



Annex 4: Participatory Reforestation Plan Template

1- Background and Justification (RC)

Al-Shouf Cedar Society (ACS) and Niha municipality are keen to reforest the proposed site since it is a barren land that needs to be reforested with species with high ecological value and economic interest: fruit trees, stone pine and sprouting species. Moreover it is accessible where a new road has been established, and it is subjected to erosions. Note that, 50 years ago most of such land was planted with wheat and some cereals, since 30 years it has been transformed to become a grazing land. Later on, small parts of it were reforested by pine trees and the survival rate is more than 50%. The type of reforestation proposed is: planting seedlings; which is mainly applied in steep slopes with abundant rocky outcrops and bare soil with soily sediments; scarce vegetation cover, with an average coverage of grasses and scattered small shrubs. Some livelihood activities will be carried out to support the shepherds and make them involved in the reforestation process especially that they will be facing a reduced economic opportunity to raise animals due to the limitation of the grazing activities in the reforested areas. The site will be reforested since it is an abundant land with bare soil, scarce vegetation cover with an average low coverage of grasses and scattered small shrubs.

2-Objectives of the Reforestation (RC)

Reforesting the proposed area plays a key role in maintaining a safer environment where it will contribute to carbon sequestration, strengthen ecological and community adaptation to climate change, maintain a habitat for many species, expand and conserve the forest coverage, combat pollution and curb deforestation. On the socio-economic level reforestation tends to enhance the social and economic wellbeing of the local community by increasing the potential of biomass production and thus income generation. Women in the village will be able to sustainably utilize the reforestation site resources. Moreover, the young generation will be supported by enhancing and building their capacities in reforestation and forest management. On the long run this will enhance habitat functionality and restore species diversity in the mountain by establishing scattered copses of several trees and shrubs. This will act as a source of seedlings and accelerate natural regeneration. Also with the aim of bringing connectivity among land patches, improve soil fertility, and imitating the natural dispersal of plants.

3-Previous Reforestation Experiences (RC)

Niha municipality has an experience in forestation that exceeds twenty years, mainly in planting Oak and Pine trees. Most of the forestation work that was done there was funded by the Ministry of Agriculture or by the municipality. Where more than 160,000 m² were reforested, with 70% survival rate. Furthermore, the Municipality of Niha has proved its success in reforestation where it has reforested around 6,000m² pine trees in the years 2011, 2012, and 2013 (2,000m² / year, survival rate exceeded 50%). And over the past years the municipality was mainly involved in the planning process as choosing the lands to be reforested, species to be used, all plantations, and monitoring process. Plantation techniques used include minimal irrigation, weeding and mulching; the municipality is looking forward to implement new techniques related to land and soil preparation. Note that Niha municipality is part of the Al- Shouf Cedar Society, as well as part of its committee. And over the past three years, ACS has been engaged in forestation/restoration work in the Shouf Biosphere Reserve, mainly through the Mediterranean Mosaics (MM) project, which seeks to address the threat that socio-economic and climate changes pose to extensive semi-natural, biodiversity-rich landscapes and protected areas around the Mediterranean Basin. The project is implemented in two biodiversity hotspots of Lebanon and Italy, where the socio-economic crisis of the rural society and the impact of global warming and climate change are speeding up the loss and degradation of the traditional mosaic landscapes and extensive agro-forestry systems. The MM project addresses the need to build “disturbance-smart” socio-ecosystems at the landscape level, by engaging local societies and decision makers in the formulation and subsequent put in practice of a shared “landscape vision”. In the meantime, the project addresses urgent needs to restore ecosystem connectivity and functionality, through the implementation of pilot fieldwork in priority sites. The MM project took off in July 2012. ACS, with the support of international technical assistance, developed an Adaptation and Restoration Plan (ARP) and started full field implementation in autumn of 2012, with the agreement of the local authorities. The ARP implemented by ACS covers an ecological corridor connecting the Beqaa Valley and the Ammiq wetland in the east to the Dalboun Forest on western slopes of the Shouf Mountains, through the watershed line and the Cedar habitat. So far, the forestation/restoration work has been implemented in seven sites along the corridor, with a mix of techniques consisting of direct sowing, planting of seedlings, fenced planting, direct sowing and seedling planting, for a total of approx. 47 Hectares. Note that a restoration plan was prepared and published for this project and approved by the

Ministry of Environment (MOE). Thus, the reserve can assist widely this municipality in the methodologies and guidelines that should be followed in the development and implementation of reforestation activities, especially that the reserve has a solid foundation and wide experience in the formulation of participatory forestation/restoration protocols and their implementation, and the development of monitoring and management plans.

4- Site & Stakeholder description

The site is called Ain Al Sherfa and al Marahat (property ID: 87), owned by the municipality and located in Niha village with a hilly topography, elevation 1,150 m > 1,550 m, and area of 225,7 ha.

