92 28.1	677

Daur W/Shed	Havaleia	Balder/ Bagar	34 00 17.1	73 04 20.0	677
Daur W/Shed	Havaleia	Lalo Dheri	34 00 41.6	73 06 43.1	798
Kunhar W/Shed	Siran	Mandian Darra	34 20 41.9	73 13 28.3	1168
Kunhar W/Shed	Garhi	Sohal	34 28 10.5	73 21 19.4	1006
Kunhar W/Shed	Balakot	Hassa Batkarar	34 31 01.3	73 21 12.7	989
Kunhar W/Shed	Garhi	Guldehri	34 25 10.5	73 21 34.0	825
Kunhar W/Shed	Siran	Khaki Bela	34 24 10.0	73 08 18.5	833
Kunhar W/Shed	Siran	Trangri Bela	34 27 20.3	73 11 06.4	925
Kunhar W/Shed	Siran	Shehilia	34 18 15.4	73 08 53.6	1012
Kunhar W/Shed	Garhi	Dalolah	34 21 23.5	73 23 56.8	802
Kunhar W/Shed	Siran	Kotkay	34 20 55.5	73 15 03.7	1048
Kunhar W/Shed	Balakot	Balakot	34 31 29.6	73 20 38.6	1027
Unhar W/Shed	Battgram	Degree college	34 39 12.1	73 03 26.0	1102
Unhar W/Shed	Allai	Khelji Moreen	34 50 31.8	73 02 39.0	1327
Unhar W/Shed	Allai	Chota banna	34 49 51.7	73 03 40.8	1331
Unhar W/Shed	Battgram	Nowshera			
Unhar W/Shed	Allai	Pokal	34 49 10.2	73 04 52.8	1433
Unhar W/Shed	Allai	Pokal	34 04 09.2	73 04 55.1	1436
Unhar W/Shed	Shergarh	Phagbanda	34 31 21.4	73 01 20.7	1217

9.23 Appendix O (4): Coordinates of Linear PLantation

Foest division	Range/subdivision	Location/ site	Corrdinates		
			N	E	Ele (m)
Peshawar	Peshawar	Motory way	34 05 09.2	71 43 47.8	1180
Mardan	Karlang	Rama	34 21 07.8	72 06 03.9	394
Mardan	Mardan	Rashakai Ring Road	34 08 08.1	72 01 56.0	290
Kohat	Kohat	Pindi road	33 33 15.9	71 38 29.4	402
Bannu	Laki marwart	D.I khan road	32 38 38.6	70 46 16.8	261
D.I.Khan	Paharpur	Spur No.18	30 33 09	87 00 48	179
D.I.Khan	Paharpur	Chashma Road kot	30 34 34.0	88 29 96	181
D.I.Khan	Paharpur	CRBC Matraha	32 13 37.0	71 09 09.6	192
D.I.Khan	Paharpur	Kottla Mianer	32 11 44.4	71 03 25.6	180
D.I.Khan	Paharpur	CRBC Tir Garh	30 35 92.7	88 60 97	184
D.I.Khan	Paharpur	CRBC Bilot beat linear	32 16 33.0	71 10 43.4	184
D.I.Khan	Paharpur	Chashma Road Bilot beat	32 16 34.4	71 10 41.3	181
D.I.Khan	Paharpur	Chashma Road sigrra beat	30 19 25.4	85 08 90	169
D.I.Khan	D.I.Khan	C & W land Bahker	31 44 49.7	70 58 11.2	170
Malakand	Dargai	Malakand 3 Canal Side	34 33 38.3	71 56 23.9	650
Buner	Daggar	Bhatai to Kalail Road	34 36 50.6	72 28 14.2	755
Alpuri	Alpuri	Shangla Top to Alpuri Road	34 53 41.5	72 37 01.1	1658
Kalam	Behrain South	Kas Qandeel Road	34 05 12.8	72 29 30.6	1275
Chitral	Drosh North	Khair Abad Road Side	35 36 39.1	71 47 59.7	1340
Siran	Upper Siran	Chinarkot	34 41 07.1	73 13 40.2	1916
Kaghan	Kaghan	Danda Jared	34 41 45	73 34 38	1590
Hazara Tribe	Battgram	Kotgala	34 41 19.9	72 57 36.5	1141
Thor Ghar	Juddbah	Shatal Road	34 36 27.8	72 48 09.3	877
Upper Kohistan	Harban	harban to asper	34 31 52.8	73 34 09.0	1028
Lower Kohistan	Palas	Shalkanabad	35 06 15.9	73 00 49.8	721

9.24 Appendix O (5): Coordinates of Saline and waterlogg

Foest division	Range/subdivision	Location/ site	Corrdinates		
			N	E	Ele (m)
Peshawar	Nowshera	Azakhel paya	34 10 25.4	71 52 27.3	310
Peshawar	Peshawar	Misre Banda	34 03 37.5	71 48 25.9	285
Mardan	Rustam	Batkor	34 11 42.4	72 12 28.3	301
Kohat	Kohat	Koteri	33 24 52.5	71 37 30.9	331
Kohat	Kohat	Billi Tang	33 30 46.7	71 35 20.4	414
Kohat	Teri	Teri Dargah	33 17 31.5	71 07 14.8	608
Bannu	Bannu	Shabaz Azmat khel	32 56 36.9	70 42 06.8	309
Bannu	Laki marwat	Sari Gambila	32 40 06.5	70 46 56.3	259
Bannu	Laki marwat	Daratang	32 36 44.6	71 08 47.3	219
Bannu	Laki marwat	Gambila	32 41 23.9	70 45 29.9	262
Bannu	Laki marwat	Kotka Hakim kha n	32 41 59.9	70 44 28.9	264
Bannu	Lakki	Gambela	32 41 28.2	70 45 41.5	261
Bannu	Laki marwat	Wanda Mir Alam	32 35 39.6	71 11 59.9	210
Bannu	Laki marwat	Mir Alam Minjiwala	32 43 45.2	70 52 16.7	263
D.I.Khan	Paharpur	Mitha pur	30 31 996	870800	171
D.I.Khan	Paharpur	Hote village	30 33 53 7	87 12 14	172
D.I.Khan	D.I.Khan	Ghafari-banda	31 46 58.4	70 56 01.8	159
D.I.Khan	D.I.Khan	Torrak khan	29 61811	832365	232
D.I.Khan	D.I.Khan	Yasin drazinda	31 44 21.7	70 18 33.8	231
D.I.Khan	D.I.Khan	Dhapchabak Resume land	31 47 37.8	70 57 27.0	164
D.I.Khan	D.I.Khan	Dame phase aera	31 35 58.5	70 55 06.7	152
D.I.Khan	D.I.Khan	Taimur Sha drahan	31 45 38.2	70 22 0.4	223
D.I.Khan	D.I.Khan	Inyatullah drahm	31 41 17.5	70 24 31.9	213
D.I.K	Prowa	Disty No.20 Tail 1& 2	31 26 03.9	70 43 37.8	155
D.I.Khan	D.I.Khan	Alamgir Aria	31 40 54.9	70 26 21.9	208

