

**RESEARCH IN ALTERNATIVE LIVELIHOODS FUND (RALF)
RESEARCH PROJECT PROPOSAL**

RALF Project Number	RALF02-11
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SECTION A: ADMINISTRATIVE INFORMATION

1. Project Title	Cultivation of mint as a viable alternative livelihood in East and North East of Afghanistan
2. Start and Finish Dates	15 January 2005 – 31 December 2006
3. Target areas in Afghanistan	Helmand, Kunduz, and Nangarhar Provinces

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SECTION B: PROJECT PROFILE

8. Project Summary (600 words)

Introduction of easily adoptable, alternative crops that could be produced on small areas, with household labour and minimal requirements of specific machinery or processing and special storage conditions, are pre-requisites for creating a viable and sustainable alternative livelihood for rural households in Afghanistan. The prospects and potential of newly introduced crops or processes should be based, first, on the capacity of the domestic market, as lack of proper post-harvest processing facilities, cold storage and fast and reliable transport, as well as a lack of investment in industry or infrastructure and a very fluid and unpredictable security situation, will continue to jeopardise the export possibilities in coming years.

This project proposes to follow a two-tier approach involving exploitation of the untapped but huge domestic market for medicinal plants while exploring the possibilities for export to neighbouring countries. The project aims at modernising and adding value to the cultivation of mint (*Mentha* spp), which is already a well-accepted and familiar crop in Afghanistan. It is proposed to promote mint cultivation with two distinct aims:

- (1) Increased production of *Mentha viridis* (*M. Spicata*) (spearmint) for culinary uses, coupled with attempts to increase domestic consumption through increased public awareness about its medicinal uses for various digestive disorders and boosting exports to Pakistan, especially from Nangarhar.
- (2) Introduction of improved, high yielding and oil-rich varieties of *M.spicata* and *M. piperita* (peppermint) to obtain value-added products such as oil and menthol for domestic as well as export purposes.

Spearmint is widely grown in Afghanistan but the varieties grown in particular parts of the country are often not the most suitable and agronomic practices are not the most optimal. A preliminary survey by ICARDA has revealed that few people are aware with the medicinal properties and potential uses of mint. The project will evaluate locally grown and exotic varieties of spearmint to select high yielding, disease resistant and well adapted varieties, and will also evaluate and introduce improved varieties of *M. spicata* and *M. piperita* (peppermint) together with improved production practices.

Selected varieties and improved production practices will be tested for their suitability in target provinces, and easily adoptable varieties and growing methods will then be demonstrated through farmer participatory on-farm demonstrations. Field days and village schools shall be organized to train MAAH staff, farmers, and staff of other NGOs in optimal methods of mint cultivation, and in using mint as a home-remedy for digestion related problems. The project will also develop informative brochures and radio programs to increase public awareness about medicinal uses of mints, and to popularize ways and means for such uses. Farm enterprises will be established to produce and market fresh and dried mint leaves, oil, and other oil-based products in domestic and regional markets. The project will interface with other RALF projects and ICARDA projects, and will develop linkages with micro-financers to facilitate credit availability to mint growers' cooperatives to install oil extraction plants and packing machines. Export to regional markets will also be explored and support will be provided to growers to get in touch with regional buyers

9. Keywords

Medicinal plants; mint; *Mentha* spp.; value-added products; mint oil extraction; improved varieties; production practices; market analysis.

10. Budget Summary (in US\$)

	Year 1	Year 2	Total
Lead institution <i>ICARDA</i>	182,070	128,770	310,840
Collaborating institutions:			
<i>CIMAP</i>	30,500	30,500	61,000
<i>MAAH, Afghanistan</i>	13,000	13,000	26,000
TOTAL	225,570	172,270	397,840

SECTION C: BACKGROUND/PURPOSE

11. Background and Rationale

A recent report by UNODC ICMP¹ shows that two thirds of farmers interviewed in October 2003, shortly before planting time, stated they intended to increase significantly their opium poppy cultivation in 2004. While the report stresses that the results should be taken with a high degree of caution, and that farmers may have exaggerated their intentions as a protest at lack of external investment or aid, the report is revealing in the reasons provided by farmers for increasing the area planted to poppy.

Persistent poverty, high opium prices and access to credit (from opium dealers) are reported as the main reasons for continuing, or even increasing, opium production in 2004. More than 70% of poppy growers have landholdings of 10 jeribs or less (≤ 2 ha) and, despite the high value of poppy, the survey found that the highest proportion of poppy farmers (31%) earned only between US\$200 and US\$500 in 2003 reflecting a concentration of poppy farming among small-scale farmers. For these farmers, opium poppy is the main source of income, accounting for more than 60% of total income, followed by income from cereals (wheat) and labour wages.

In the absence of a proper rural credit system, opium production also facilitates access to credit. Credit is available under *salaam* arrangements (advance sale of the future harvest), and no interest is charged on most loans, but their actual cost is high. The UNODC ICMP survey found that the average loan of a poppy farmer in 2003 amounted to more than US\$700, equivalent to 9 months work as an unskilled labourer, or more than a quarter of the average annual income of a poppy farmer. Most poppy growers have outstanding loans and continue to produce poppy as their main repayment strategy.