4.1-Municipality Physical Description (RC)

4.1.1 Climate summary

The climate of the area covered by the project is characterized by cold winters with frequent precipitation as snow and rigorous summers with prolonged physiological drought. The annual average maximum temperature is 18.9 °C. August and July are the warmest months (28-29°C) followed by September and June (25-26 °C) and by May and October (21-22 °C). The annual average minimum temperature is 8.3 °C. January is the coldest month (0.8 °C), followed by February (2 °C), December (3 °C) and March (3.7 °C). Absolute minimum temperatures below zero occur from November till April, with the lowest temperatures between December and February (-9 °C).

The total annual precipitation is 1,012.3 mm. The months June-August have no precipitation, while May and September have precipitation below 20 mm, which is insufficient for the implementation of restoration work. Rainfall in October and April is still low (56-63 mm), and it becomes abundant between November and February (156-214 mm), mostly in the form of snow.

Based on this data, forest restoration work could take place between October and November, when precipitation is enough to generate good soil moisture, and temperatures are still warm enough.

Because precipitation in October is still quite limited and usually occurs during the end of that month, it will be important to monitor the precipitation throughout the month of October. Planting will be possible once the soil has received enough water to ensure suitable wet conditions in at least the first 30 cm of depth. As soon as these conditions occur, the planting/seeding operations should be implemented and completed as soon as possible, in order to avoid possible frost damages throughout November.

The sharp decline of precipitation in March-April, and the almost absence of rainfall in the following months advise against the undertaking of spring field restoration work, despite the favorable temperature. However, March-April are suitable months to start the sowing operations in the tree nurseries.

4.1.2 Soil

The physical characteristics of the soil are homogenous belonging to the red brown Mediterranean soils formed on hard marl limestone, are derived from Jurassic, Balthonian, Callovian to Oxfordian-Portladian marl limestone. With no active limestone, gypsum or salinity.

4.1.3 Flora and Physiological information

The municipality is characterized by the presence of a good green cover mainly including the following species. *Pinus pinea* to the north and east side of the plot / and shrubs, *Acer syriacum*, *Acer tauricolum*; *Arbutus andrachne*; *Berberis libanotica*; *Cedrus libani*; *Celtis australis*; *Juniperus drupacea*; *Malus trilobata*; *Juniperus oxycedrus*; *Pinus pinea*; *Prunus ursina*; *Quercus infectoria*; *Rhus coriaria*; *Rosa canina*; *Sorbus umbellatus*; *Styrax officinalis*. As well as *Cedrus libani* *Quercus infectoria*; *Prunus ursina* *Pinus pinea*; *Styrax officinalis*. *Juniperus drupacea*; *Berberis libanotica*; *Acer syriacum*, *Acer tauricolum*.

4.1.4 Hydrology, erosion problems and other issues

Hydrology within Niha municipality is the same as that of the SBR which is characterized by Surface water flows originating on the range are mostly seasonal but some are perennial. Underground water generates outflow rivers such as the Al Awali River (known as Al-Barouk river) and Damour River (known as Al-Safa river).The summit of the range is considered as a divide between two hydrological systems because of the difference between the two slopes of the

mountain. The eastern slope is much steeper and favors surface stream flows, whereas the western slope is less steep and favors ground water aquifers. The rivers that flow in the valleys are the major source of agriculture irrigation and supply a dozen Shouf villages with domestic water and some of the western Bekaa villages. It is also the main source of water for the Ammiq Swamp in the Bekaa. From an erosion point of view these soils are in a state of equilibrium due to good permeability, mask of calcareous fragments, good vegetative cover, and good drainage.

4.2- Reforestation Compartment Identified (RC, LU, RS)

4.2.1 Map of livestock activities

Within Niha there are around 10,000 heads of local herds(200 goat) and around 500 migrating head. The average length of the grazing season is from 6to 7 months. A kind of arrangements are done with the municipality as the shepherds are allowed to graze in specific areas, and must compensate partially for the private land owners as giving back some fertilizers/ milk etc.. the sources they use are mainly the foddors and water from the water springs available in the village. Note that there are many paths that can be used by the shepherds all providing similar service and currently the main paths followed by them include the following land areas: river region, shawi, al nabee, al marahat, kale al wadi, marah el zwayzer, soder al helkom, al deb fort, khalet al sahrij, ain el hajar, batoun, al halkoum, azibi (upper and lower) ras el talaa. Thus Reforestation and site protection will impose a negative effect on the livestock activity where they will be inhibited from entering certain sites. This impact can be reduced by allowing the graziers to graze in some other lands and organizing the paths that they can take.

