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The Committee Secretary
Senate Standing Committee on Foreign Affairs, Defence and Trade
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Dr Darmody

Inquiry into Australia's overseas development programs in Afghanistan

Please find attached the Australian Centre for International Agricultural Research (ACIAR) submission to the *Inquiry into Australia's overseas development programs in Afghanistan.* The ACIAR contact officer for the inquiry is Dr Simon Hearn, Principal Adviser who can be contacted on Tel:

I hope the attached submission is of assistance.

My best wishes for a successful and productive inquiry.

Yours sincerely

Nick Austin
Chief Executive Officer

Australian Government

Australian Centre for
International Agricultural Research

SUBMISSION TO THE

SENATE COMMITTEE ON FOREIGN AFFAIRS, DEFENCE AND TRADE

INQUIRY INTO AUSTRALIA'S OVERSEAS DEVELOPMENT PROGRAMS IN AFGHANISTAN

AUGUST 2012

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Senate Committee on Foreign Affairs, Defence and Trade

Inquiry into Australia's overseas development programs in Afghanistan

Executive Summary

The Australian Centre for International Agricultural Research (ACIAR) is a statutory authority that operates within the Foreign Affairs and Trade portfolio. The Centre's activities are part of Australia's Aid Program, with the objectives of advancing Australia's national interest through poverty reduction and sustainable development. ACIAR was established in 1982 to assist and encourage agricultural scientists in Australia to use their skills for the benefit of developing countries while at the same time working to solve Australia's own agricultural problems.

ACIAR facilitates the undertaking of agricultural research in developing country partners by working with the countries to identify their needs and priorities. These are matched with Australian research providers who identify the opportunities to extend their work to meet developing country needs in agricultural science and related disciplines. ACIAR also funds R&D to assess and enhance the policy environment affecting the adoption of the results of the research undertakings.

ACIAR commissions research groups and institutions, including universities, CSIRO and State departments of primary industry, private consultants and non-government organisations (NGOs) to carry out agricultural research projects in partnership with their counterparts in developing countries. In this submission the term 'agriculture' includes fisheries and forestry research.

Given its agricultural research funding, regional partnerships and management roles, ACIAR's activities may have a bearing on some aspects of this Senate Committee Inquiry's terms of reference. In particular the increasing emphasis on agricultural research as an essential component of regional and global food security policies have implications for social and political stability in the future.

Australia is justifiably regarded as a world leader in a range of arid, semi-arid, temperate and tropical agricultural research and production systems, much of which is directly relevant to conditions in developing countries including South and West Asian countries such as Afghanistan. Australian researchers and agricultural producers also operate in similar agro-ecological conditions to those prevailing in a number of Asian and African regional countries. In addition to research partnerships ACIAR also provides for formal and informal capacity building activities though both educational and joint project undertakings. Capacity building in its various formats is considered an important means of enabling developing countries to maintain ongoing research in the future, and to improve the prospects of adoption of research results, including new technologies and agricultural systems.

Against this background ACIAR works to:

- Deliver multidisciplinary agricultural research outcomes to improve sustainable agricultural production and food security in developing countries – this research covers crops, livestock and fisheries, forestry, natural resource management, economics and social sciences
- Fund informal and postgraduate training to build developing country research capacity to deliver and implement projects
- Communicate the results and impacts of its research
- Conduct and fund development activities that support research programs
- Administer the Australian Government's multilateral research partnerships including contributions to the research centres of the Consultative Group on International Agricultural Research (CGIAR).

In this submission further detail is provided for the Standing Committee on Foreign Affairs, Defence and Trade covering ACIARs involvement in Afghanistan with added detail on current and proposed agricultural research projects.

