EMERGENCY ASSISTANCE TO LOCUST CONTROL IN MADAGASCAR

Malagasy Migratory Locust swarm in Menabe Region, 3 May 2010

Response Strategy and Intervention Framework

2010/11

November 2010 (Update)

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

CONTEXT AND BACKGROUND

As one of the world's poorest and most food-deficient nations, Madagascar is plagued by food security crises. In recent years and even months, cyclones, droughts, diseases, plant pests and other natural disasters have continued to threaten the livelihoods of thousands of vulnerable households. Meanwhile, political instability has disrupted economic development and infrastructure services for much of the island's population. Some 50 percent of children under the age of five suffer the irreversible effects of malnutrition, and the situation is especially critical in the southwest. Known as the Great South, this arid and drought-prone area is facing an increasing threat from growing locust swarms.

In April 2010 a total of 65 municipalities of the Great South recorded severe food insecurity as a result of insufficient rainfall. While lack of rain limited crop production, moisture was sufficient to give rise to successive generations of the indigenous Migratory Locust in its traditional breeding areas. Swarms of *Locusta migratoria capito* (Saussure 1884) have formed and spread since late April 2010, despite ground control efforts conducted by the National Locust Control Centre (CNA – *Centre national antiacridien*).

Should the locust situation escalate into a major upsurge by the next rainy season (starting in October 2010), an even larger part of Madagascar will be under threat. A CNA appraisal in June 2010 concluded that more than 460 000 rural households were directly at risk. The consequences of a major upsurge are unpredictable, especially given Madagascar's already alarming food security situation.

Due to restricted survey capacities, the national authorities were not fully aware of the locust situation until development partners detected large swarms in southern Madagascar in mid-June 2010. In August 2010, information had confirmed the seriousness of the outbreak and the severity of its effects on the upcoming season and the Food and Agriculture Organization of the United Nations (FAO) urged the international community to support efforts to mount substantial control operations as soon as possible. Only through rapid assistance could FAO and partners prevent the situation from escalating into a humanitarian disaster.

LOCUST EMERGENCY RESPONSE STRATEGY

The worsening locust situation during the 2009/10 rainy season and the reported swarms outside their outbreak area from June 2010 onwards indicated a major upsurge was on the rise. Past experience demonstrates that a plague could evolve if the locust population remains unchecked at this stage. The ensuing plague would persist for many years with devastating consequences for food security.

To prevent this disaster, the dynamics of locust population must be broken as quickly and effectively as possible. Currently immature locust swarms will mature and start breeding at the onset of the next rainy season, and concentrations of wingless young locusts (hopper bands) will develop from October to December 2010. These bands will attack primarily the eastern parts of the outbreak area, which will receive the first rains. However, they will also affect the Midwest, which has been already invaded by swarms.

It is estimated that at least 500 000 hectares of land could require treatment against hopper bands and adult groups through the 2010/11 locust campaign.

The overall objective is to defend the food security in Madagascar, which has already been endangered by droughts and hence insufficient harvests.

The specific objective is to protect agriculture production and the most vulnerable households, threatened by locust bands and swarms, through support of effective and environmentally safer locust control measures.

Through this mutually agreed strategy, FAO and national partners plan to:

- rapidly strengthen national locust survey and control capacities (component 1);
- minimize human health and environmental risks (component 2); and
- assess locust impact on crops and control campaign (component 3).

COMPONENT 1: Strengthen national locust survey and control capacities

In light of the substantial resources required for effective operations, preparations for a massive locust control campaign were initiated in early September 2010. In fact, the majority of equipment and resources had to be pre-positioned in the field before the rains because of ground inaccessibility of most of the target areas during the rainy season. Therefore, temporary depots have been established in order to ensure sound implementation of survey/control operations from mid September 2010 onwards. Due to these constraints and in view of the large areas to be surveyed and controlled, operations are being predominantly carried out by aircraft.

One spotter helicopter has been mobilized and is operative in the field since late September 2010 to conduct extensive assessment surveys, identify main target areas and define deployment of spray aircraft. A second helicopter, needed for combined survey and control, is operative since mid October 2010. Control operations will focus on hopper bands mainly within the outbreak area and the Midwest. Depending on the extent of the problem, the number of aircrafts needed may increase or decrease at the end of December 2010 or early January 2011.

In addition, up to 190 000 litres of chemical pesticide should be provided to the country (out of which 110 000 litres have been already procured) for controlling flying adults or protecting crops directly threatened. Pesticide supply will also be composed of environmentally less harmful insecticides, as follows: 28 000 litres of Insect Growth Regulators -IGR (18 000 already procured) for hopper control as well as 3 000 kg of biopesticides (1 500 kg already procured) for control operations in protected areas. Communication, survey and control equipment has also been procured and is available in the field.