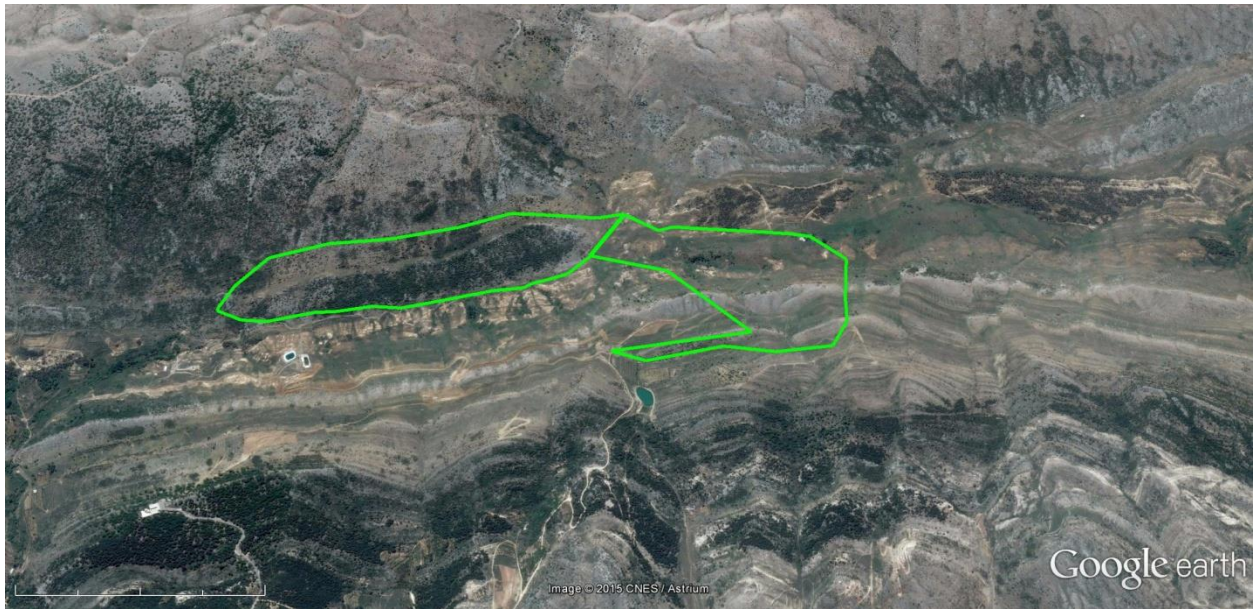


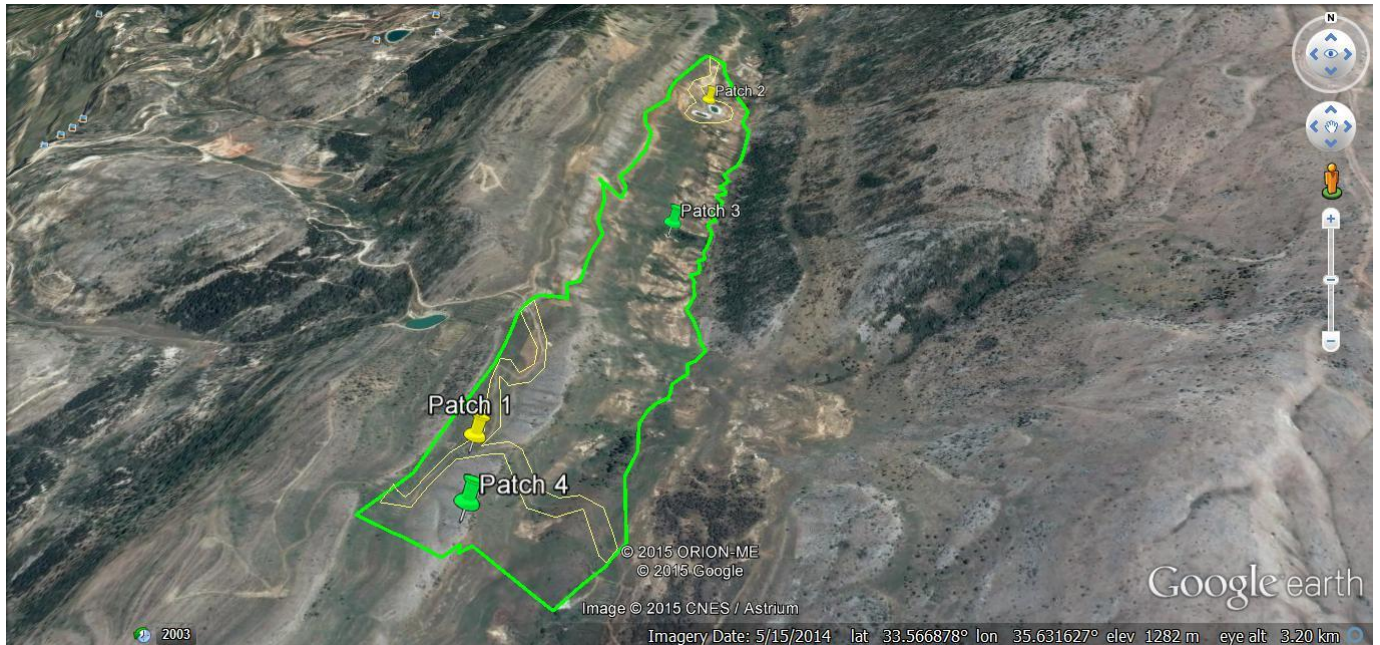
Figure: Map of Livestock Activities

4.2.2 Map of other constraints NA

4.2.3 Map of reforestation Block



Map of Reforestation Block



Proposed Reforestation Patches

4.2.4. Description of Reforestation Patches (RC)

The area was split into 4 patches, patch 1 and 2 will be following same scheme of plantation which is scheme number 2 where they will be planted for the purpose of recreation with species that have high economical value(as *origanum syriacum*...) and note that patch 1 and 2 are so easy to be accessed and actually share same features.

Patches 3 and 4 are a bit harder to be accessed on the long run by the local community so they will be planted with other species as identified in Scheme number 1(*Acer tauricum*, *Amygdalus*, *Berberis libanotica* , *Cedrus Libani*, *Crataegus ozarolus*, *Ggundelia tournefortii*, etc...), note that patches 3 and 4 share approximately same features where same rate of success can be maintained in both patches for same species.

4.2.4.1 Physiographic information

The site has the following coordinates W: Lat: 33.562034 Longitude: 35.628421 elevations: 1460m; N: Lat: 33.57960 Longitude: 35.633449 elevations: 1168m. Steepness range 10-30 / 30-60 / +60 with an area around 225, 7 ha, and 2km away from the nearest water source. Its elevation

ranges between 1,150 m > 1,550 m. And according to the Corine Classification(1999) the site belongs to the following Mediterranean levels:

- 1) the "Supra-Mediterranean Level" of vegetation which extends over the lower parts of the eastern and western slopes up to 1500 meters of altitude, with oak trees as dominant species, but on the western slopes the cedar trees dominate between 1050 - 1925 meters;
- 2) the "Montane Mediterranean Level" that covers both slopes between 1500 and 1900 meters with cedar dominant trees on the western slopes and absence of cedar trees on the eastern slopes where the oak and azarole trees take place.

4.2.4.2 Soil

Soil depth: 50-80 / >80 cm and stoniness level 15-40/>40 sized as 0,2 -20 cm. Rockiness % ranges from 1-15/15-40. The soil is homogenous belonging to the red brown Mediterranean soils formed on hard marl limestone, are derived from Jurassic, Balthonian, Callovian to Oxfordian-Portladian marl limestone, and the stone contents range from 80-90%. (Most of them are small stones)