9.25 Appendix O (6): Coordinates of Sowing and Dibbling

Foest division	Range/subdivision	Location/ site	Corrdinates		
			N	E	Ele (m)
Mardan	Rustam	Salam Khan	34 22 39.3	72 18 33.5	
Kohat	Kohat	Koteri	33 25 16.8	71 36 47.1	361
Kohat	Kohat	Dhoda	33 27 25.7	71 31 00.8	435
Kohat	Kohat	Siab	33 27 05.7	71 36 55.8	398
Kohat	Kohat	Gul hassan banda	33 35 49.7	71 46 33.1	422
Kohat	Teri	Bahadur khel	33 10 00.9	70 55 56.5	580
Kohat	Karak	Alwar Banda	32 57 25.6	71 04 09.6	534
Kohat	Teri	Drangi	33 16 07.6	71 14 35.2	563
D.I.Khan	Paharpur	CRBC Tir Garh	30 35 92.7	88 60 97	184
Buner	Daggar	Navi Dara	34 38 25.0	72 29 04.4	1183
Buner	Chamla	Lakai Ghar	34 26 22.0	72 41 52.1	781
Alpuri	Alpuri	Banda Copt#4	34 51 46.8	72 35 14.5	2169
Alpuri	Karora	Soor Band Compt#15	34 59 10.4	72 44 36.5	1539
Kalam	Behrain South	Tirat (Shalotek) Compt#2	35 07 06.8	72 29 50.4	1549
Swat	Mingora	Chail Shagai	34 44 55.5	72 20 01.6	1200
Swat	Mingora	Manyaar Kashala	34 42 58.1	72 16 59.0	888
Upper Dir	Wari	Mahmano Banda	35 03 43.3	72 05 21.1	1931
Swat	Fatepoor	Redar Tal sir	34 54 53	72 35 7	7730
Alpuri	Alpuri	Shalizara	34 59 28.7	72 38 32.6	1955
Siran	Upper Siran	Panjool RF-2 (III)	34 35 28.4	73 17 15.8	1916
Agror Tanawal	Gidarpur	Gidarpur RLC -4 5	34 27 51.9	73 05 30.1	1154
Agror Tanawal	Gidarpur	Gidarpur RLC -1 2	34 27 35.4	73 05 18.2	1285
Upper Kohistan	Harban	Suggimoos	35 30 43.5	73 35 55.6	1566
Gallies	Dongagali	Mira romal	33 57 15.5	73 21 52.2	1742
Gallies	Berangali	Chattri	34 22 10.9	73 34 16.5	2269
Siran	Upper Siran	Devli baila	34 42 19.6	73 13 48.7	1985
Hazara Tribe	Battgram	Hotal Deshan	34 43 14.1	72 56 24.8	1019
Kohistan	Lower Kohistan	Shalkanabad	35 07 03.5	73 03 10.8	829
Kohistan	Lower Kohistan	Jumgali	35 02 04.5	73 03 29.7	2340
Bunir W/Shed	Daggar	Sarmalang	34 26 03.0	72 21 22.5	1024
Bunir W/Shed	Pacha	Pesho Ghat	34 32 25.8	72 28 23.9	793
Kohistan W/Shed	Kohistan	Gorgat Raniel	34 54 00.8	72 47 41.1	968
Daur watershed	Abbotabad	Burji	34 07 51.3	73 09 48.3	1572
Daur watershed	Abbotabad	Kasaki	34 07 39.9	73 07 53.3	1347
Daur watershed	Havelian	Mohri Dewal	34 04 83.6	73 28 97.9	1942
Bunir W/Shed	Daggar	Sarmalang	34 26 03.0	72 21 22.5	1024
Bunir W/Shed	Pacha	Pesho Ghat	34 32 25.8	72 28 23.9	793
Kohistan W/Shed	Kohistan	Gorgat Raniel	34 54 00.8	72 47 41.1	968
Unhar	Shergarh	Nikka Pani	34 25 30.0	72 53 26.1	710
Daur watershed	Abbotabad	Burji	34 07 51.3	73 09 48.3	1572