Poppy production is highly labour intensive; availability of labour at harvest time is one of the potential bottlenecks in opium production and there is a huge demand for skilled labour. As a result, average daily wages of US\$ 6.8 for opium harvest are more than double that for other agricultural labour. Thus, on the one hand opium production pushes up labour costs in agriculture; on the other it provides a valuable source of remuneration for wage labour in poppy producing regions. However, where women are hired for activities such as weeding and harvesting of the poppy crop, they receive lower wages, since the opportunity cost of female labour is very low. This situation would only change if alternative income earning employment opportunities are created for women in the poppy growing areas.

Introduction of easily adoptable alternative crops that could be produced on small areas, with household labour and minimal requirements of specific machinery, processing and special storage conditions, are pre-requisites for creating a viable and sustainable alternative livelihood for rural households in Afghanistan. Furthermore, the prospects and potential of newly introduced crops or processes should be based, first, on the capacity of the domestic market, as lack of proper post-harvest processing facilities, cold storage and fast and reliable transport, as well as a lack of investment in industry or infrastructure and a very fluid and unpredictable security situation, will continue to jeopardise the export possibilities in coming years.

Therefore, this project proposes to follow a two-tier approach involving exploitation of the untapped but huge domestic market for medicinal plants while exploring the possibilities for export to neighbouring countries. This approach would provide a cushion by generating enough income through accelerated domestic sales until the projects' produce begins to compete in the regional markets.

¹ United Nations Office on Drugs and Crime (UNODC), Illicit Crop Monitoring Programme (ICMP), Afghanistan. Farmers' Intentions Survey 2003/2004. February 2004.

The project aims at modernising and adding value to the cultivation of mint (*Mentha* spp.), which is already a well-accepted and familiar crop, in provinces where poppy is grown or its cultivation is spreading. It is proposed to promote mint cultivation with two distinct aims:

- (1) Increased production of *Mentha viridis* (*M. Spicata*) (spearmint) for culinary uses, coupled with attempts to increase domestic consumption through increased public awareness about its medicinal uses for various digestive disorders and boosting exports to Pakistan, especially from Nangarhar.
- (2) Introduction of improved, high yielding and oil-rich varieties of *M.spicata* and *M. piperita* (peppermint) to obtain value-added products such as oil and menthol for domestic as well as export purposes.

Mint is very popular for culinary uses in Afghanistan but its medicinal values and uses are not so well known. Throughout the world mint is used as a reliable remedy for various kinds of digestion-related problems (indigestion, stomach cramp, flatulence upset stomach, nausea, vomiting, and colic in children), which due to the unavailability of safe drinking water are very common in Afghanistan. In the absence of an extensive health care system, local communities depend on alternative therapies, offering an opportunity for introducing mint, already widely consumed as a food item, as an easily grown, conveniently stored, locally available and strongly effective herbal remedy, with the potential of generating a competitive income through domestic and regional sales.

Spearmint (*M. viridis/M. spicata*) is widely grown in Afghanistan but the varieties grown in particular parts of the country are often not the most suitable and agronomic practices are not the most optimal. A preliminary survey by ICARDA has revealed that few people are aware with the medicinal properties and potential uses of mint. The project will evaluate both locally grown and exotic varieties of spearmint to select high yielding, disease resistant and well adapted varieties, and will also evaluate and introduce improved varieties of *M. spicata* and *M. piperita* (peppermint) together with improved production practices.

Internationally, mint (menthol) oil is produced largely from *M. arvensis* (Japanese mint or “menthol mint”) which is the only species to have been naturalized in tropical Asia. Recent information provided by the Central Institute of Medicinal and Aromatic Plants (CIMAP), India on the mint oil market indicates that it is nearing saturation, and it would be difficult for new producers to compete with the major producers and exporters such as India, China and Brazil. The present international demand for mint oil is approximately 18-20 MT per year, and India alone produces 15-18 MT per year. Therefore, the project will evaluate and introduce varieties of *M. spicata* and *M. piperita* for both domestic and export purposes. Demand in the essential oil market for products from these two species is apparently still growing, but the project will investigate this further.

ICARDA has consulted closely with CIMAP in developing the project and identifying the proposed activities. CIMAP was established in 1959 by the Council of Scientific and Industrial Research (CSIR) of the Government of India with a mandate for conservation, research and development of economically important medicinal, nutraceutical, essential oil, dye, gum and agrichemical yielding plants. CIMAP has developed high yielding varieties of mint (particularly of *M. arvensis*) and played a pivotal role in developing India as the leading exporter of mint oil, displacing China and Brazil.

ICARDA is already working closely with the Ministry of Agriculture and Animal Husbandry (MAAH) in implementing a project on *Demonstrating New Technologies in Farmers' Fields to Facilitate Rapid Adoption and Diffusion* within the USAID supported RAMP (Rebuilding Agricultural Markets Project). The project is demonstrating available improved technologies in farmers' fields, focusing on improved varieties of field and vegetable crops that are adapted to local conditions and appropriate crop management practices. The project has established on-farm demonstrations in 362 sites in 27 districts within the five provinces of Kunduz, Nangarhar, Parwan, Ghazni, and Helmand. The demonstrations focus on six

principal crops of wheat, rice, mung bean, potato, onion and tomato, and key inputs and management practices, including improved varieties, fertilizer, seed rate, weed control, irrigation scheduling. The demonstrations are implemented in partnership with the extension department of MAAH in each district, and ICARDA, MAAH and the host farmers work together in laying out, planting and managing the demonstrations.