4.2.4.3 Land use (past, current and potential)

Currently the land is not used it is abandoned, 50 years ago most of such land was planted with wheat and some cereals, since 30 years it has been transformed to become a grazing land. Later on, very small parts of it were reforested by pine trees and the survival rate is more than 50%.

4.3 Potential Schemes Identified for Each Block (RP)

Tow schemes were identified for the block to be reforested. The first is defined by the aim of protection, and landscape enhancement. With major species to be planted: *Acer tauricum*, *Amygdalus*, *Berberis libanotica* , *Cedrus Libani*, *Crataegus ozarolus*, *Ggundelia tournefortii*, *Malus trilobata*, *Prunus prostrata*, *Quercus calliprinos*, *Quercus Infectoria*, *Sorbus flabellifolia*, *Sorbus torminalis*, *Styrax officinalis*. The plantation density is around 700 seedling/hectar . The 2nd scheme is identified with a social purpose of ensuring Recreation and some economic benefits for the community. Where this scheme will be planted with species of high economic values where people can access it easily (just aside the road). Major species include: *Origanum Syriacum*, *Rhus Coriara* and *Pinus Pinea*. And on the long run this applied scheme will be regarded as a picnic area... The soil will be prepared by digging in the soil by 40cm depth and 40cm width, then dig with the auger additional 20 cm depth (60 cm in total). Irrigation will be provided only if needed

twice within the first year, and once during the second year. Water will be provided to the restoration site by tractors or trucks transporting water tanks. Irrigation will be done with portable, hand-moved hoses, at a rate of approx. 20 l/plant. Protection will involve the shepherds to participate in the restoration process, using the individual protectors if needed, and fencing on a small scale in cooperation with the shepherds and locals. Mulching is one of the plantation techniques that will be used. Maintenance during the first five years will include weeding, monitoring of the site and watering if needed. Foreseen management during the first 25 years include pruning and thinning of additional logs, regular maintenance of the site.

