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LEBANON REFORESTATION INITIATIVE

FIREFIGHTING VOLUNTEERS SQUADS CREATION IN 4 OF LRI VILLAGES



BACKGROUND:

The Republic of Lebanon has been renowned throughout history for its rich forests and iconic cedars. Today, forests cover approximately 13 percent of the total land area of Lebanon, making it one of the most forested countries in the Middle East. Three sites in Lebanon have been designated as UNESCO biosphere reserves, underscoring the country’s rich biodiversity of plant species within its forests. Forests also play an important role in the rural economy providing economic opportunities through the harvest of non-timber forest products. However, anthropogenic activities, such as harvesting trees for fuel wood, clearing land for urban and agricultural development, livestock grazing, and wild-land fires have decreased forest cover by more than 20% since 1960.

The US Forest Service has been engaged in Lebanon since 2004, providing technical exchange and promoting mutual understanding between the US Government and Lebanese partners. With support from the United States Agency for International Development (USAID), the USFS supports Lebanese organizations in the forestry sector through the Lebanon Reforestation Initiative (LRI). The LRI is a national reforestation program providing technical assistance on sustainable forestry practices and wildfire control in economically depressed and environmentally degraded regions of Lebanon. In order to restore Lebanon’s natural forests, the USFS and its Lebanese partners are enhancing native tree nurseries, planting several hundred thousand native trees throughout the country, and promoting advanced reforestation practices to continue reforestation into the future.

USFS technical assistance to Lebanon focuses on improving the quality of native tree seedlings, promoting best practices in out-planting and forest mapping techniques, and wildfire prevention and response. The LRI works closely with native tree nurseries and local municipalities to link buyers and sellers of native tree seedlings. Creating these links improves survivability of native trees in the field and generates economic opportunities. The LRI is also developing advanced web-based maps that will assist out-planting experts in selecting reforestation sites and identifying appropriate species for these sites. This information is shared with other conservation actors in Lebanon to advance biodiversity conservation beyond just the LRI program.

Wildfire is one of the biggest threats to Lebanon’s forests. LRI works with local partners to train municipal volunteer firefighters to provide a first response to wildfires in rural areas that are less accessible to government responders. The US Forest Service also works closely with the Lebanese Armed Forces, Civil Defense and other partners to develop effective wildfire response strategies that can be implemented nationwide.

In addition to the technical work undertaken, the project has an economic and educational impact in local communities by hiring individuals to plant, monitor, and protect trees. Community engagement specialists help encourage social commitment to tree planting and wildfire control through awareness programs. With sound technical and scientific assistance, the LRI is setting the groundwork for Lebanon’s forests to thrive in the years to come.

DISCLAIMER:

This manual is made possible by the support of the American people through the United States Agency of International Development (USAID). The content of this manual is the sole responsibility of the US Forest Service and does not necessarily reflect the views of the United States Government.

INTRODUCTION:

In the framework of the national strategy for forest fire management in Lebanon ratified by the Lebanese government in September 2009, the Lebanon Reforestation Initiative (LRI) and the Association for Forests, Development and Conservation (AFDC) have joined efforts to conduct a pilot project in four of the villages where LRI is conducting its activities. The project consists of training volunteers on firefighting techniques and tools as recommended under the “responsiveness” article in the national strategy. The same article stipulates that the possibility of setting volunteer firefighting squads from the local communities should be addresses in Lebanon based on similar cases in Turkey, Australia, and some regions of Spain and some villages in Lebanon. It also adds that the unit creation should comply with the local community engagement toward enhancing the forest’s economic, social, and cultural value. As for the role of these squads, it can be complementary and sometimes supplementary to the Civil Defense forces.

In fact, AFDC’s previous experience was deemed successful in eighteen Lebanese villages where it engaged volunteers in forest fire management, especially in terms of quick responses within the first twenty minutes of the fire breakout or twenty minutes further to an ignition.

The aim of this collaboration between AFDC and LRI was to evaluate and assess the role of such units and to set guidelines for the procedures of their creation while involving all firefighting stakeholders in a given village.