Afghanistan

Medium-term Agricultural Research strategy

Prolonged instability has weakened agricultural institutions and constrained Afghanistan's food and livestock production capabilities. Priorities have been developed through visits by the ACIAR Chief Executive Officer (CEO) and other senior staff, and discussions with leading agricultural R&D institutions and government bodies. A recent ACIAR–AusAID desk study of the agricultural R&D priorities of Afghanistan recognised the key role of agricultural development in the reduction of rural poverty, and recommended a focus on water-limited (rainfed and poorly irrigated) areas, and research to increase productivity of wheat and livestock systems and improved water management. Crop and livestock intensification is critical for the Afghanistan Government, and is supported by AusAID and ACIAR.

ACIAR's collaboration with Afghanistan started in 2002, focusing originally on wheat and maize varietal improvement. While wheat dominates crop production, maize is also of importance, especially in irrigated areas. Particular attention has been paid to capacity building; improving rust resistance in wheat, with specific attention to the new Ug99 stem rust; and promoting improved crop management. The operating environment is complex as a result of poor security and political uncertainty, which limits access by Australian scientists. ACIAR research in Afghanistan has been implemented by the International Maize and Wheat Improvement Center (CIMMYT), the International Crops Research Institute for the Semi Arid Tropics (ICRISAT) and the International Center for Agricultural Research in Dry Areas (ICARDA). Efforts are also being made to collaborate and coordinate with other implementing partners, including government, NGOs, grower and industry groups, and donor organisations.

The country program will focus on crop and livestock intensification and better water management. There will be linkages between the improvement of wheat varieties and agronomy, the development of forages for small ruminants, and community-based watershed management. ACIAR's project partners will work with established programs in agricultural extension and community development, in order to promote adoption of the research results.

2012–13 Research priorities and projects

More detail in attachments A, B, C and D.

Improved livelihoods of smallholder livestock farmers in the crop–livestock systems of Afghanistan (proposed, multilateral, ICARDA)

This research-for-development project is being proposed to disseminate best practices for forage production in small-scale crop–livestock production systems in Baghlan, Nangarhar and Mazar provinces.

Plant genetic resource conservation, documentation and utilisation in central Asia and the Caucasus (multilateral, ICARDA)

The International Center for Agricultural Research in the Dry Areas (ICARDA; Syria) has conducted emergency collection of threatened genetic resources, as well as training and coordination among the countries involved, and is systematically processing samples for enhanced access by the international community.

Sustainable wheat and maize production in Afghanistan (multilateral, CIMMYT)

Seed of robust and productive disease-resistant varieties of wheat and maize will be deployed by Afghani farmers. Wheat-breeding programs are being improved and wheat crop husbandry practices made more efficient.

Integrated catchment management and capacity building for improving livelihoods in Afghanistan (multilateral, ICARDA/ICRISAT)

Community interventions will be aimed at diversifying cropping systems, increasing water-use efficiency and building the long-term sustainability of agricultural systems through improved integrated catchment management and agronomic practices.

Improved livelihoods of smallholder livestock farmers in the crop–livestock systems of Afghanistan (proposed, multilateral, ICARDA)

The Issue

More than half of the Afghan population of 30 million live below the poverty line of one dollar per day. The number of poor and undernourished is increasing by 10-15% per year, a result of frequent droughts and increases in the price of food and feed, all of which are compounded by the global food and economic crisis.

Approximately 8 million Afghan farmers depend on crop-livestock production systems for their livelihood. Livestock are essential for rural Afghan families who keep small ruminants and dairy cows as a source of income and for insurance in times of need, crisis, or celebration (AusAID and ACIAR 2011). Thus, livestock are a means of mitigating impact of poverty on the rural poor. However, an insufficient feed base for the animal population has been identified as a key constraint for the livestock sector in Afghanistan (GIROA, 2009). The lack of sufficient feed is linked to: i) limited access to land and water; ii) lack of improved fodder production and livestock feeding technologies; iii) poorly developed input and output markets; iv) lack of effective farm policies and effective institutions and v) continuous environmental degradation.