4.4 Stakeholder Description

4.4.1 Land Users

Three major groups of land users are recognized supporting this reforestation activity. They are identified by the shepherds where there are around four shepherds from outside the village but they come to graze within Niha lands, and other five from Niha. They are concentrated mainly within the paths and corridors between lands. Reforestation might inhibit them from entering some sights however this will be managed from the municipality side to organize the paths that they will be taking. The desired species that they can benefit them on the long run after some years are the *Quercus calliprinos* and *Quercus infectoria*.

The second group is identified by the beekeepers who are currently above 20. Most of them produce honey for personal use and few others for selling. Reforestation will affect them positively where their honey production will be increasing on the longrun. The species that will boost their production and assist them include the origanum, pine trees, Oak trees, and Cinchona trees.

The third group includes the herb gathering groups that are around 10. They tend to gather the edible and medical herbs from Niha Mountains. Restoration will enhance the biodiversity and the green cover thus giving a chance for better and more enhanced herbs growth. They support reforestation but can participate in plantation process, monitoring but as a paid work. The species that they recommend include: *Micromeria myrtifolia*, origanum, gundelia, rhus coriaria, *Salvia*

fruticosa. With their major aim to enhance herbal growth and prevent soil and land erosion on the long run.

4.4.2 Reforestation Supporters

The reforestation supporters include the voluntary stakeholders that are interested to participate during the reforestation process (e.g. associations). As Niha Public School with its 150 students who usually participate in reforestation days and are ready to assist in the plantation process and the awareness raising. Their desired use of reforestation is for protection and recreation. Also, Shouf Biosphere Reserve volunteering unit in Niha who is interested in Capacity Building, raising awareness and assisting in monitoring and protection of the natural wealth and can assist in the plantation process, raising awareness, monitoring and protection. Niha Scouts unit- 40 to 50 members, who usually engage in raising awareness and environmental protection, can assist in reforestation days according to availability, with a desired use of recreation and protection. Child care Association, around 120 members, usually participates in activities related to awareness raising with the aim of protection. Moreover, the Social Solidarity Association in Niha, which is composed of around 60 members involved in capacity building, can assist in reforestation and protection with their aim behind reforestation to ensure good protection, more economical production and for recreation. Species desired include pine trees, olive trees, crataegus trees, styrax officinalis and prunus dulcis

4.5 Economic Activities Linked to Forest Resources

4.5.1 Livestock activities

Actors involved in the livestock activities include mainly shepherds and grazers coming from Niha and outside Niha. Shepherds usually benefit from the forests and lands by feeding their herds on the grasses, forbs and shrubs available in the rangelands. Rangelands are a good resource to ensure the economic well being and stability of the shepherds, livestock can have a negative effect on the flora, however they have a positive effect on the seeds dispersal, fertilization, turning up the soil, fighting forest fires, decrease plant competition. Notice that Niha municipality and within the frame of protecting the lands they showed over the past years a big support and concern to find good solutions taking into consideration the shepherds interest.

4.5.2 Non-Timber forest products utilization

As mentioned previously, non timber forest products utilization is mainly related to the herb collector groups that tend to collect and benefit from the rich flora that is available and this generates for the local community good economical and health benefits. Some make a living from collecting and selling those medicinal and edible plants. Also beekeepers are involved here, where they also benefit from the rich and healthy green cover that can ensure a good habitat for the bees and better honey production.

4.5.3 Other harvesting activities

Other activities can include the collection of logs and broken branches from the forests. Note that forests can be sustainably managed by ensuring sustainable pruning and thinning of the logs to produce biomass briquettes though now it is not that widespread in Niha however on the long run this process generates many economical and environmental benefits.

5 Action plan

5.1. Reforestation Executive Implementation Plan

5.1.1 Activities Description

-Map project area with GIS and gather information on ecology, climate evolution, socio-economics etc. ACS will carry out this activity in collaboration with Niha municipalities and the environmental community .The mapping exercise has the objective of gathering knowledge that will be needed for the fieldwork and the subsequent management and monitoring of the sites. Workshops will be organised, where local stakeholders will share information on their territory. The output of this activity is a a participated map of the project site on GIS support.

- Develop participatory forestation plan in collaboration with municipalities and communities. The output of activity 1 will pave the way for the generation of the forestation/restoration plan,

through a limited series of workshops/meetings that will be facilitated by ACS, with the support of the committee and the municipality. The plan must take off with a vision on the future asset of the land and the role of the municipality and community on its management and use, and will include a detailed specification regarding objectives, actions, methodology, seedlings and species, equipment, material and labour force, timing, potential problems and risk, factors to be taken into account, etc... The plan will be validated by ACS and the involved municipality, and published on the web site of SBR.