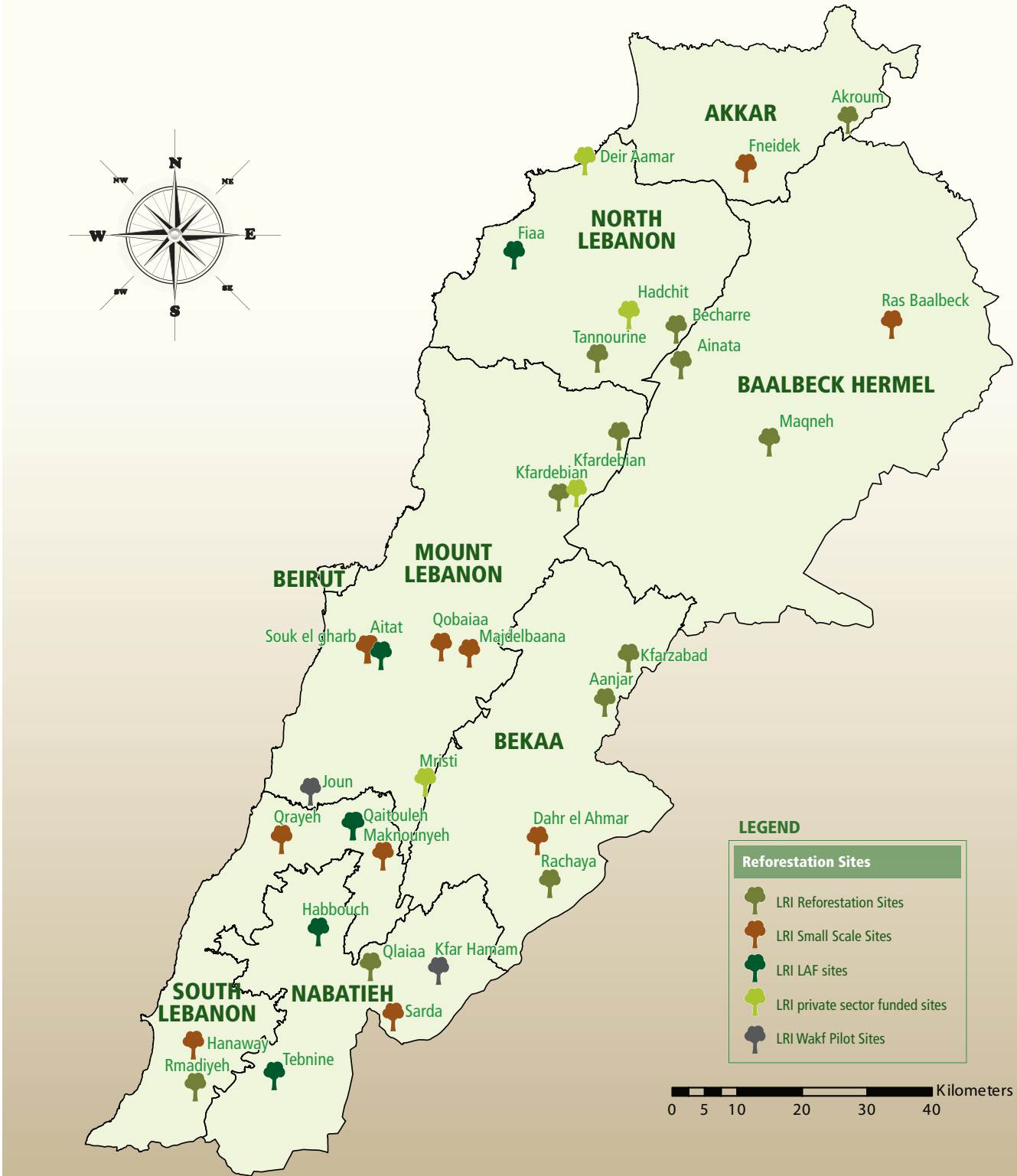
IDENTIFICATION OF VILLAGES:

Among the ten LRI reforestation sites, four villages were found to have considerable fire risk based on the fire risk map developed by AFDC in 2007. Although the risk categories were classified into four gradual classes (moderate, high, low, and no risk), only two categories were taken into consideration based on risk presence (“risk”) or lack thereof (“no risk”).