9.26 Appendix O (7): Coordinates of Departmental tube Nurseries

Regions	Division	Range/Sub-Division	Name of incharge	Location	Coordinates		Ele. m
					N	E	
South	Peshawar	Peshawar	Inam Ullah	Ghufran Abad	34 01 00.5	71 41 47.8	299
South	Peshawar	Charsadda	Ijaz Khan	kochiano kali	34 18 12.8	71 43 03.7	363
South	Bannu	Bannu	Liaqat Ali	Hassan Khel	32 54 31.1	70 40 18.7	321
South	Bannu	Bannu	Dilawar Khan	Tapi kala	32 59 47.0	70 35 16.7	382
Malakand	Malakand	Dargai	Khurshid Ahmad	Jharay Sakhakot	34 26 11.1	71 54 34.3	408
Malakand	Swat	Mingora	Amjad Ali	Kot Nawaikaley	34 48 59.2	72 25 23.2	983
Malakand	Swat	Matta	Sher Shah Ali Khan	Chuprial	34 59 18.2	72 21 11.0	1257
Malakand	Swat	Fatehpur	Aziz ul Haq	Ghar Shin Nawy Kaly	35 01 59.3	72 28 36.2	1215
Malakand	Kalam	Behrain South	Mian Said Akbar Jan	Benorai	35 04 26.1	72 29 24.6	1272
Malakand	Shangla	Alpuri	Zahid Hussain	Karora	34 52 45.9	72 53 16.6	631
Malakand	Bunair	Chamla	Abdul Wahid	Sura village	34 23 17.8	72 33 33.8	657
Malakand	Chitral	Chitral	Kareem Ullah	Chamarkun	35 47 35.1	71 46 59.0	1461
Malakand	Lower Dir	Timergara	Ghulam Hussain	Bandagai	34 45 23.6	71 49 50.4	763
Malakand	Lower Dir	Chakdara	Shafiullah	Shaheedabad	34 39 06.8	72 01 41.1	690
Hazara Teritorial	Siran	Mansehra	Waqar Ahmed	Baffa Doraha	34 24 39.1	73 14 02.3	973
Hazara Teritorial	Hazara Tribe	Battgram	Sain Muhammad	jehangir abad	34 40 39.3	73 00 57.4	1014
Hazara Teritorial	Torghar	Kandar	Muhammad Sardar	Ismail Band	34 28 34.0	72 58 27.7	1115
Hazara Teritorial	Agror tanawal	Gidarpur	Irfan Khan	Chowki	34 27 15.1	73 07 22.1	883
Hazara Teritorial	Gallies	Abbottabad	Abdur Rasheed	Salhad	34 07 22.4	73 11 03.2	
Hazara Teritorial	Haripur	Haripur	Mohammad Riaz	Nikkapur	33 59 51.3	73 03 52.4	683
Hazara Watershed	Unhar Watershed	Allai	Lal Bahadar	Batkol	34 48 50.6	72 58 09.2	555
Hazara Watershed	Daur w.shed	Havelia	Zahoor	Sadaqat khan			
Hazara Watershed	Besham w.shed	Besham	Mazhar	Ziarat Paty (Shang)	34 52 53.5	72 52 51.0	516
Hazara Watershed	Besham w.shed	Chamla	Jehan Zeb	Kuz Kaley	34 25 42.4	72 39 51.7	609
Hazara Watershed	Buner w.shed	Pacha	Syed Qasim Shah	Daggar Talan	34 32 00.4	72 28 46.6	734
Hazara Watershed	Buner w.shed	Chamla	Muneer Khan	Kaoga	34 22 44.1	72 30 36.0	707

9.27 Appendix O (8) Coordinates of departmental bare rooted nurseries

South	Division	Subdivision	Location	Coordinates		
				N	E	Ele. M
South	Peshawar	Charsadda	Gul Rang	34 11 57.6	71 47 36.6	309
South	Mardan	Mardan	Jamra Takhtbhai	34 14 33	71 56 48	350
Lower Hazara	Haripur	Haripur	Dheri Sikandar	34 00 25.3	72 56 32.2	535
Lower Hazara	Haripur	Khanpur	Kutli Hattar	33 52 20.4	72 51 18.7	498
Lower Hazara	Gallies	Abbottabad	Dingapur	33 59 48.0	73 03 02.6	658
Lower Hazara	Gallies	Abbottabad	Dingapur	34 59 48.0	74 03 02.6	659
Lower Hazara	Siran	Lower Siran	Dharyal	34 29 50.3	73 15 56.6	1045
Lower Hazara	Siran	Lower Siran	Shnai Bala			
Upper Hazara	Agror Tanawal	Gidarpur	Chowki	34 27 11.6	73 07 10.4	881
Upper Hazara	Hazara tibai	Battgram	Maidan	34 40 37.2	73 00 48.6	1012
Upper Hazara	Thor Ghar	Kandar	Umar Shah Banda	34 28 37.5	72 58 41.7	1062
Upper Hazara	Thor Ghar	Juddbah	Gujar Bandi	34 29 42.9	72 59 28.4	1111
Upper Hazara	Lower Kohistan	Patan	Ranolia	35 03 27.2	72 53 29.2	800
Upper Hazara	Lower Kohistan	Patan	Shang	34 52 53.5	72 52 47.0	616
Upper Hazara	Lower Kohistan	Jalkot	Goshali	35 13 33.7	73 12 13.8	846
Malakand	Malakand	Dargai	Sakhakot	34 26 12.9	71 54 17.6	408
Malakand	Alpuri	Alpuri	Bingalai	34 44 53.8	72 41 03.2	1125
Malakand	Alpuri	Karora	Shang (Medan)	34 52 43.0	72 53 35.3	619
Malakand	Lower Dir	Chakdara	Shaeedabad	34 39 06.6	72 01 41.0	691
Malakand	Lower Dir	Timergara	Bandagai	34 45 23.6	71 49 50.4	763
Malakand	Lower Dir	Chakdara	Shaeedabad	34 39 06.6	72 01 41.0	691
Malakand	Kalam	Behrain North	Chikrai	35 05 02.2	72 29 38.7	1263
Malakand	Chitral	Drosh South	Nagar	35 28 55.7	71 44 29.5	1237
Malakand	Chitral	Booni	Dokandeh	36 16 16.2	72 14 56.0	2054
Malakand	Chitral	Drosh North	Dad Khandori	35 34 00.0	71 47 49.8	1297
Malakand	Swat	Fatehpur	Nawey Kaley	35 01 59.2	72 28 32.9	1211
Malakand	Swat	Mingora	Kot (Naway Kaly)	34 48 58.5	72 25 24.9	977
Malakand	Swat	Matta	Kwarai	34 57 05.7	72 22 42.6	1164
Malakand	Swat	Kabal	Damghar	34 48 01.3	72 21 41.9	925
Malakand	Swat	Fatehpur	Nawey Kaley	35 01 59.3	72 28 36.2	1215
Malakand	Buner	Daggar	Daggar	34 30 00.0	72 28 06.4	691
Malakand	Buner	Chamla	Chamla	34 24 20.3	72 34 29.4	674
Watershed	Daur w/s	Haripur	Nikkapah	33 59 56.8	73 03 34.8	666
Watershed	Besham W.Shed	Kohistan	Ziarat Patay (Shang)	34 52 53.3	72 52 51.6	551
Watershed	Besham W.Shed	Puran	Sundvi	34 45 52.6	72 40 13.4	1109
Watershed	Besham W.Shed	Besham	Ziarat Patay (Shang)	34 52 51.7	72 52 52.0	600
Watershed	Buner W.Shed	Daggar	Kaloo Cheena	34 27 10.0	72 28 16.1	729
Watershed	Buner W.Shed	Daggar	Kaloo Cheena	34 27 10.0	72 28 16.1	730
Watershed	Unhar w/shed	Battagram	Kandoli	34 39 17.3	073 03 18.6	1092
Watershed	Unhar w/shed	Battagram	Kandoli	34 39 17.3	073 03 18.6	1092
Watershed	Unhar w/shed	Shergarh	Parhena	34 21 45.8	073 05 24.5	778
Watershed	Kunhar W/Shed	Siran	Muradpur	34 26 10.1	073 08 16.5	852
Watershed	Kunhar W/Shed	Siran	Muradpur	34 26 10.1	073 08 16.5	852