- *Implement forestation/restoration work.* Once the plan is finalized and agreed, and seedlings will be available, the forestation/restoration work will take off in autumn usually after first rain fall during years 2 and 3. ACS will coordinate the role, inputs and work and will secure the implementation of the plan according to the agreed deadlines. Daily workers will be hired to implement part of the work, the municipality, committee and other stakeholders are expected to contribute, according to availability and abilities. Regular visits of the whole process will be documented with pictures and videos, for future replication.

5.1.2 Work plan

During year 1 ACS will be organizing workshops (logistics, etc...), appointing GIS expert, following up the publication process. Environmental committee/ Municipality: assisting in data, info collection needed to generate the studies and plans. The outputs will be Forms of the preparatory stages completed+ a final GIS map-Participatory reforestation plan and an MOU between PMU and consortium partners. In fall of year 2 and year 3 forestation work will be implemented.

ACTIVITY Months	SUB-ACTIVITY (Month)	PERSON RESPONSIBLE Main responsible(s) in bold	ESTIMATED COSTS (RESOURCES NEEDED)	EXPECTED OUTPUT	DEADLINE	COMMENTS
-Develop participatory forestation/restoration plan	Research/studies and data collection GIS Mapping Reforestation plan development Evaluation and approval of the PRP	ACS: organize workshops (logistics, etc...), appoint GIS expert, follow up the publication process Environmental committee/ Municipality: assist in data, info collection needed to generate the	- workshops/meetings (300 \$/workshop) - GIS Expert(300\$/day*2days) - Transportation costs(80\$/day) - Publication costs (printing+ design) (6\$/copy)	-Forms of the preparatory stages completed+ a final GIS map - Participatory reforestation plan -MOU between PMU and consortium partners	End of year 1	

ACTIVITY Months	SUB-ACTIVITY (Month)	PERSON RESPONSIBLE Main responsible(s) in bold	ESTIMATED COSTS (RESOURCES NEEDED)	EXPECTED OUTPUT	DEADLINE	COMMENTS
		studies and plans				
<i>-Implement forestation/restoration work</i>	-land preparation -seed/seedlings production -plantation, mulching maintenance/protection	ACS: land preparation and follow up on all plantation process Committee/ municipality: maintenance, protection, managing and organizing grazing, reporting and communicating with ACS regarding problems, threats that might arise.	-Cost of seedling (1.2\$/seedling*700) -Land preparation (1.5\$* 700) - maintenance/protection - lump sum 700 \$ -daily paid workers (20\$/day) -transportation costs(80\$/day) - Fencing/protectors if needed -water supply if needed 600 \$ -Rent of vehicles to transport plant materials etc... 70\$/day	Niha site reforested (225,7 ha)	September-October-November Year2:100 hectar Year3:100 hectar	Cost of daily paid workers' days for all the planting (year 2 and replacement of dead seedlings in year 3) and irrigation works when needed.

5.1.3 Budget

ACTIVITY/SUB-ACTIVITY		UNITS type	Number of UNITS	UNIT COST (\$)	TOTAL COST (\$)	OWNED RESOURCES	RESOURCES NEEDED
<i>A.1 Develop participatory forestation/restoration plan</i>							
Materials/Equipment (include maintenance costs)		0	0	0	0		
workshops		Per day	2	300	600		
Subcontracting	publications including design, editing, printing etc.	Per unit	2500	6	15,000		
ITAs		Per day	9	350	3150		
GIS expert		Per day	2	300	600		
TOTAL COST A.1.					19,350		
<i>A.2 Implement forestation/restoration work</i>							
Labour	daily paid workers	Per day	800	25	20,000		
	Foreman	Per day	800	70	56,000		
Materials/Equipment (include maintenance costs)	Plant material(seedlings, seeds)	Per plant	700 plant/ hectare	1.2	168,000		

					(700 seedling/Ha*1.2\$*200 Ha)		
	land preparation	Per plant	700plant/ hectare	1.5	210,000		
	Rent of vehicles	Per day	60	70	4200		
	Maintenance (water management if needed will be part of the maintenance)	Per plant	700plant/ hectare	1	140,000		
	Fencing /protection	lumpsum			10,000		
Subcontracting							
Indirect costs (i.e. overhead/operating resources)							
TOTAL COST A.2					608,200		

Note that the cost of Human resources (1 administrative officer, 1 field officer) and the the transportation costs are computed alone in a separate section for the whole projects activities.

5.2 Livelihood Support Plan

5.2.1 Activities Description

- Carry out gap analysis of livelihood support needs of partner municipalities. ACS along with the assistance of the municipality and committee will undertake an analysis of the specific capacity and needs of local community. The analysis will be carried out through meetings, workshops, interviews, and might be by the compilation of questionnaires. The output of this activity will feed the livelihood support planning work. By this we can have a better idea about the livelihood economy and potential areas of expansion.