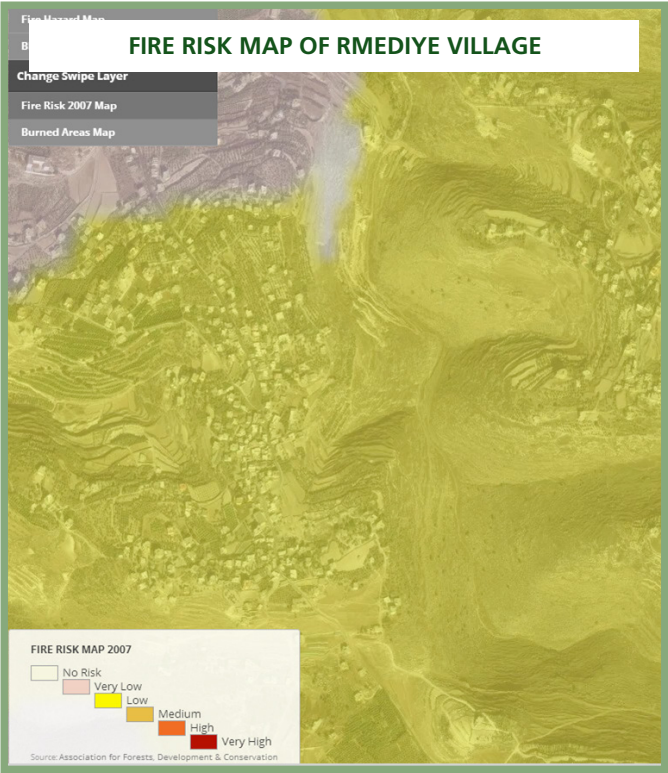
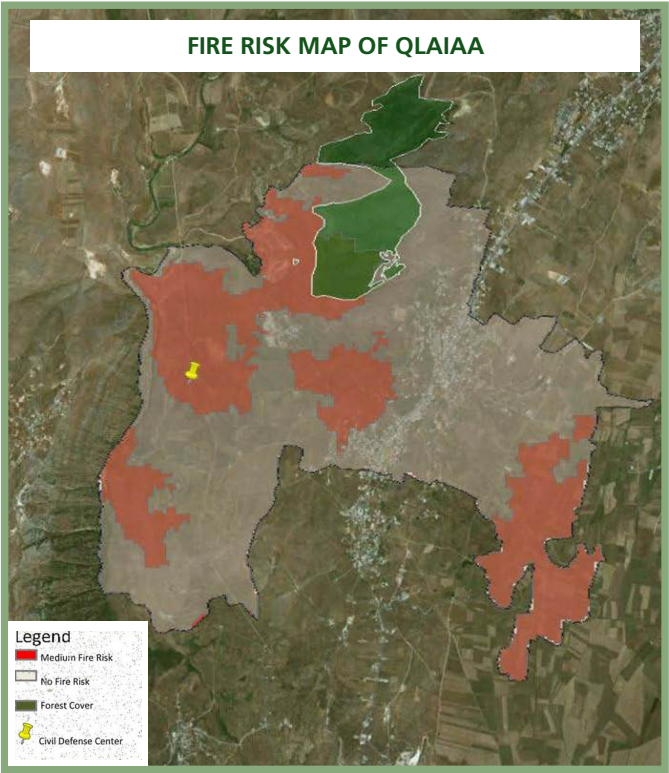
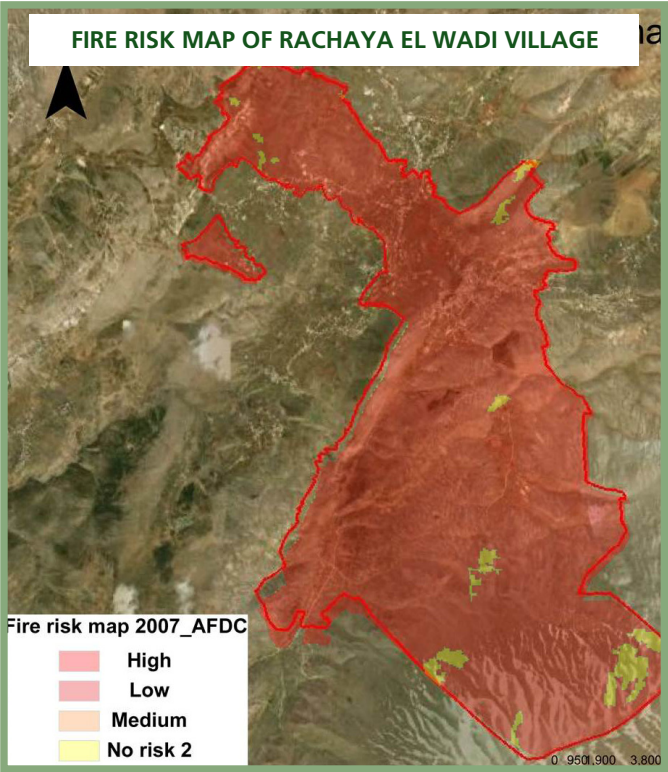
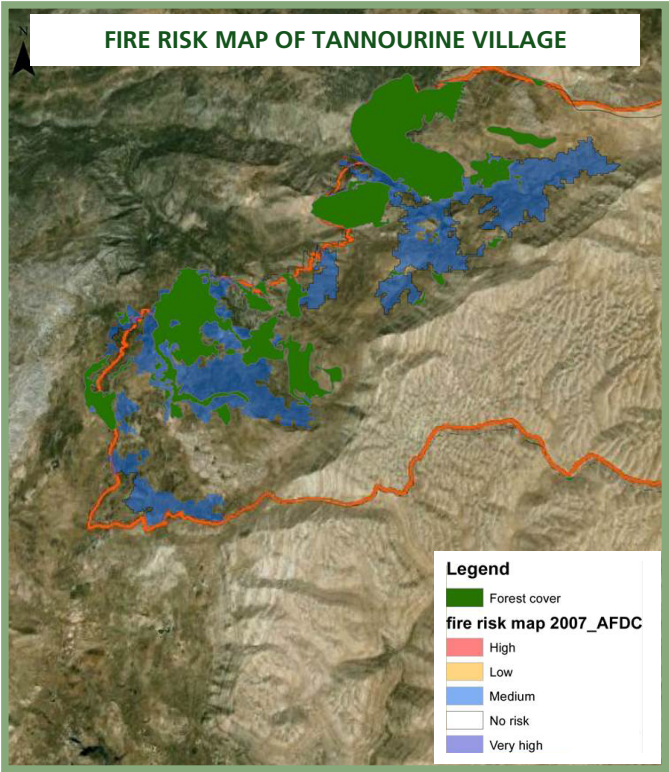
The secondary criterion was the commitment level of the villages’ communities assessed through ground knowledge.