ICARDA, therefore, already has experience working with farming communities in the provinces targeted by this proposed RALF project, and has successfully introduced potato as an alternative crop in Helmand. Good yields, as a result of the use of improved varieties and associated technology, and strong market demand has led to the sale of most of the potatoes straight from the farmers' fields at a very attractive price. This has boosted ICARDA's creditability in the area. ICARDA will build on this established trust and strong relationship with the farming community to promote production of mint.

12. Project Goal

The overall goal of the project is to contribute to the sustainable eradication of opium poppy in Afghanistan through the provision of viable alternative livelihood options for rural households that are economically dependent on poppy cultivation

13. Project Purpose

The purpose of this project is to promote the production and marketing of mint, both for culinary and medicinal purposes and for oil-extraction as the basis for value-added products. This is designed as a pilot project, targeting initially the domestic market, but also exploring opportunities for export to neighbouring countries

SECTION D: OUTPUTS/UPTAKE PATHWAYS

14. Outputs

1. Disease resistant, high yielding varieties of *M. viridis* identified and selected for different agroecological conditions of Afghanistan.
2. Improved varieties of *M. viridis* and associated production practices tested with farmers.
3. Culinary and medicinal uses of mint promoted among end users and in the domestic market.
4. Disease resistant, high oil-yielding varieties of *M. spicata* and *M. piperita* identified and best production practices developed for different agroecological conditions in Afghanistan
5. Improved varieties of *M. spicata* and *M. piperita* along with associated production practices tested with farmers.
6. Pilot oil-extraction plants and farm enterprises for manufacturing and marketing value-added products established.
7. The use of mint and mint based products as alternative home remedies for digestion related problems promoted with the Ministry of Health.
8. Assessment of regional markets and link between Afghan mint growers and regional buyers/ end users of mint developed.

15. Target Institutions

The target institutions are:

- (i) the Ministry of Agriculture and Animal Husbandry (MAAH) and the Agriculture and Extension Departments of Helmand, Kunduz and Nangarhar provinces, who will acquire knowledge and experience of optimal production practices for mint production, which could be transferred to other districts/provinces.
- (ii) NGOs involved in developing alternative livelihoods and cropping options. It is noted here that ICARDA has already discussed cooperation and potential linkages with both Novib-Oxfam and Mercy Corps, which have included medicinal plants in their RALF projects.
- (iii) Community organizations such as farmers' cooperatives in the processing of mint products.
- (iv) Ministry of Health in promoting the medicinal uses of mint.

16. Target Areas and Stakeholders

In addition to Helmand and Nangarhar, the top two poppy growing provinces, opium poppy cultivation is rapidly increasing in Kunduz province. Therefore, the project will concentrate on these three provinces, building on the strong presence it already has through the RAMP project (see section 11).

The principal stakeholders are the farming communities in the targeted provinces. We expect the proposed technology to be particularly attractive to small farmers as the mint can be produced on small areas using household labour. The establishment of oil-extraction facilities and other processing and packaging of mint products would create local employment in the communities, especially for women.

17. Uptake Pathways

Since mint is a well-known and widely accepted crop in Afghanistan, it is expected that an improved package of practices and better suited varieties of *M. viridis* for culinary uses will be readily adopted. Based on the same logic, a high rate of acceptance is also expected for the new, improved varieties of *M. spicata* and *M. piperita*, which would open new options for adding value and increasing income.

The uptake of the project outputs will be facilitated by involving both the target institutions and the stakeholders in the project's activities. MAAH staff and participating farmers will be gain knowledge in the cultivation, processing, medicinal uses, oil extraction and marketing of mint.

Recommendations to government institutions (e.g. Ministry of Health) will be made to promote the medicinal uses of mint in order to increase domestic demand.

18. Expected Impact: Livelihoods and poverty of current poppy growers

Prior to 2001, the opium prices in Afghanistan fluctuated between US\$30 and US\$100 per kg, but prices rose rapidly following the Taliban's opium production ban issued in mid 2000. However, opium prices showed a clear downward trend in 2003, at the time of the UNODC ICMP, though prices were still close to US\$250 per kg, on average, in October 2003. According to UNODC's 2003 Afghanistan Opium Survey, the yield amounted to, on average, almost 45 kg of opium per hectare in 2003 (or close to 9 kg per jerib), with average yields of 45 kg per ha on irrigated land and 29 kg per ha on rain-fed land. The average farm-gate price at harvest time was US\$283 per kg. Thus, the average gross income from opium production on irrigated land is estimated at some US\$12,700 per ha, and from rainfed land, on average, US\$8,200 per ha. Given the average size of land under poppy cultivation of

slightly more than 0.3 ha, the average gross income of a poppy farmer was estimated at around US\$3,900 if he sold all of his opium production immediately at harvest time (when prices were rather high).

No information is available from the survey on net income per ha from opium production, but production costs are high and credit arrangements also bear a cost. Our own estimates are that production costs average US\$ 3,810 per ha for organic manure, DPA, irrigation and labour for thinning, weeding, incision and latex collection, resulting in an average net income of US\$ 2,760 from the average area of 0.3 ha. Moreover, according to more recent information, opium prices fell to an average of US\$100 per kg in spring of 2004.² Assuming production costs remain the same, average net income is reduced to around US\$690 per ha from irrigated land. In the southern province of Helmand, a centre of opium production, this year's harvest of tomatoes and potatoes have been sold for more than opium.