-The capacity building plan will include training sessions, field visits, and other activities. The forestation and restoration sites of the ecological corridor implemented by the MM project will be an important ground for the practical execution of the field training. In addition to some other activities (as providing the locals with some material to support them etc...)

- Locals will have a good facilitated access to loans to the members of the local communities who are willing to form an association or cooperative, or create an enterprise to start their own supporting business. Priority will be given to women and youth or to the association of several members from the same community. ACS will facilitate access of these beneficiaries to the “Cedar Loan Programme” that provides financial support up to 3,000 USD for the kick-off of new sustainable business in the rural communities living around SBR. Eligible business will include: collection and elaboration of NTFP (medicinal and aromatic plants, spices, mushrooms, fruits and berries, honey etc.); services related to sustainable tourism in mountain/forest habitats (guiding, guesthouses), or energy-related business (biomass). Finally, ACS will commit to support and assist in the marketing/sale of the products or services generated by the new entrepreneurs, while these will commit to the implementation of an agreed work plan to set up the business, and to comply with the quality standards required by ACS. The new enterprises will also be advertised through the communication channels of the applicant, especially the web site www.shoufcedar.org. This will act as a bedrock support for the local community.

5.2.2 Work plan

ACTIVITY Months	SUB- ACTIVITY (Month)	PERSON RESPONSIBLE Main responsible(s) in bold	ESTIMATED COSTS (RESOURCES NEEDED)	EXPECTED OUTPUT	DEADLINE	COMMENTS
-Support local community livelihoods on socio economic levels	<p>- Carry out analysis of current state of the livelihood economy and potential areas of expansion</p> <p>Conduct workshops/training</p> <p>Field visits</p> <p>Some other activities (as providing the locals with some material to support them etc...)</p>	<p>ACS: conduct workshops and trainings needed</p> <p>Committee: assist in the analysis of the livelihood economy</p> <p>Municipality: determines the potential areas of expansion and areas where the community can be supported</p>	<p>- Workshops/training sessions(400\$/workshop)</p> <p>-other Activities to support the local community- lumpsum</p>	Locals trained and supported through a specific capacity building program	Year 6	

5.2.3 Budget

ACTIVITY/SUB-ACTIVITY		UNITS type	Number of UNITS	UNIT COST (\$)	TOTAL COST (\$)	OWNED RESOURCES	RESOURCES NEEDED
<i>A.3 Support local community livelihoods on the socioeconomic levels</i>							
Labour							
Materials/Equipment (include maintenance costs)							
Other direct costs (e.g. travel, telephone, consumables)	cost of seminars/workshops	Per day	7	400	2,800		
Other supporting activities as providing some material to the locals as seedlings, ensuring better rural development etc...		Lump sum			30,000		
Indirect costs (i.e. overhead/operating resources)							
TOTAL COST A.3.					32,800		

Note that the cost of Human resources (1 administrative officer, 1 field officer) and the the transportation costs are computed in a separate section for the whole projects activities.

5.3 Risk and Contingence Plan

The main risks that can jeopardize a successful implementation of the identified actions, and the mitigation measures that can be adopted by the project team include:

- The increased climate variability (i.e. drought, high temperature, extreme events) might hamper the successful completion of the forestation work which can be jeopardized by advanced plantation techniques that can be implemented to maximize adaptation and resilience of the new forested/restored lots to the impact of climate change.
- Risk imposed by shepherds and grazers which can be mitigated by ACS working closely with the municipality and the consortium to ensure good agreements with the shepherds, assigning guards, identifying some specific paths for grazing and thus without impacting them negatively.
- Difficult/slow interaction and involvement of local community/stakeholders where ACS will be constantly present in the field and within the municipality, together with its broad spectrum of work will fuel networking and more community interaction will be able to overcome this, and also through trainings and capacity building plans.
- Failing to gather all the information and data needed to effectively carry out all the actions, however ACS has been active on forestation and ecosystem management for many years, and thus ACS can provide a good tracking and provision of all needed data and information and implementation in a timely fashion.

5.4 Monitoring, Evaluation and Reporting Plan

5.4.1 Activities Description

Includes site protection and monitoring which will be maintained by the municipality, the committee assisting ACS in the monitoring process and the reporting process-survival rate check, and ACS report back to the PMU the results of monitoring and evaluation process. The final objective will be the survival of seedlings at the end of the project. Dead seedlings will be replaced, following the same planting procedures. In addition, research activities might be needed at this stage to ensure good evaluation.