9.28 Appendix O (9): Coordinates of private tube nurseries

Region	Division	Range/Sub-Division	Location	Coordinates		
				N	E	Ele. M
South	Peshawar	Peshawar	Akbar pura	34 02 38.9	71 43 24.6	296
South	Peshawar	Peshawar	Akhun Panju Baba	34 02 22.6	71 43 11.1	300
South	Peshawar	Peshawar	Akbar pura	34 02 27.9	71 43 29.9	294
South	Peshawar	Peshawar	Tarnab Faram	34 01 06.5	71 42 32.0	296
South	Peshawar	Peshawar	Chugal Pura	34 01 39.2	71 43 00.0	294
South	Peshawar	Peshawar	Jiggu Ghufra Abad	34 00 51.1	71 41 52.2	296
South	Peshawar	Charsadda	Toranzai	34 13 21.2	71 45 35.0	318
South	Peshawar	Charsadda	Ziam	34 16 01.6	71 47 44.7	347
South	Peshawar	Charsadda	Umerzai	34 14 06.1	71 53 27.6	332
South	Peshawar	Nowshera	Manki sharif	33 56 38.6	71 57 35.5	440
South	Peshawar	Nowshera	Manki sharif	33 56 08.9	71 58 00.7	454
South	Mardan	Katlang	gulli bagh	34 19 36.1	72 08 21.9	380
South	Mardan	Katlang	Kunj Ghareeb abad	34 19 38.5	72 03 08.1	347
South	Mardan	Katlang	Katlang bazar	34 21 03.6	72 04 14.3	380
South	Mardan	Katlang	Gulli Bagh	34 19 57.0	72 08 11.2	361
South	Mardan	Katlang	gulli bagh	34 19 54.7	72 08 12.3	358
South	Mardan	Mardan	Gujjar Ghari	34 13 21	72 1 4	300
Kohat	Kohat	Kohat	Kharmati	33 29 43.7	71 30 47.8	424
Kohat	Kohat	Kohat	Bora gari	33 29 18.7	71 32 10.9	415
Kohat	Kohat	Kohat	Bora gari	33 29 16.0	71 32 13.2	471
Kohat	Kohat	Kohat	Ghumbat	33 29 59.8	71 40 34.7	411
Kohat	Kohat	Kohat	Ghumbat	33 29 24.2	71 40 50.4	423
Kohat	Kohat	Karak	Khamedan	32 57 05.4	70 58 38.5	418
Malakand	Swat	Mingora	mjurad abad manglawar	34 48 58.0	72 27 10.3	1018
Malakand	Swat	Mingora	murad abad manglawar	34 48 48.9	72 26 48.2	988
Malakand	Swat	Mingora	maira charbagh	34 50 56.2	72 27 12.3	1067
Malakand	Swat	Mingora	maira charbagh	34 50 37.6	72 27 00.3	1059
Malakand	Swat	Mingora	manglawar	34 28 23.4	72 26 41.9	998
Malakand	Swat	Mingora	dewana baba charbagh	34 48 17.5	72 26 50.1	1003
Malakand	Swat	Mingora	manglawar	34 48 19.0	72 25 39.3	975
Malakand	Swat	Matta	dureshkhela	34 59 08.6	72 25 59.5	1199
Malakand	Swat	Matta	dureshkhela	34 59 20.0	72 26 55.9	1158
Malakand	Swat	Matta	garai chopriyal	34 58 27.7	72 21 58.1	1252
Malakand	Swat	Matta	baraim gora	34 54 59.1	72 24 29.6	1045
Malakand	Swat	Matta	chupriyal garai	34 58 22.5	72 21 56.4	1224
Malakand	Swat	Matta	dureshkhela	34 59 10.2	72 26 47.2	1157
Malakand	Swat	Kabal	ningolai	34 50 07.5	72 24 51.4	1000
Malakand	Swat	Kabal	ningolai	34 50 01.8	72 24 41.7	992
Malakand	Swat	Kabal	ningholai malak abad	34 50 1.8	72 24 41.7	992
Malakand	Swat	Kabal	khairabad	35 03 32.4	72 32 19.7	1648
Malakand	Swat	Kabal	khairabad	35 03 32.6	72 32 17.5	1681
Malakand	Swat	Fatehpur	jukhtai	35 03 37.5	72 31 14.8	1499
Malakand	Swat	Fatehpur	jukhtai	35 03 42.8	72 31 10.6	1479
Malakand	Swat	Fatehpur	jukhtai	35 03 42.0	72 31 03.3	1476
Malakand	Alpuri	Alpuri	Chawga Chorlangai	34 41 31.2	72 39 17.8	1029