Operations are being conducted under the overall supervision of the CNA. Since the beginning of September, the Centre has benefited from the services of the national and international expertise recruited by FAO, as follows: i) two national consultants for locust management and administrative assistance; and ii) three international experts for evaluation of the locust situation and campaign planning (locust specialist), campaign coordination and logistical support for air operations.

Theoretical training sessions have been organized and on-the-job training of national staff on locust survey, reporting, and safe pesticide handling is being conducted in parallel with survey/control operations.

Estimated total cost (Component 1): USD 13.7 million

Result Indicators

By the end of the campaign in June 2011, FAO anticipates to have: i) significantly reduced the locust populations beyond the damage threshold; ii) avoided devastating crop losses due to locusts; and iii) mitigated the most challenging livelihood hazards caused by the insect pest.

COMPONENT 2: Minimize human health and environmental risks

Given the large quantity of insecticides needed to treat an infested area of at least 500 000 hectares and the particular context of Madagascar's unique biodiversity and wildlife, which is already endangered due to deforestation, erosion, overexploitation and the introduction of alien species, special attention and care needs to be given during control operations to reduce human health and environmental risks.

To this end, FAO supports large-scale use of more selective pesticides like IGRs and biopesticides, which have little to no effect on non-target organisms. FAO will also ensure close monitoring of spraying operations, with particular attention paid to their efficacy, respect of good agricultural practices, human health impacts and environmental repercussions.

National staff will receive on-the-job training on quality control; spraying assessment and biopesticide use. FAO will also assist with the collection and destruction of empty pesticide containers to reduce the risk of their misuse as water or food storage and to promote their safe disposal in secure warehouses. FAO will introduce an advanced Pesticide-Stock-Management-System (PSMS). These activities include procurement and installation of rinsing and crushing facilities for pesticide drums as well as training on the use of this equipment and on the PSMS.

Furthermore, personal protective equipment and tools to monitor pesticide blood contamination levels will be provided to control workers.

Environmental impact monitoring and control efficacy assessment will be conducted in close collaboration with the National Environment Agency (*Office national pour l'Environnement, ONE*) and the National Centre for Applied Agricultural Research (*Centre National de la Recherche Appliquée au Développement Rural, FOFIFA*).

These activities are being supported by the recruitment in November of two international experts, on biopesticides and pesticide management.

Estimated total cost (Component 2): USD 730 000

Result Indicators

FAO expects that by the end of the campaign: i) no incidences of intoxication will have occurred; ii) accidents due to locust spraying will have been prevented; and iii) no soil contamination with chemical pesticides will have been reported.

COMPONENT 3: Assess locust impact on crops and control campaign

Component 3 will focus on: i) rapid appraisal of locust crop damage; and ii) performance evaluation of control operations.

Through rapid appraisal FAO and partners will address the consequences of the locust upsurge on agriculture production, food security and livelihoods. Reports on crop damage will enable authorities to initiate and organize timely and targeted relief actions to affected households in close collaboration with other humanitarian partners if this is necessary. An easy-to-use crop damage reporting system will be applied, on which agriculture officers in locust-prone areas will be trained. The reports will be sent for analysis to CNA, which will provide regular updates to relevant government agencies, FAO and the World Food Programme.

Through performance evaluation FAO will focus on evaluating the locust campaign control operations, including: i) timeliness; ii) quality human health and environmental impacts; and iii) biopesticide usage. The assessment will generate lessons that will help make future efforts more effective and more environmentally safe. FAO and partners will develop an evaluation summary clearly identifying the technical, socio-economic and environmental relevance of the campaign. This will be essential for the future preparation of contingency plans in Madagascar.

Estimated total cost (Component 3): USD 60 000, not including rehabilitation costs

Result Indicators

FAO anticipates that by the end of the campaign in 2011: i) the impact of the locust upsurge on food security is quantified and qualified as a prerequisite for effective and appropriate relief countermeasures if required; and ii) the technical, socio-economic and environmental relevance of the locust campaign is documented.

CONCLUSION

The locust outbreak in southern Madagascar requires immediate response assistance to prevent a humanitarian disaster. The livelihoods of thousands of vulnerable families, the majority of whom depend on subsistence farming, are at risk.

As planned and thanks to the contribution of the Central Emergency Response Fund and FAO Technical Cooperation Programme (for a total of USD 5.2 million), the locust campaign started in September, allowing all inputs to be in place timely. However, the costs of the campaign, which will end in June 2011, are covered until early 2011 only.

FAO is therefore seeking urgent support (USD 9.3 million) to enable the implementation of the locust campaign until June 2011. FAO is working in concert with the Government and other partners to: i) strengthen control and surveillance capacities; ii) mitigate the campaign's environmental impacts; and iii) evaluate locust damage and control operation performance. Through these efforts FAO will promote effective locust surveillance and control for the current and future emergencies.