The four villages selected were Tannourine, El-Qlaiaa, Rachaya, and Rmadiye

LRI REFORESTATION SITES MAP - 2014



| | Location | Altitude Range | Fire Risk (check the below map) | Background and Fire History: (based on local reports and the burned area map 2012 -UOB LRI) | Nearest Civil Defense Center |
|------------|--|----------------|---------------------------------|--|--|
| Tannourine | Located in the northern part of Lebanon. In the heights of the casa of Batroun. | 1300 - 2000 m | Medium risk | Several severe fires have occurred in the last few seasons. They were sometimes hard to contain and barely accessible. No fires greater than 0.06 ha were detected during the last decade. | A Civil Defense center is based in the village. It consists of 3 to 4 volunteers and is equipped with a fire truck. |
| El-Qlaiaa | It is a border village in south east Lebanon in the casa of Marjayoun. | 300 - 700 m | Medium risk | According to the community, several small fires have occurred in the last few seasons, but no fire has exceeded a surface of 0.06 ha. | An active Civil Defense center is based in the village and is equipped with a truck but lacks volunteers. |
| Rachaya | It is located in south east Lebanon, in the west Bekaa caza near the Syrian border and mount Haramoun. | 1000 - 1500 m | High risk | Rachaya had several small fires, mainly in the newly reforested site, most of which were due to human activity. No fire that exceeds the surface of 0.06 ha has occurred in the last few decades. | An active Civil Defense center is based in the village and is equipped with a fire truck but lacks volunteers. |
| Rmadiye | It is located in South Lebanon in the caza of Tyr | 200 - 300 m | Low risk | A fire occurred in the newly reforested site last season and several small fires were reported, all of them caused by human activity. No big fire has occurred in the village in the last decade. Several fire threads surround the village. | Unfortunately, the nearest Civil Defense center is thirty minutes away in the city of Tyr. Alternatively, a local Civil Defense group was created out of young volunteers and headed by a municipal member. This group is in close contact with the Civil Defense center in Tyr. |



ACTIONS TAKEN:

Actions taken in the villages consisted of volunteer-recruitment conducted in two different methods:

FIRST METHOD: CALL FOR VOLUNTEERS:

In the villages of Tanourine, Rachaya, and Qlaiaa, a call for volunteering was published through posters displayed in public places in each village.