With local mint varieties and age old cultivation methods, farmers get an average net income of US\$ 600-800 per ha only by selling fresh leaves for culinary uses. However, selection of high yielding and locally adopted varieties of *M. virdis*, coupled with the introduction of new production technology is expected to greatly increase the production, and production and sale of value-added products, such as mint-water, oil and eventually menthol from *M. spicata* and *M. piperita* in the domestic market as well as to neighbouring countries (such as Central Asia), will further increase the returns to mint production. Improved *M. virdis* varieties such as 'Kosi', produce 200 kg per ha of oil worth US \$ 1,800. Thus, mint cultivation and small scale mint-oil industry could easily be accepted as an alternative livelihood with significant income potential.

Our preliminary survey has shown that mint is already exported in small quantities to Pakistan which shows that a potential market exists. The project will explore further possibilities in other regional countries, and would facilitate establishing linkages between Afghan mint producers and regional traders.

19. Monitoring and Evaluation

The existing project monitoring and evaluation system used by ICARDA for its current RAMP project on the demonstration of improved crop production practices will provide the foundation for monitoring this project's activities. The progress will be monitored on an ongoing basis in order to ensure that the project achieves its planned milestones in a timely manner.

ICARDA Kabul-based staff and MAAH district staff will gather the information from the participatory on-farm trials and demonstration sites in order to assess the performance (yields, returns) of improved varieties and production practices in farmers' fields. Information on the number of farmers' opting to adopt the package and the areas planted will also be collected.

ICARDA will be responsible for monitoring the awareness campaigns, training, and feedback on medicinal uses of mint, and for monitoring the establishment of pilot oil-extraction plants and farm enterprises for manufacturing and marketing value-added products.

Regular consultation meetings will be held between all three partners, ICARDA, CIMAP and MAAH, to assess progress and modify work plans as necessary.

A baseline survey, cost benefit analysis, and livelihood impact analysis will be conducted to evaluate the impact of the project outputs.

² David Rhode in International Herald Tribune. The IHT Online, July 01, 2004

20. Appraisal Issues

Given the present status of mint as a well accepted, consumed and marketed crop, we do not anticipate any adverse effects of the project. Technically the project aims to increase mint production through the use of improved varieties and crop production practices, which are scale neutral and environmentally neutral. Use of improved varieties and new production practices are expected to increase mint yields and production, leading to higher returns to mint growers. As noted earlier, the crop can be produced on small areas, with household labour and minimal requirements of specific machinery, and therefore may be particularly beneficial for small farmers or female headed households. Whether larger-scale production could provide alternative (competitive) employment opportunities for rural labour currently dependent on poppy production will need to be monitored by the project. Additional economic returns will be generated through the establishment of local small oil-extraction plants which are expected to generate employment opportunities in rural communities. Training of rural community member, especially women, in the domestic production of medicinal remedies from mint, may provide further locally marketable products.

However, the prospects and potential for expanding the production of mint will depend, first, on the capacity of the domestic market and the success of activities to promote the medicinal properties of mint and, second, on potential export markets.

The project proponents have not identified any adverse effects on the well-being of any social group or stakeholder group that may result from widespread adoption of the project's outputs.

Social risks are involved while working in opium producing areas with the aim to reduce farmers' dependence on this crop. Powerful opium trading lobbies may be expected to disturb any interventions which may adversely affect the opium trade. The project will be monitored closely to avoid threats to participating farmers and project staff.

SECTION E: ACTIVITIES

20. Activities

Activities:

The project will conduct a survey of locally grown spearmint varieties, the associated indigenous growing methods, soil properties and other environmental factors, and farmers' yields. The information will provide the basis for the selection of locally adapted, high yielding and disease-resistant varieties and the development of a package of best practices for their cultivation.

The project will also evaluate, in farmers' fields improved, high yielding and disease resistant varieties of *M. spicata* and *M. piperita* and develop recommendations for associated production practices.

Selected varieties and production practices will be tested on-farm, farmer-managed trials in target provinces. Trials will aim to assess the most efficient production of mint as a cash crop and to encourage women to cultivate mint as a "kitchen garden" herb. Data will be recorded on all inputs, costs, yields and outputs, as well as farmers' observations and preferences.

Field days will be organized to demonstrate the varieties and production practices to farmers, extension agents, and other stakeholders. The project will follow up with those farmers who attended field days to see whether they were encouraged to adopt the technology.

Marketing of fresh/ dried mint leaves will be monitored through both market visits and detailed recording of participating farmers' sales.

Culinary and medicinal uses of mint will be promoted among end users through the distribution of brochures and the production and broadcasting of radio programs to popularize the use of mint. Radio is the most popular and effective media in Afghanistan. With a literacy rate of just 31%, Afghans rely on radio for information. ICARDA already has experience in developing radio programs. In 2003, together with *Internews*, ICARDA organized a workshop for radio reporters designed to increase agricultural programming, using agricultural technical information provided by ICARDA, MAAH and the International Fertilizer Development Corporation (IFDC).³ This workshop was part of a larger effort to increase the quality and quantity of agriculture-related messages on radio. Mr. Enayat Safi, ICARDA's communications associate in Kabul, has completed training in radio production at *Internews*. He is fluent in Dari, English and Pashtu. Mr. Safi produces agricultural content for broadcasts and works in partnership with other producers, serving as a liaison between agricultural experts and broadcasters.