Malakand	Alpuri	Alpuri	Chawga Chorlangai	34 41 32.1	72 39 10.2	1029
Malakand	Alpuri	Alpuri	Chawga Chorlangai	34 41 32.1	72 39 10.2	1029
Malakand	Alpuri	Alpuri	Shang(Booda)	34 52 32.5	72 53 49.6	637
Malakand	Alpuri	Alpuri	Shang	34 52 44.0	72 53 18.3	633
Malakand	Alpuri	Alpuri	Shang	34 52 45.7	72 53 16.1	632
Malakand	Malakand	Dargai	Dargai	34 29 35.0	71 53 59.0	470
Malakand	Malakand	Dargai	Dargai	35 29 35.0	72 53 59.0	470
Malakand	Malakand	Dargai	Dargai Phatak	34 31 26.9	71 53 46.2	471
Malakand	Malakand	Dargai	GCP Ghee Mill Dargai	34 29 35.1	71 53 54.0	450
Malakand	Malakand	Dargai	Dargai	34 31 42.4	71 54 12.8	478
Malakand	Chitral	Chitral	Kuro Ayun	35 42 36.0	71 46 05.7	1447
Malakand	Chitral	Chitral	Sahan Ayun	35 42 39.1	71 46 08.2	1448
Malakand	Chitral	Chitral	Singoor	35 53 33.3	71 47 48.5	1541
Malakand	Chitral	Chitral	Singoor	35 53 30.9	71 47 57.3	1465
Malakand	Chitral	Chitral	Sahan Ayun	35 42 39.7	71 46 09.3	1448
Malakand	Chitral	Drosh North	Kesu	35 38 02.8	71 47 43.9	1378
Malakand	Chitral	Drosh North	Azor Dam	35 35 18.4	71 49 06.8	1332
Malakand	Chitral	Drosh South	Shah Nigar	35 35 07.8	71 48 38.4	1388
Malakand	Chitral	Drosh South	Shah Nigar	35 35 08.6	71 48 45.4	1402
Malakand	Chitral	Drosh South	Azor Dam	35 35 10.9	71 48 57.2	1394
Malakand	Chitral	Drosh South	Azor Dam	35 38 06.1	71 47 41.9	1371
Malakand	Chitral	Booni	Lasht Booni	36 16 23.9	72 15 49.4	2103
Malakand	Chitral	Booni	Booni Lasht	36 16 17.3	72 15 54.3	2114
Malakand	Buner	Chamla	thothalai	34 11.215	72 27.604	352
Malakand	Buner	Chamla	Maskipur	34 23 56.4	72 29 41.3	700
Malakand	Buner	Chamla	maskipur	34 23 56.4	72 19 41.3	700
Malakand	Buner	chamla	nawagai	34 25 17.4	72 34 10.0	680
Malakand	Buner	Daggar	apin pand daggar	34 30 06.8	72 27 51.7	705
Malakand	Buner	Daggar	yakh dara matwanai	34 29 53.9	72 35 36.0	748
Malakand	Dir Kohistan	Sheringal	bar dog	35 20 25.9	71 58 22.6	1740
Malakand	Dir Kohistan	Patrak	deoon patrak	35 20 26.7	72 03 35.8	1512
Malakand	Dir Kohistan	Patrak	deoon patrak	35 20 23.1	72 03 31.1	1512
Malakand	Dir Kohistan	Patrak	deoon patrak	35 20 25.0o	72 03 31.5	1510
Malakand	Kalam	Behrain South	Dabargai	35 09 18.9	72 33 13.8	1918
Malakand	Kalam	Behrain South	Badalai	35 08 38.9	72 33 30.7	1457
Malakand	Kalam	Behrain South	jarray	35 06 30.2	72 30 38.8	1339
Malakand	Kalam	Behrain South	damana	35 07 11.5	72 31 05.0	1322
Malakand	Kalam	Behrain North	Baram Patay	35 04 16.7	72 29 46.6	1357
Malakand	lower Dir	Chakdara	Darbar	34 39 56.3	72 02 22.8	710
Malakand	lower Dir	Chakdara	Darbar	34 39 57.2	72 02 25.8	708
Malakand	lower Dir	Chakdara	Darbar	34 40 07.3	72 03 23.6	708
Malakand	lower Dir	Chakdara	Chakdara	34 39 44.5	72 01 39.9	701
Malakand	lower Dir	Chakdara	Darbar	34 39 30.8	72 02 31.0	697
Malakand	lower Dir	Chakdara	Darbar	34 39 29.5	72 02 33.3	694
Malakand	lower Dir	Timergara	Thrai	34 45 58.0	71 47 12.0	700
Malakand	lower Dir	Timergara	Thrai	34 47 00.1	71 47 11.5	687
Malakand	lower Dir	Timergara	Thrai	34 47 15.5	71 47 36.0	668
Malakand	lower Dir	Timergara	Bajauro	34 45 35.6	71 53 29.7	961