The communicated message targeted young people interested in learning about wildfire prevention.



SECOND METHOD: TRAINING OF LOCAL UNITS:

Since there was a volunteer unit already active consisting of local young men and headed by a municipal member in Rmediyeh, two trainers from the AFDC prepared and conducted trainings on forest fire prevention techniques combined with live simulation on firfighting tools and maintenance.

In both methods, the municipalities expressed high interest since the main purpose was the protection of the newly reforested sites as well as old standing forest .

PARTICIPANTS BACKGROUND IN THE FIRST METHOD:

Rachaya: Thirty volunteers attended the two-day training. They were mostly LRI site outplanting workers, Civil Defense volunteers, and young professionals in the village, and retired workers. The age range started at twenty-five years.

El-Qlaiaa: Eight students attended the training. Ages ranged between sixteen and twenty years. They were all citizens of El-Qlaiaa, but most spent only weekends and holidays in the village. Despite their temporary staying in their village, they showed a big interest in attending the training.

Tannourine: Five volunteers responded to the call and showed interest in attending the training. Some of them were citizens of Tannourine and volunteers in Tannourine Nature Reserve and others spent their summer there. They have different backgrounds and their ages varied between twenty to twenty-five years.

The two-day training took place in Ramliyeh Hostel during two consecutive weekends.

PARTICIPANTS BACKGROUND IN THE SECOND METHOD:

The need to train the already set unit arose out of the action plan roundtable. This unit was created to cope with the lack of a Civil Defense center since the nearest one was fifteen kilometers away. Almost all fifteen volunteers and their superior attended the two-day training that took place in the municipal premises.



TOOLS:

In order to be adequately organized, each squad was equipped with a set of hand tools donated to the municipality through an in-kind agreement signed between LRI and head of the municipality.

Both parties agreed to make the tools available for the volunteers to use them in the event of fire. During the two-day training, AFDC's trainers took the volunteers through importance of each tool, its usage on the field as well as its maintenance while stored and after usage.

Throughout the simulation process, security and safety of the volunteers were taken into consideration, an individual set of ear, eyes, and neck protection equipment were used.

The tools were as follows and could be classed in four categories:

- Cutting tools;
- Cleaning tools;
- Safety equipment;
- Communication tools.

| ITEM | | |
|----------------------------|---|---|
| Chain saw | It is a tool used to cut flammable material |  |
| Backpack firefighting pump | It is a simple portable mobile reservoir that provides the user with water during firefighting operation. |  |
| Swatter | It consists of a handle and a rubber lamella and is used to stop the oxygen supply of the fire. |  |
| Triangle hoe | A cutting tool used to reduce fuel. |  |
| Pulaski fire axe | A cutting tool combining an axe and an adze in one head. It can be used to dig soil and chop the fuels. |  |

| | | |
|------------------------|--|---|
| Firefighting shovel | Cleaning tool used to remove the scalped material and to clear the soil. |  |
| McLeod rake | It is a cleaning tool combining a large hoe-like blade on one side and a tined blade on the other. |  |
| Water pack | Safety equipment to prevent dehydration of the user. |  |
| PR radio | Used to facilitate the communication between volunteers during firefighting. |  |
| Firefighting gloves | Fire resistant gloves to protect the user's hands. |  |
| Firefighting helmet | To protect the user head from falling items. |  |
| Ear and neck protector | To protect the user neck and ears | |
| Goggles | To protect the user eyes. | |

CERTIFICATE DISTRIBUTION:

Few months following the training, a roundtable was organized in each of the four villages.

The main objective of these roundtables was to ensure the sustainability of the created units and encourage stakeholders to initiate local committees.

These roundtables were entitled, "Certificate Distribution Session and Firefighting Stakeholders Gathering".

AFDC's representatives presented an overview of a protocol inspired by the national plan to reduce wildfire risk at the village and caza levels.