The Opportunity

The demand for livestock products in developing countries continues to rise, along with the population, and represents a significant opportunity for livestock keepers in Afghanistan, especially if they are able to participate in a growing domestic market. In Afghanistan forage of sufficient quality for livestock has always been a limited resource, and worsens during years of drought. Normally, but especially during these periods, livestock productivity is low and with a reduced income Afghan farmers are more vulnerable. With livestock numbers decreasing in dry years and collapsing during drought periods (AusAID and ACIAR 2011), it is vital to increase forage production to reduce the risk of forage failure. This would improve livestock nutrition, resulting in a higher quality and stable livestock output for use in household consumption and for the sale of excess livestock and forages for improvements in the household income. However, this concept has been given limited attention by donors and implementing agencies). The Afghan Livestock Workshop, organized by the Advancing Afghan Agriculture Alliance (A4), has identified 'Feed, Forage and Nutrition' as a key area for offering opportunities to Afghan farmers, through the livestock sector (Motmed, 2008).

Goals and Objectives

A four year research project is proposed to test, evaluate, produce and disseminate a 'best practices' package for forage production in small-scale crop-livestock production systems in the Baghlan and Nangarhar provinces of Afghanistan.

The goal of the project is to improve the livelihoods of smallholder livestock farmers in the mixed crop/livestock areas of Afghanistan which have limited access to water resources. The objectives are:

1. Assess main production constraints leading to nutritional gaps in areas with intensive crop-livestock interactions to allow identifying appropriate technologies to reduce constraints and end-users of improved forage technologies
2. Identify and evaluate forage and fodder production option of target smallholder livestock systems
3. Expand the scope of existing community-based seed enterprises to include feed and forage seeds, vegetative propagation of shrubs and planting materials.

Partnerships and Approaches

The project will build on ICARDA's experience gained in leading the implementation of a multi-stakeholder livestock projects in Afghanistan. Using participatory approaches, ICARDA will collaborate with the Afghan Ministry of Agriculture, Irrigation and Livestock (MAIL) to disseminate an improved 'best practice' package(s) for forage and forage seed production. The project will focus on the improvement of forage production through the adoption of a 'best practices' management system, along with improved forage varieties under irrigated and rainfed conditions. Innovative platforms will be developed, along with capacity development of national partners, service providers, and

progressive farmers. Innovative, multidisciplinary research approaches will integrate forage, rangeland, livestock and socio-economic disciplines. A partnership among ICARDA, local National Agricultural Research and Extension systems (NARES), the University of Baghlan, Baghlan and Nangarhar farmer associations, and the Village-Based Seed Enterprises (VBSE) will be established, to support the implementation and objectives of the project.

Outputs and Impacts

The project will impact at least 600 households in 13 villages in Baghlan and Nanagarhar Provinces. About 3-4 agro-pastoral or crop-livestock communities in different agro-ecological zones will be selected in each province based on number of poor livestock farmers' market access. Adoption of the improved 'best practice' package(s) will increase household forage production and it is anticipated that the output of milk and dairy products increase by 15 to 25%, improving household food security and income. Where possible, the project activities will be linked with those of other development projects to undertake joint activities, share information, and reach out to a large number of poor farmers.

Plant genetic resource conservation, documentation and utilisation in central Asia and the Caucasus (multilateral, ICARDA)

Background

Crop production in Central Asia and the Caucasus (CAC) takes place under a range of environmental stresses that mirror many of those in Australia – for instance salinity, desertification, acidity, encroaching urbanisation and climatic changes. Both biotic (plant) and abiotic (soil) stresses and constraints create pressures on cropping varieties, and often cause rapid changes in the interactions between plants and their environment.

There is potential to address many of the factors threatening production in changing environments by tapping into the rich storehouse of agro-biodiversity found in cropping varieties in CAC. The region is both a centre of origin for many crop species and near relatives, and many varieties are adapted to a range of climates, environmental stresses and constraints. Maintaining the plant genetic resources (PGRs) of the CAC region is vital to realising this potential.