Malakand	lower Dir	Timergara	Thrai	34 47 15.7	71 47 35.9	679
Malakand	lower Dir	Jandool	Gambeer	34 54 20.0	71 38 42.0	920
Malakand	lower Dir	Chakdara	Gula Trap			
Malakand	lower Dir	Chakdara	Tekni Payeen	34 46 09.4	72 04 16.0	998
Malakand	lower Dir	Chakdara	Tekni Payeen	34 46 11.7	72 04 10.5	1005
Hazara	Siran	Hillkot	Karmang	34 32 47	73 10 46	1380
Hazara	Siran	Hillkot	Karmang	34 32 35	73 11 03	1390
Hazara	Siran	Lower siran	Makhria	34 28 45.3	73 16 32.0	1034
Hazara	Siran	Lower siran	tarnain baffa	34 24 36.3	73 14 04.7	968
Hazara	Siran	upper siron	kalas nawaz abad	34 38 46.7	73 13 36.0	1616
Hazara	Siran	upper siron	kare cham	34 39 02.8	73 13 17.3	1698
Hazara	Siran	upper siron	kiare nawaz abad	34 39 07.3	73 13 35.2	1665
Hazara	Siran	Mansehra	commece college	34 18 54.9	73 11 48.6	1099
Hazara	Siran	Hillkot	single kot	34 34 03	73 07 36	2220
Hazara	Haripur	Haripur	Gher khan	33 58 51.3	72 56 43.9	536
Hazara	Haripur	Haripur	Gujjar Mora	33 59 52.8	72 56 39.8	541
Hazara	Haripur	Haripur	Mirpur	33 56 45.1	72 56 51.4	581
Hazara	Haripur	Haripur	Doya Khushki	33 56 05.4	72 54 55.9	536
Hazara	Haripur	Haripur	Qazian	34 01 81.5	72 55 55.5	508
Hazara	Haripur	Makhanial	Ghambeer	33 51 29.9	73 15 07.0	1045
Hazara	Haripur	Ghazi	Jalo Bhai	33 59 49.7	72 37 87.2	325
Hazara	Haripur	Khanpur	Tarnava	33 37 49.2	72 54 39.9	549
Hazara	Hazara tribe	Battgram	Ajmeera	34 40 15.6	73 00 44.1	1029
Hazara	Hazara tribe	Battgram	Oghoz Banda	34 41 32.5	72 58 30.2	1006
Hazara	Hazara tribe	Battgram	Oghoz Banda	34 41 34.0	72 58 42.1	958
Hazara	Hazara tribe	Allai	Byari	34 48 57.1	73 05 41.5	1517
Hazara	Hazara tribe	Allai	Bagh Rashank	34 49 01.8	73 07 21.2	1628
Hazara	Agror tanawal	Shergarh	Bela Tanowa	34 25 42.6	73 00 13.3	1265
Hazara	Agror tanawal	Shergarh	Bela Tanowa	34 25 24.4	73 00 23.6	1116
Hazara	Agror tanawal	Shergarh	Chansair	34 26 31.3	72 58 18.4	982
Hazara	Agror tanawal	Agror	Charan goda	34 31 45.3	73 06 15.9	1259
Hazara	Agror tanawal	Gidarpur	Chowki	34 28 31.2	73 08 26.2	890
Hazara	Agror tanawal	Gidarpur	Chowki	34 28 30.3	73 08 27.8	887
Hazara	Agror tanawal	Gidarpur	Chowki	34 28 36.8	73 08 25.6	883
Hazara	Agror tanawal	Gidarpur	Kakoo	34 28 41.2	73 08 29.2	888
Hazara	Agror tanawal	oghi	Arbora	34 27 33.9	73 03 17.2	1219
Hazara	Agror tanawal	Shergarh	Kubahi	34 26 41.9	72 58 21.5	984
Hazara	Upper kohistan	Komila	Koogi Seo	35 19 30.4	73 11 31.6	1278
Hazara	Torghar	Kandar	Bakyana	34 31 44.0	72 49 06.3	532
Hazara	Torghar	Kandar	Bakyana	34 31 42.7	72 49 06.2	522
Hazara	Torghar	Kandar	Bakyana	34 31 42.6	72 49 06.4	516
Hazara	Torghar	Kandar	Kyanai	34 28 39.5	72 50 49.7	477
Hazara	Torghar	Juddbah	Zizari	34 44 27.8	72 49 14.1	721
Hazara	Torghar	Juddbah	Zizari	34 44 26.7	72 49 14.5	720
Hazara	Torghar	Juddbah	Zizari	34 44 41.1	72 49 47.5	717
Hazara	Torghar	Juddbah	Zizari	34 44 28.0	72 49 14.1	721
Hazara	Torghar	Juddbah	Suri Qamar	34 41 48.9	72 48 11.4	588
Hazara	Torghar	Juddbah	Dour Payen	34 44 40.1	72 49 47.8	718
Hazara	Torghar	Juddbah	Dour Bala	34 44 56.5	72 49 47.0	723