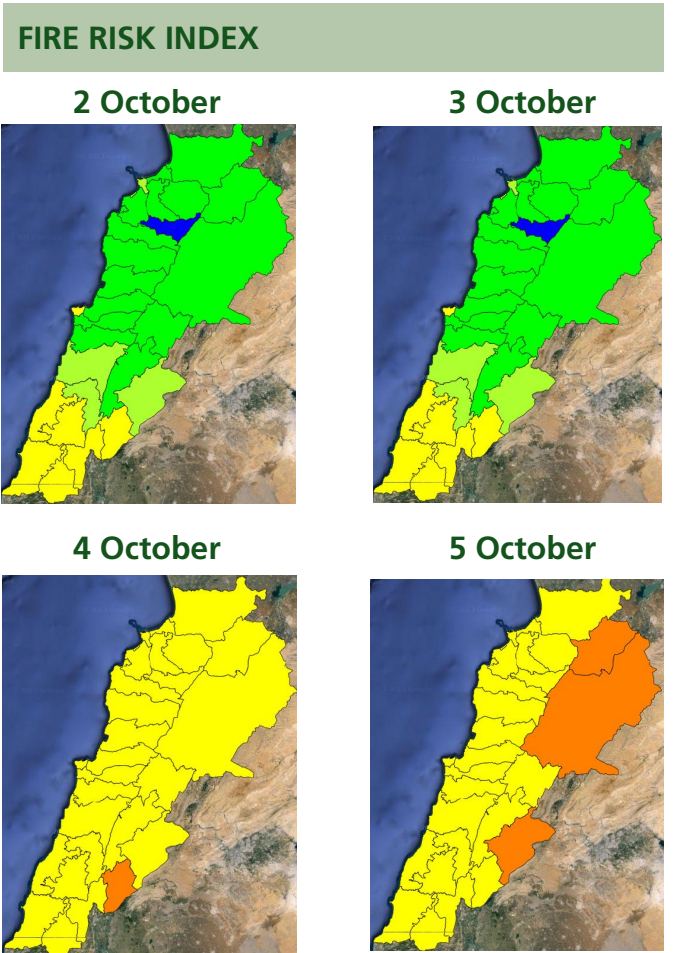
The invitees to the roundtable consisted of the head of the municipality and municipal members, the volunteers, the nearest army base contacted through the Army Command, the nearest Civil Defense center, the Red Cross representative (if present in the village), and a representative from both the LRI and the AFDC.

The protocol recommends the coordination between the gathered stakeholders in a way that organizes their work within a committee without adding any extra burden on any of them.



The protocol also detailed the measures taken before, during, and after the occurrence of fire, described through an awareness poster.

The participants were also informed, about the forecast fire bulletin emitted daily by the Civil Defense operations room located in Beirut.



Page of the Civil Defense bulletin showing a forecast of the fire risk for four consecutive days

1- A poster detailing the measures that should be taken before, during, and after a wildfire occurrence.



2- A template for an emergency phone list that contains phone numbers of persons to be contacted in the event of fire.

| لائحة للاتصال في حال الطوارئ | |
|---|--|
| رئيس البلدية | |
| مسؤول مشروع التحريج في لبنان في اللجنة البيئية في البلدية | |
| حارس الغابة | |
| مسؤول الدفاع المدني في الرماحية | |
| الدفاع المدني | |
| الجيش اللبناني | |
| المتطوعين | |
| للحصول على معدات مكافحة الحرائق اليدوية، التواصل مع | |

Description of the roundtable agenda:

- Presentation of the LRI reforestation project in the village;
- The fire risk reduction protocol at the municipal and caza levels and the importance of coordination between different stakeholders;
- Review of the fire forecast bulletin;
- Presentation of the role of the trained volunteers;
- Presentation of the roles of the municipality, Civil Defense, the Lebanese armed forces, and other local organizations;
- Setup of the follow-up activity;
- Design of a patrol reporting format.

The protocol emphasized the prevention measures that should be taken and the early response in case of fire, all that based on the issued bulletin that gives a 72-hour forecast and contains a risk indicator. This risk bases itself on fixed and variable parameters to generate daily fire risk forecasts. This allows the municipality, the Civil Defense, and the volunteers to coordinate their efforts in the event of high risk.

Based on this indicator, the municipality can organize patrol visits to risky areas within the village (agricultural lands, forests, etc.) and can involve the volunteers in such missions.

A standard patrol form can be created and disclosed to the stakeholders. It can be filled by the patrolling group and documented by the municipality. Based on the risk degree, the municipality can organize a timeline for patrols for each location in the village.

The local community should create a committee that should have enough flexibility and authority to coordinate fire prevention measures.

The local committee should include:

- The municipality;
- The local Civil Defense center;
- The nearest army base;
- The internal security forces;
- Local NGOs;
- Cooperatives;
- Volunteering groups;
- Red Cross.