The project will also work with community institutions (e.g., village schools) in providing training, with a special emphasis on women, on the domestic preparations of mint as an effective remedy for digestion-related problems.

Building on this, the project will interact with the Ministry of Health and with other RALF projects (such as RALF02-07 proposed by Novib-Oxfam) to promote the use of mint and mint based products as alternative home remedies for digestion related problems and incorporate mint based therapies in the national health care system. This will involve consultation meeting with the Ministry and training of health and community workers from the Ministry.

Farm enterprises will be established to produce and market fresh and dried mint leaves, mint oil, and other oil-based products. Three pilot oil extraction plants (purchased by the project as pilot demonstration units) will be established, in one selected community in each province. Farmers' Cooperatives (or other associations) will be assisted in developing business plans and with training of members in the running and maintenance of extraction plants, packing and storage of oil and mint-water. Manuals on running and maintaining the extraction plants will be prepared in Dari and Pashtu.

The project will interface with other RALF funded projects (RALF01-07 implemented by Mercy Corps and RALF02-07 proposed by Novib-Oxfam) and with other ICARDA projects, such as the RAMP Village Based Seed Enterprises, to create marketing avenues. ICARDA has already organized three village-based seed enterprises (VBSEs) in target provinces, which successfully produce and market crop seed. Farmers' cooperatives involved in mint cultivation shall be linked with these VBSEs to market their products. The project will also collaborate with micro-financers to arrange credit to mint cooperatives to install oil extraction plants and packing machines. Informal discussions have already taken place with the management of a foreign bank located in Kabul in this regard.

The project will conduct an assessment of domestic and regional markets for mint and mint products and identify avenues for linking Afghan mint growers with regional buyers and end users. Visits will be made to neighbouring countries to meet with potential buyers.

Data and documentation:

All data files will be maintained in ICARDA's Kabul Office and regular back up copies made. Back-ups will be sent regularly to ICARDA's headquarters for safe keeping.

³ see http://www.icarda.cgiar.org/Afghanistan/Ag_Radio.htm

21. Implementation and Management

ICARDA will manage all aspects of project implementation in close collaboration with the partners, MAAH and CIMAP. As noted above, ICARDA already has an established presence in Helmand, Kunduz and Nangarhar, where it has experience in evaluating and reintroducing locally adapted crop varieties, and has the capacity to evaluate and introduce new, high yielding and improved crops.

ICARDA has the advantage of having a well established communication unit in Kabul, which besides producing printed publicity and public awareness materials, also produces a bi-lingual (Dari/ Pashtu) weekly farm radio program that is broadcast by 43 radio stations throughout Afghanistan. The program has recently been rated as one of the two top radio programs in Afghanistan. The program with more than 15 million regular listeners would be a strong tool for the public awareness component of the project.

Project will be implemented and managed by the Principal Investigator, based in ICARDA's office in Kabul, who along with ICARDA's Afghanistan team will ensure timely and effective implementation of the project.

The Central Institute of Medicinal and Aromatic Plants (CIMAP), India, is a reputed and highly successful non-profit research and development organization. It has a long and impressive record in improving and cultivating medicinal plants, the development of extraction processes and pilot plants and in providing training in all aspects of medicinal plant cultivation and processing. Based on CIMAP's work, a large number of medicinal plants and their crude, semi-processed and value-added products are being successfully marketed in the region.

CIMAP will provide expertise in selecting the best locally available varieties of mint and in developing a package of best production methods, and will train project staff, MAAH staff and participating farmers in growing selected mint varieties using modern agro-techniques. They will also provide technical advice on sourcing improved varieties of *M. spicata* and *M. piperita* along with associated agro-technologies from other sources.

CIMAP will provide the expertise needed in installing three pilot extraction plants and packing machines, and train community enterprises in their operation and maintenance and in packaging the product. CIMAP will produce a manual (in English) which will then be translated in Pashtu and Dari by ICARDA.

The Afghan Ministry of Agriculture and Animal Husbandry (MAAH) is the national agency responsible for agricultural research and development. MAAH will work with ICARDA in executing the project and transferring the technology through its network of research stations and extension offices spread throughout opium poppy growing provinces. ICARDA and MAAH already collaborate within the RAMP Crop Demonstrations project in running 362 farmer participatory demonstrations in 27 districts of five provinces including the three provinces targeted in this proposed project.

SECTION F: FINANCIAL INFORMATION

22a. Financial Summary (Total Budget in US\$)

ITEMS	Year 1	Year 2	Total
Personnel	64,000	66,700	130,700
Travel	25,000	25,000	50,000
Operational expenses	19,000	19,000	38,000
Equipment	48,000	0	48,000
Consumables	15,500	15,500	31,000
Workshops	1,000	4,000	5,000
Training	6,000	6,000	12,000
Publications	4,000	4,000	8,000
Overheads	37,290	27,980	65,270
Contingency	5,780	4,090	9,870
TOTAL	225,570	172,270	397,840

22b. Budget for Lead (Applicant) Institution ICARDA (US\$)

ITEMS	Year 1	Year 2	Total
Personnel	48,000	50,700	98,700
Travel	10,000	10,000	20,000
Operational expenses	15,000	15,000	30,000
Equipment	48,000	0	48,000
Consumables	12,500	12,500	25,000
Workshops	1,000	4,000	5,000
Training	6,000	6,000	12,000
Publications	4,000	4,000	8,000
Overheads	31,790	22,480	54,270
Contingency	5,780	4,090	9,870
TOTAL	182,070	128,770	310,840