Hazara	Torghar	Juddbah	Dour Bala	34 4457.4	72 49 45.7	718
Watershed	Unhar Watershed	Battgram	Quinchbori	34 45 17.2	72 56 20.4	783
Watershed	Unhar Watershed	Battgram	Quinchbori	34 45 21.4	72 56 18.8	884
Watershed	Unhar Watershed	Battgram	Quinchbori	34 45 21.5	72 56 19.0	930
Watershed	Unhar Watershed	Allai	Rashank Bandi	34 49 03.8	73 07 21.5	1634
Watershed	Unhar Watershed	Allai	Batkol	34 48 06.4	72 57 59.9	749
Watershed	Unhar Watershed	Allai	Batkol	34 48 26.4	72 57 59.9	749
Watershed	Unhar Watershed	Allai	Batkol	34 48 26.4	72 57 59.9	749
Watershed	Unhar Watershed	Allai	Shagai Rashang	34 49 04.4	73 07 00.5	1662
Watershed	Unhar Watershed	Allai	Shagai Rashang	34 49 05.6	73 06 45.1	1608
Watershed	Unhar Watershed	Allai	Rashang Bandi	34 49 08.9	73 07 24.9	1514
Watershed	Unhar Watershed	Allai	Rashang Bandi	34 49 14.3	73 06 58.8	1609
Watershed	Unhar Watershed	Battgram	Maidan	34 40 29.1	73 00 27.8	1005
Watershed	Unhar Watershed	Battgram	Maidan	34 40 28.6	73 00 28.9	999
Watershed	Daur watershed	Abbottabad	Lehndi Daur	3209906	1092047	2190
Watershed	Daur watershed	Abbottabad	Akhooon Bandi	3209971	1092585	2387
Watershed	Haripur	Abbottabad	Akhooon bandi	32 09 96.5	10 92 50.2	2315
Watershed	Haripur	Abbottabad	Bastisheer khan	32 10 35.4	10 91 27.3	2231
Watershed	Daur watershed	Havelian	Akhooon Bandi	3209983	1092569	2344
Watershed	Kohistan W/shed	Besham	Damoarai	34 59 30.1	72 44 58.7	1405
Watershed	Kohistan W/shed	Besham	Naway kalay shapoor	34 56 06.1	7245080	1171
Watershed	Kohistan W/shed	Besham	shang	34 52 35.1	72 53 41.6	613
Watershed	Kohistan W/shed	Besham	shang budha	34 5232.5	725349.6	617
Watershed	Kohistan W/shed	Besham	Banjat			
Watershed	Kohistan W/shed	Puran	Mairagai	34 39 02.5	72 41 58.3	1062
Watershed	Kohistan W/shed	Puran	Aloch	34 44 05.7	72 40 46.1	1007
Watershed	Kohistan W/shed	Puran	Kotkay	34 43 14.7	72 40 37.3	1020
Watershed	Kohistan W/shed	Puran	Sunoke	34 43 53.4	72 40 55.4	985
Watershed	Buner watershed	Pacha	bhai kalay	34 34 48.3	72 26 19.8	733
Watershed	Buner watershed	Pacha	bhai kalay	34 34 57.4	72 26 32.9	730
Watershed	Buner watershed	Pacha	talán daggar	34 31 58.7	72 28 43.7	737
Watershed	Buner watershed	Daggar	shanti nagar	34 25 17	72 28 40	789
Watershed	Buner watershed	Daggar	najo cheena	34 26 45	72 29 24	701
Watershed	Buner watershed	Daggar				
Watershed	Buner watershed	Daggar				
Watershed	Buner watershed	Daggar	kal derai	34 25 53.8	724002.5	606

9.29 Appendix O (10): coordinates of private bare rooted nurseries

Region	Division	Range/Sub-Division	Location	Coordinates		Ele. M
				N	E	
South	Peshawar	Peshawar	Chughal Pura	34 01 12.9	71 42 26.9	298
South	Peshawar	Peshawar	Akbar Pura	34 02 07.1	71 43 14.8	291
South	Peshawar	charsadda	Gul Rang	34 11 56.8	71 47 36.2	310
South	Peshawar	charsadda	Sarki Masharan	34 15 39.8	71 47 53.6	337
South	Peshawar	charsadda	Zarbab Ghari	34 15 57.1	71 47 22.6	342
South	Kohat	Kohat	Bora garri	33 29 17.3	71 32 12.7	419
Hazara	Haripur	Haripur	Gher Khan	33 58 34.9	72 56 39.0	553
Hazara	Haripur	Haripur	Gujjar Mora	33 59 54.9	72 56 42.7	537
Hazara	Haripur	Khanpur	Tarnawa	33 37 49.9	72 54 39.7	561
Hazara	Siran	Upper siran	Kare cham	34 39 00.4	73 13 22.3	1690
Hazara	Siran	Upper siran	kalas nawaz abad	34 38 50.3	73 13 35.4	1637
Hazara	Siran	Upper siran	Jabori	34 39 07.6	73 13 36.6	1668
Hazara	Siran	Lower siran	Makriya	34 28 46.4	73 16 28.8	1030
Hazara	Hazara Tribe	Battgram	Magri	34 41 32.5	72 58 30.2	1006
Hazara	Hazara Tribe	Battgram	Ajmira	34 40 16.3	73 00 46.8	1032
Hazara	Hazara Tribe	Pashto	Roof kanai	34 50 02.5	73 05 50.1	1513
Hazara	Hazara Tribe	Pashto	telos	34 50 45.0	73 01 75.7	1263
Hazara	Agror Tanawal	Agror	Dara Bella	34 28 48.1	73 01 48.0	1137
Hazara	Agror Tanawal	Shergarh	Bela Tanowa	34 25 41.4	73 00 14.9	1084
Hazara	Agror Tanawal	Shergarh	Bela Tanowa	34 25 23.8	73 00 18.8	1128
Hazara	Agror Tanawal	Shergarh	Chansair	34 26 31.8	72 58 18.5	980
Hazara	Agror Tanawal	Gidarpur	Chowki	34 27 12.0	73 07 13.8	888
Hazara	Agror Tanawal	Gidarpur	Malhoo	34 28 26.8	73 08 33.7	879
Hazara	Agror Tanawal	Gidarpur	Chowki	34 28 30.0	73 08 34.5	882
Hazara	Agror Tanawal	Agror	Charrangoda	34 31 42.5	73 06 04.8	1265
Hazara	Agror Tanawal	Oghi	Arbora	34 27 34.6	73 03 18.7	1221
Hazara	Agror Tanawal	Shergarh	Chansair	34 26 42.5	72 58 21.0	962
Hazara	Agror Tanawal	Oghi	Bandi Sadiq	34 28 20.9	73 02 44.1	1138
Hazara	Agror Tanawal	Gidarpur	Malhoo	34 28 28.0	73 08 33.5	879
Hazara	lower Kohistan	Patan	Daag Segiyon	35 06 56.6	72 59 33.2	913
Hazara	lower Kohistan	Patan	Seri Jijal	35 02 11.5	72 55 39.2	679
Hazara	lower Kohistan	Patan	Seri Jijal	35 02 11.8	72 55 34.6	681
Hazara	Upper Kohistan	Komila	Seglo Seo	35 18 45.2	73 11 10.7	829
Hazara	Torgar	Kandar	Laid Akazai	34 32 16.8	72 49 29.2	650
Hazara	Torgar	Kandar	Backyani	34 31 55.0	72 49 05.1	547
Hazara	Torgar	Kandar	Kyanai	34 28 55.1	72 50 52.8	540
Hazara	Torgar	Juddbah	Dour Payen	34 44 47.8	72 49 43.9	653
Hazara	Torgar	Juddbah	Dour Bala	34 44 46.1	72 49 49.7	706
Hazara	Torgar	Juddbah	Dour Bala	34 44 48.1	72 49 43.9	647
Hazara	Torgar	Juddbah	Dour Bala	34 44 44.9	72 49 44.4	656
Hazara	Torgar	Juddbah	Dour Payen	34 44 41.6	72 49 48.6	713
Malakand	Malakanad	Batkheila	Thana By Pass	34 38 27.4	72 03 40.7	693
Malakand	Malakanad	Batkheila	Alladand	35 38 27.4	73 03 40.7	694
Malakand	Malakanad	Batkheila	Alladand	36 38 27.4	74 03 40.7	695
Malakand	Malakanad	Batkheila	Alladand	37 38 27.4	75 03 40.7	696
Malakand	Malakanad	Batkheila	Jalawani	38 38 27.4	76 03 40.7	697
Malakand	Alpuri	Alpuri	Sundvi Sanila	34 45 58.0	72 40 15.2	1091