The committee can operate under the umbrella of one or several municipalities and can be extended to operate under a union of municipalities and should mainly perform the following:

- Check the bulletin on a daily basis;
- Assess the risk based on the bulletin indicator;
- Communicate with the Civil Defense local and regional centers;
- Organize patrol visits;
- Coordinate with the local volunteering groups.

All of the above can be realized through the regular meeting of the committee.

The tasks distribution can be resumed in the following checklist:

| ACTIVITY FOLLOW-UP | BODY (MEMBER OF THE COMMITTEE) | NOTES |
|---|---|--|
| Receipt and analysis of the daily fire risk bulletin issued by the Civil Defense. | Municipality | |
| Based on the risk level (if high to extreme), the Civil Defense center and the local volunteers have to be informed, and the locals have to be alerted. | Municipality | |
| Monitoring and observation of the sensitive areas (could be through patrols and/or direct observation). | Municipality and local volunteers (in coordination) | When the risk level is high to extreme as indicated in the bulletin. |
| Report of a wildfire (in the event where smoke or fire is detected). | Any observer | The Civil Defense and volunteers should be informed in the event of a fire. Early intervention is highly recommended. |
| Intervention, firefighting. | Volunteers, Civil Defense, LAF, and others | Intervention takes place in coordination between all mentioned bodies, while the Civil Defense personnel lead the operations. |
| Support of Civil Defense during fire operations. | Volunteers, municipality, and others | |
| Observation of the burnt area after the fire is contained. | Volunteers, Civil Defense, and others | The burnt area has to be monitored to make sure that the fire won't start again. |
| Filling of patrolling reports. | Municipality and volunteers | Each patrol has to be documented and archived in a special file. |
| Filling of the unified fire ID (in the event of fire) and archiving it. | Volunteers in cooperation with the Civil Defense | All incidents have to be documented and all data stored in a special database. |
| Receipt and storage of the forest firefighting tools. | | Volunteers will make use of the tools in the event of fire. These tools are to be stored at the Civil Defense center in the village as agreed during the meeting. |
| Optimization of efforts to prevent wildfires and enhance readiness. | All bodies | <ul style="list-style-type: none">• Prevention measures include but are not limited to: Cleansing of road sides, monitoring during risk periods, awareness, prosecution of arsonists, Weeding of undesirable vegetation, etc.• Readiness measures include but are not limited to: Availability of tools, accessibility to tools, securing of the needed tools, etc. |

TRANSFERABILITY:

The squad model tested in 4 villages has shown to be applicable in diverse social and geographical context. This study case provides guidelines on how to replicate the creation of a volunteer unit in villages with fire risk and how to share roles among the stakeholders involved in firefighting.

EVALUATION:

Considering the roundtable and the tools donation as the baseline of the squads' creation, an evaluation was conducted after the first fire seasons to assess the efficiency of these units in the four villages.

The below points were checked:

| | TANNOURINE | RACHAYA | QLAIAA | RMEDIYEH |
|--|--|---|--|--|
| Date of Visit | 28/2/2014 | 20/3/2014 | 11/3/2014 | |
| Actual status of tools | Stored in the municipality warehouse. | Stored in a small room in the site. | Stored in the municipality warehouse. | Stored in the municipality. |
| Accessibility to the tools | Only during the working hours of the municipality. | Two persons have the keys at anytime. | Accessible during the working hours of the municipality. Outside the working hours: accessible upon calling the employee in charge or the municipal police. | Accessible during the working hours of the municipality. Outside the working hours: accessible upon calling the employee in charge or the municipal police. |
| Communication between the squad members and the municipality | Good relationship. | Always in contact. | Good relationship with some of the members. | Good since they are headed by a municipal member. |
| Communication between the squad members and the Civil Defense and other stakeholders | Good relationship. | Always in contact. | No Relation. | No connection since the nearest center is in Tyr. |
| Number of times the tools were used by the squads | Never. | Three times. | Never. | One time, for a small fire. |
| Receipt of the Civil Defense bulletin | No. | No. | No. | No. |
| Establishment of the committee | Not yet, | Not yet, but there is regular coordination. | Not yet. | Not yet. |
| Role of the volunteers within the committee | | Some of them are planting workers. | | They are an alternative for the official Civil Defense center. |
| Design of forms and template | Not yet. | Not yet. | Not yet. | Not yet. |