22c. Budget for Collaborator 1 CIMAP (US\$)

ITEMS	Year 1	Year 2	Total
Personnel	10,000	10,000	20,000
Travel	10,000	10,000	20,000
Operational expenses	3,000	3,000	6,000
Equipment	-	-	-
Consumables	2,000	2,000	4,000
Workshops	-	-	-
Training	-	-	-
Publications	-	-	-
Overheads	5,500	5,500	11,000
Contingency	-	-	-
TOTAL	30,500	30,500	61,000

22d. Budget for Collaborator 2 MAAH (US\$)

ITEMS	Year 1	Year 2	Total
Personnel	6,000	6,000	12,000
Travel	5,000	5,000	10,000
Operational expenses	1,000	1,000	2,000
Equipment	-	-	-
Consumables	1,000	1,000	2,000
Workshops	-	-	-
Training	-	-	-
Publications	-	-	-
Overheads	-	-	-
Contingency			-
TOTAL	13,000	13,000	26,000

23. Budget Notes, by line item and by Collaborator

ICARDA:

Personnel: Includes partial compensation of Principal Investigator at US\$ 25,000 per year; three technicians (one in each target province) full-time at US\$ 500 per month; one driver dedicated to the project, full-time at US\$ 250 per month; two months per year of an Economist at US\$ 1,000 per month, and three female health workers (one in each target province, for six months in year 2 at US\$ 150 per month.

Travel: International and local travel of ICARDA Kabul-based staff.

Operational expenses: Estimated budget for operational expenses.

Equipment: Includes three pilot oil extraction plants at US\$ 15,000; one vehicle (rented or purchased) dedicated to the project at US\$ 25,000; one computer and associated equipment at US\$ 2,000, a digital video camera and digital still camera @ US\$ 3,000 and office equipment @ US\$ 3,000.

Consumables: Estimated cost of consumables.

Workshops: These will be held locally and costs are minimal.

Training: Includes training provisions and per diems for participants

Publications: Includes production, translation and printing of brochures, etc., and production costs of radio programs.

Overheads: Budgeted at ICARDA's actual indirect cost allocation of 22% of direct costs.

Contingency: Budgeted at 4% of direct costs.

CIMAP:

Budget includes personnel costs and international and local travel of CIMAP's staff, consumables and operational costs, and overhead at 22%.

MAAH:

Budget includes partial compensation and local travel of MAAH staff participating in the project, plus estimated costs of MAAH operations and consumables.

Attachment 1: Logical Framework

RALF Project Number

RALF02-11

Project Title	Cultivation of mint as a viable alternative livelihood in East and North East of Afghanistan
Lead implementing institution	ICARDA

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions and Risks
Goal: To contribute to the sustainable eradication of opium poppy in Afghanistan through the provision of viable alternative livelihood options for rural households that are economically dependent on poppy cultivation	Change in farmers' attitude towards poppy cultivation; Opium area and production statistics from target provinces; Rural household incomes.	Data collected by UN agencies and anti-narcotic department of Afghanistan Government, and survey conducted by project team	Project assumes a high acceptance for newly introduced alternative livelihood by rural communities at large and women in particular.
Purpose: To promote the production and marketing of mint, both for culinary and medicinal purposes and for oil-extraction as the basis for value-added products. This is designed as a pilot project, targeting initially the domestic market, but also exploring opportunities for export to neighbouring countries.	Number of farmers adopting mint varieties and associated production practices; Increased domestic demand for mint products for medicinal uses; Functioning oil extraction enterprises and other mint based rural industries.	Base line survey Livelihoods impact assessments Data from monitoring activities Report of independent project review	Given that culinary uses of mint are well-known and given increased awareness of its medicinal uses, promoted by the project, leading to increased demand in domestic market, and potential for export are expected to induce a fast and sustainable uptake of mint cultivation
Outputs:			
1. Disease resistant, high yielding varieties of <i>M. virdis</i> identified and selected for different agroecological conditions of Afghanistan.	Superior performance of selected varieties for target provinces	Research results showing comparative performance of varieties under different agroecological conditions	Risks: Drought could affect testing and selection of varieties
2. Improved varieties of <i>M. virdis</i> and associated production practices tested with farmers	Number of participatory trials; No of field days; No. of participants (farmers, MAAH staff) in field days;	Results from trials (yields, costs, returns, etc) Statistics on participation	ICARDA already has a system in place for participatory trials. Risks: Drought could affect farmers' trials
3. Culinary and medicinal uses of mint promoted among end users and in the domestic market	Number and types of awareness campaigns, training, and feedback about adoption of medicinal uses	No. of brochures distributed, radio programs broadcast, people attended village schools and training.	Security concerns could hinder free access to some locations