5.4.2 Work plan

ACTIVITY Months	SUB- ACTIVITY (Month)	PERSON RESPONSIBLE Main responsible(s) in bold	ESTIMATED COSTS (RESOURCES NEEDED)	EXPECTED OUTPUT	DEADLINE	COMMENTS
Monitoring, evaluation and reporting		Municipality: site protection and monitoring Committee: assist ACS in the	Transportation costs to the site etc...(80\$/days)	The reforested site well protected and monitored, targeted	Year 6	

		monitoring process and the reporting process-survival rate check- ACS: report back to the PMU the results of monitoring and evaluation process.	Reporting costs	community well supported		
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5.4.3 Budget

<i>A.3 Monitoring, evaluation and reporting</i>							
Labour	ITAs-research and studies	Per day	80	350	28,000		
Reporting costs		Lump sum			5,000		
Other direct costs (e.g. travel, telephone, consumables)							
Subcontracting							

Indirect costs (i.e. overhead/operating resources)						
				828,710		

Note that the cost of Human resources (1 administrative officer, 1 field officer) and the the transportation costs are computed alone in a separate section for the whole projects activities.

Total proposed Budget for whole project including the Human Resources and Transportation:

ACTIVITY/SUB-ACTIVITY		UNITS type	Number of UNITS	UNIT COST (\$)	TOTAL COST (\$)	OWNED RESOURCES	RESOURCES NEEDED
Human Resources and Transportation for the whole project's period -all activities	*1 administrative staff	Per month	72	1000	72,000		
	*1 field coordinator	Per month	72	800	57,600		
	*Transportation cost	Per month	72	80	5,760		
Total cost					135,360		
<i>A.1 Develop participatory forestation/restoration plan</i>							
Materials/Equipment (include maintenance costs)		0	0	0	0		
	workshops	Per day	2	300	600		
Subcontracting	publications including design, editing, printing etc.	Per unit	2500	6	15,000		
ITAs		Per day	9	350	3150		
GIS expert		Per day	2	300	600		

TOTAL COST A.1.						19,350		
A.2 <i>Implement forestation/restoration work</i>								
Labour	daily paid workers	Per day	800	25		20,000		
	Foreman	Per day	800	70		56,000		
Materials/Equipment maintenance costs)	(include	Plant material(seedlings, seeds)	Per plant	700 plant/hectar	1.2	168,000 (700 seedling/Ha*1.2\$*200 Ha)		
		land preparation	Per plant	700plant/hectar	1.5	210,000		
		Rent of vehicles	Per day	60	70	4200		
		Maintenance(water management if needed will be part of the maintenance)	Per plant	700plant/hectar	1	140,000		
		Fencing /protection	lumpsum			10,000		
Subcontracting								
Indirect costs (i.e. overhead/operating resources)								
TOTAL COST A.2						608,200		
A.3 <i>Support local community livelihoods on the socioeconomic levels</i>								
Labour								
Materials/Equipment (include maintenance costs)								

Other direct costs (e.g. travel, telephone, consumables)	cost of seminars/workshops	Per day	7	400	2,800		
Other supporting activities as providing some material to the locals as seedlings, ensuring better rural development etc...		Lump sum			30,000		
Indirect costs (i.e. overhead/operating resources)							
TOTAL COST A.3.					32,800		
<i>A.3 Monitoring, evaluation and reporting</i>							
Labour	ITAs-research and studies	Per day	80	350	28,000		
Reporting costs		Lump sum			5,000		
Other direct costs (e.g. travel, telephone, consumables)							
Subcontracting							
Indirect costs (i.e. overhead/operating resources)							
					828,710		

Timeline for whole project:

ACTIVITY (OR SUB- ACTIVITY)	YEAR 1												YEAR 2												YEAR 3												YEAR 4											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
<i>Develop participatory forestation/restoration plan</i>																																																
<i>Implement forestation/restoration work</i>																																																
<i>Support local community livelihoods</i>																																																

Annex: Distribution of different species to be planted

			Seedling	Direct sowing
1	Acer tauricum	قيقب تورس	5	
2	Amygdalus	لوز	15	
3	Berberis libanotica	بربريس	25	
4	Cedrus Libani	ارز	15	
5	Crataegus ozarolus	زعرور اصفر	25	
6	Ggundelia tournefortii	عكوب	25	
7	Malus trilobata	تفاح بري	25	
8	Origanum syriacum	زعتر	100	
9	Pinus pinea	صنوبر مثمر	340	120
10	Prunus prostrata	كرز بري	10	
11	Prunus ursina	برقوق	20	
12	Quercus calliprinos	سنديان		50
13	Quercus Infectoria	ملول		30
14	Rhus Coriaria	سماق	25	

15	Sorbus flabellifolia	غبراء المغص	10	
16	Sorbus torminalis	غبراء مروحية الورق	10	
17	Styrax officinalis	حوز	50	

700 200

Total / Ha

900