Malakand	Alpuri	Karora	Chakat	34 52 09.0	72 45 50.7	1001
Malakand	Buner	Chamla	maskipur	34 23 56.4	72 29 41.3	700
Malakand	Buner	Chamla	korea	34 24 55.5	72 37 15.1	635
Malakand	Buner	Chamla	koz kalai	34 25 40.9	72 39 48.0	608
Malakand	Buner	Daggar	manyari kokand	34 37 52.4	72 31 22.4	962
Malakand	Buner	Daggar	spin pand	34 30 05.4	72 27 52.0	698
Malakand	Swat	Mingora	qala charbagh	34 50 43.1	72 26 01.4	997
Malakand	Swat	Fatehpur	khairabad	35 03 32.6	72 32 17.5	1681
Malakand	Swat	Fatehpur	jukhtai	35 03 38.2	72 31 11.6	1497
Malakand	Swat	Matta	sambat	34 56 35.4	72 26 14.0	1112
Malakand	Swat	Matta	chupriyal	34 59 18.2	72 21 11.0	1257
Malakand	Swat	Kabal	ningolai	34 50 01.8	72 24 41.7	992
Malakand	Kalam	Behrain south	kherabad	35 03 34.5	72 32 10.1	1664
Malakand	Kalam	Behrain south	Jarrai	35 06 08.6	72 30 19.6	1294
Malakand	Kalam	Behrain south	Jarrai	35 06 01.0	72 30 33.6	1332
Malakand	Chitral	Booni	boombagh	36 13 39.3	72 10 25.3	1943
Malakand	Chitral	Booni	koraagh	36 13 07.9	72 09 55.2	1977
Malakand	Chitral	Booni	reshon	36 09 03.5	72 05 53.8	1912
Malakand	Chitral	Booni	dokandah	36 16 23.8	72 14 36.4	2012
Malakand	Chitral	darosh North	shah nigar	35 35 10.6	71 48 37.9	1378
Malakand	Chitral	darosh North	kesu	35 38 07.7	71 4738.4	1352
Malakand	Lower Dir	Chakdara	Darbar	34 39 29.6	72 02 33.6	693
Malakand	Lower Dir	Timergara	Thrai	34 47 15.5	71 47 36.0	668
Malakand	Lower Dir	Jandool	Monda	34 49 15.4	71 41 06.7	764
Malakand	Lower Dir	Jandool	Hakeemabad	34 54 16.4	71 38 50.7	940
Malakand	Lower Dir	Jandool	Hakeemabad	34 54 18.3	71 38 44.0	890
Watershed	Daur W.shed	Abbottabad	Baltair	32 10 881	10 92 62 8	2260
Watershed	Daur W.shed	Abbottabad	Baltair	3209906	10 92 047	2190
Watershed	Daur W.rshed	Abbottabad	Baltair	32 09 90 6	10 92 04 7	2190
Watershed	Buner W.shed	Daggar	gagra	34 28 20	72 32 18	673
Watershed	Buner W.shed	Daggar	kol pikas	34 28 09	72 32 36	637
Watershed	Buner W.shed	Pacha	bhai kalay	34 34 45.7	72 26 21.1	729
Watershed	Kohistan w.shed	Puran	Kotke	34 43 14.7	72 40 37.3	1020
Watershed	Kohistan w.shed	Puran	sandoke aloch	34 43 53.4	72 40 55.4	985
Watershed	Kohistan w.shed	Besham	snaway kalay shapoor	34 56 12.1	72 45 11.0	1156
Watershed	Kohistan w.shed	Besham	Damoray	34 59 29.09	72 54 58.3	1402
Watershed	Unhar W.shed	Battgram	Maidan	34 40 28.5	73 00 29.0	998
Watershed	Unhar W.shed	Battgram	Kandai Khadang	34 41 11.0	73 02 37.3	1090
Watershed	Unhar W.shed	Battgram	Shaglan khadang	34 41 16.2	73 02 40.8	1100
Watershed	Unhar W.shed	Shergarh	Bazagey	34 29 45.3	73 00 29.2	1112
Watershed	UnharW.shed	Shergarh	Dogai	34 29 45.7	72 59 29.2	1123