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions and Risks
4. Disease resistant, high oil-yielding varieties of <i>M. spicata</i> and <i>M. piperita</i> identified and best production practices developed for different agroecological conditions in Afghanistan	Superior performance of selected varieties for target provinces	Research results showing comparative performance of varieties under different agroecological conditions	Risks: Drought could affect testing and selection of varieties
5. Improved varieties of <i>M. spicata</i> and <i>M. piperita</i> along with associated production practices tested with farmers.	Superior performance (yields, returns) of improved varieties and production practices in farmers' fields. Number of farmers' opting to adopt the package and area planted.	Results from trials (yields, costs, returns, etc) Statistics on participation and adoption	ICARDA already has a system in place for participatory trials. Risks: Drought could affect farmers' trials Security situation could affect the scheduled visits of Consultants from CIMAP
6. Pilot oil-extraction plants and farm enterprises for manufacturing and marketing value-added products established.	Number of pilot oil extraction plants installed No. of associated rural enterprises Cost-benefit analyses of mint production Livelihood impact analysis	Survey reports and analysis. Business data (costs, returns) on extraction plants and other rural enterprises.	Communities willing to cooperate in forming small enterprises for oil extraction and/or generating added-value products. Travel restrictions may affect visit of consultants
7. The use of mint and mint based products as alternative home remedies for digestion related problems promoted with the Ministry of Health	Meetings with staff of MOH and RALF02-07 Training of health workers in mint uses as home remedy for digestive problems	Proceedings of meetings Number of health workers trained	No risk is visualised. Based on international acceptance and being effective, mint based remedies are expected to be readily acceptable
8. Assessment of regional markets and link between Afghan mint growers and regional buyers/ end users of mint developed	Visits to regional market and linkage establishment	Market assessment report and contacts established in regional markets	No risk is visualised
Activities: 1.1 Survey of <i>M. virdis</i> varieties growing in Afghanistan and selection of locally adapted, high yielding and disease-resistant varieties; and development of package of best practices for their cultivation	No. of varieties collected, tested and selected	Project reports, data, etc	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions and Risks
<p>2.1 Farmers' participatory trials with selected varieties and production practices in target provinces.</p> <p>2.2 Organization of field days to train farmers, extension agents, and staff of MAAH in best agronomic practices</p> <p>2.3 Monitoring of marketing of fresh/ dried mint leaves.</p>	<p>Number of participatory trials;</p> <p>Number of field days organized and participation of farmers and ministry staff</p> <p>Market visits and monitoring of farmers' sales</p>	<p>Field records, trial results, etc.</p> <p>Statistics on participation in field days and trainings</p> <p>Project records and reports</p>	<p>Drought could adversely affect the trials</p> <p>ICARDA has necessary technical and logistic capabilities but security considerations at a specific point of time could hinder this activity. Unexpected dry weather or incidence of new disease/ pests</p>
<p>3.1 Creating awareness about the medicinal uses of mint using print media and radio, and through village schools.</p> <p>3.2 Organizing community institutions (e.g., village schools) to provide to training, with a special emphasis on women, on the domestic preparations of mint as an effective remedy for digestion-related problems.</p>	<p>Distribution of brochures, production and broadcasting of radio program, and organization of village schools</p> <p>Organization of village schools and training in different target provinces</p>	<p>Number of brochures distributed, radio programs broadcast, people attended village schools and training</p> <p>Statistics form schools and training from each target province</p>	<p>ICARDA's Communication Unit at Kabul, has the capability to organize these activities</p> <p>Security concerns at a specific point of time could hinder free access of trainers , staff of MAAH and project</p>
<p>4.1 Evaluation of improved, high yielding and disease resistant varieties of <i>M. spicata</i> and <i>M. piperita</i></p>	<p>No. of varieties collected, tested and selected</p>	<p>Research reports</p>	<p>ICARDA is already involved in such endeavours in some of the target provinces</p>
<p>5.1 Farmers' participatory trials with selected varieties and production practices in target provinces;</p> <p>5.2 Organization of field days to train for farmers, extension agents, and staff of MAAH in best agronomic practices</p>	<p>Number of participatory trials;</p> <p>Number of field days organized and participation of farmers and ministry staff</p>	<p>Field records, trial results, etc.</p> <p>Statistics on field days and trainings</p>	<p>Drought could adversely affect the trials</p> <p>ICARDA has necessary technical and logistic capabilities but security considerations at a specific point of time could hinder this activity</p>

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions and Risks
<p>6.1 Setting up pilot oil extraction plant in provinces; organization of Farmers' Cooperatives (or other associations) with business plans; training of members, and staff of MAAH in running and maintenance of extraction plants, packing and storage of oil and mint-water.</p> <p>6.2 Preparation of manuals in Dari and Pashtu on running and maintaining the extraction plants</p> <p>6.3 Baseline survey, cost benefit analysis, and livelihood impact analysis.</p> <p>6.4 Interfacing with other RALF funded projects and ICARDA projects, such as the Village Based Seed Enterprise project, to create marketing avenues, and collaboration with micro-financers to arrange credit to mint cooperatives to install oil extraction plants and packing machines. (Informal discussions have already taken place with the management of a foreign bank located in Kabul).</p>	<p>Number of pilot plants installed and farmers trained, cooperatives organized and their business plans prepared, members and staff of MAAH trained</p> <p>Preparation, printing and distribution of manuals</p> <p>Number farm households surveyed</p> <p>Interaction (meetings, joint activities) with other projects Discussions, meetings etc with potential micro-financers</p>	<p>Project reports; Business plans;</p> <p>Manuals and their distribution</p> <p>Questionnaires; survey results; data and analysis.</p> <p>Project reports Minutes of meetings, etc.</p>	<p>ICARDA has already organized 3 VBSEs, developed business plans, and trained members in seed production, processing and marketing. These VBSEs run profitable seed business in 2 of the target provinces</p> <p>ICARDA is well equipped for such activities and have produced several bi-lingual manuals</p> <p>Farm households willing to respond to survey questions.</p> <p>Issues like payment of interest (against Islamic principles), absence of proper collaterals and insurance for credit money could hamper arranging finances. Though, organizations and NGOs involved in micro-financing have evolved some via-media to cover major part of these concerns</p>
<p>7.1 Interfacing with Ministry of health (MOH) and RALF02-07 to incorporate mint based therapies in health care system</p>	<p>Interaction (meetings, joint activities) Training of staff from MOH, community workers, NGOs</p>	<p>Minutes of meetings /report Trainings arranged and number of people trained</p>	<p>It is expected that MOH will readily accept mint-based remedies in absence of easy access of village communities to medicine</p>
<p>8.1 Assessment of regional markets and establishing linkages between mint growers and regional buyers</p>	<p>Visits to neighbouring countries Meetings with potential buyers</p>	<p>Reports Linkages established</p>	<p>Drought or unexpected change in security situation may hamper all the activities adversely affecting the expected pace of increase of mint production</p>

Attachment 2: Work plan: Activities and Milestones

RALF Project Number	RALF02-11
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Project Title	Cultivation of mint as a viable alternative livelihood in East and North East of Afghanistan
Lead implementing institution	International Centre for Agricultural Research in the Dry Areas (ICARDA) Aleppo, Syria

Project Year	Year 1												Year 2											
Calendar Year	2005												2006											
Calendar Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities & Milestones:																								
Output 1. Analysis of indigenous mint cultivation practices leading to identification of disease resistant, high yielding varieties of <i>M. viridis</i>																								
Activity 1.1: Survey of <i>M. viridis</i> varieties growing in Afghanistan and selection of locally adapted, high yielding and disease-resistant varieties; and development of package of best practices for their cultivation	•	•	•	•	•	•																		
Milestones: Survey report leading to selection of locally adapted, high yielding and disease-resistant varieties, and best agro-techniques developed							x	x																
Output 2. Improved varieties of <i>M. viridis</i> and associated production practices tested with farmers																								
Activity 2.1: Farmers' participatory trials with selected varieties and production practices in target provinces.													•	•	•	•	•	•						
Milestones: Demonstration plots established													x	x										
Activity 2.2: Organization of field days to train farmers, extension agents, and staff of MAAH in best agronomic practices														•	•	•	•							
Milestones: Field days organized, farmers and ministry staff trained													x	x	x									

Project Year	Year 1												Year 2											
Calendar Year	2005												2006											
Calendar Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activity 2.3: Monitoring of marketing of fresh/ dried mint leaves.					•	•	•	•	•	•	•	•					•	•	•	•	•	•	•	
Milestones: Market visits and monitoring of farmers' sales	Ongoing activity																							
Output 3. Culinary and medicinal uses of mint promoted among end users and in the domestic market																								
Activity 3.1: Creating awareness about the medicinal uses of mint using print media and radio	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Milestones: Number of brochures distributed and radio programs broadcasted	Ongoing activity																							
Activity 3.2 : Village schools and trainings organised with special emphasis on women, on the domestic preparations of mint as an effective remedy for digestion-related problems				•	•	•	•	•								•	•	•	•	•				
Milestones: Number of people trained				x	x	x										x	x							
Output 4. Disease resistant, high oil-yielding varieties of <i>M.spicata</i> and <i>M. piperita</i> identified and best production practices developed for different agroecological conditions in Afghanistan																								
Activity 4.1: Varieties tested		•	•	•	•	•	•	•																
Milestones: Research results and reports							x	x																
Output 5. Improved varieties of <i>M. spicata</i> and <i>M. piperita</i> along with associated production practices tested with farmers.																								
Activity 5.1: Farmers' participatory trials with selected varieties and production practices in target provinces														•	•	•	•	•	•	•				
Milestones: Trials established, field records and trial results																					X			
Activity 5.2: Organization of field days to train farmers, extension agents, and staff of MAAH in best agronomic														•	•	•	•							

Project Year	Year 1												Year 2											
Calendar Year	2005												2006											
Calendar Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
practices																								
Milestones: Field days organised and statistics on field days and trainings			X		X										X	x	X							
Output 6. Pilot oil-extraction plants and farm enterprises for manufacturing and marketing value-added products established.																								
Activity 6.1: Establishment of farm enterprises for extraction of oil and manufacturing and marketing of value added products	Ongoing activity																							
Milestones: Farm enterprise established (one in each target province)												X	X	X	X	X								
Activity 6.2: Installation of pilot oil extraction plant that can also be used for extraction from other herbs (RALF01-07 and RALF02-07)																								
Milestones: Pilot oil plants installed (one in each TP)																	X	X	X	X				
Activity 6.3 :Preparation of manuals in Dari and Pashtu on running and maintaining the extraction plants																								
Milestones: Manuals prepared and distributed																	X	X	X	X				
Activity 6.4: Baseline survey, cost benefit analysis, and livelihood impact analysis.																								
Milestones: Farm Households surveyed																					X	X	X	X
Activity 6.5: Interfacing with other RALF funded projects and ICARDFA-Projects such as Village Based Seed Enterprise project to create marketing avenues																								
Milestones: Interactive meetings and joint activities																								
Activity 6.6: Collaboration with micro-financers to arrange credit to mint cooperatives to install oil extraction plants and packing machines																								