Since the break-up of the former Soviet Union in the 1990s research capacity in the CAC has been significantly disadvantaged. An effective research and development sector is vital for boosting agricultural productivity and for conserving any genetic resources that may have a valuable role to play in achieving greater productivity. The establishment of sustainable national programs, covering collection through to preservation, has been achieved through a previous ACIAR-ICARDA project. Scientists need to build on the momentum of this work to ensure capacity in PGR conservation and other plant-related research becomes entrenched.

Objectives

The project comprised the following objectives:

- Consolidate the development of a long-term regional capacity to collect, conserve, document, utilise and exchange PGR in accordance with their obligations as signatories to the International Treaty on Plant Genetic Resources for Food and Agriculture.
- Identify and assemble national base collections of seed for field crop species.
- Consolidate the development of a comprehensive national and regional PGR information system that will allow: 1) PGR workers to collect, acquire, conserve and document national PGR collections more efficiently; and 2) plant breeders to more efficiently utilise PGR from the region.
- Compile detailed information surfaces that characterises the environments from which PGR have been collected in the CAC region.
- Collect and characterise material from under-represented agro-climatic-edaphic regions in CAC.
- Identify and screen subsets of accessions originating from the CAC region that have potential variation for limiting factors of importance to the CAC and Australian scientific communities.
- Disseminate information generated in this project to likely end-users of PGR particularly in the CAC region and to the Australian scientific community.

Methodology

These tasks comprised the project program:

In pursuing capacity development of national programs the scientists provided technical support and training for established national PGR units. They developed the regional PGR network by linking national PGR units and arranged annual PGR coordination meetings. They provided technical and training support for the development of seed storage facilities.

To ensure data-capture and analysis they expanded national inventory databases to include collection site, characterisation and evaluation data associated with each accession. They developed a regional database and a mechanism to update it through networking national PGR units. The work included capture of information on global ex-situ holdings of CAC accessions into regional database. It involved use of GIS surfaces detailing the CAC environment to derive detailed data about collection sites. Accessions were screened for potential tolerance to a variety of important limiting factors

(particularly diseases) and trait-specific sub-sets were identified using eco-geographic data and statistical procedures.

An analysis using GIS tools was undertaken of detailed information gathered on all previous CAC collection missions. New plant collection missions focused on regions with high diversity and low representation in ex-situ collections.

Expected Outputs

Expected outputs include:

- Well-trained PGR units in all eight countries.
- Seed storage facilities developed in countries where necessary.
- A working PGR network within CAC.
- Regional database of detailed information associated with local and global *ex situ* collections of CAC accessions, including detailed information on environmental factors.
- Trait-specific subsets of accessions with potential tolerance to a variety of important limiting factors.
- Thorough documentation and analysis of previous collection missions in the CAC region.
- New accessions from strategic collection missions in areas under-represented in *ex situ* collections.

The project will have a significant impact on national capacity in CAC and internationally in providing comprehensive information on PGR.

Project Outcomes

This project followed on from two prior projects, funded by ACIAR, whose aims were to collect, document, conserve and characterise the rich agro-biodiversity of the central Asian and trans-Caucus region. A major sub-aim of this and previous projects was to develop the capacity of the national programs in the region to undertake their own activities to conserve and utilise their agro-biodiversity.

PGR conservation was firmly on the policy-maker agenda in each country involved in this project with associated policy national strategies at various stages of development. Further, there have been definitive improvements in the level of government support for PGR activities and in some cases an increasing commitment of resources. This project has contributed significantly to these developments. In Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan there are national institutes or gene banks for PGR conservation and utilisation with varying level of government support. Kazakhstan has a long-term project to construct a $10-million genetic resource and research facility. In Armenia the government has supported the formation of a cross-institutional PGR agency. Turkmenistan has built a national genebank, but lack of stability in government agency staffing and poor financial commitment has hampered activities.

Inventories of ex-situ collection were completed and the information captured into a common database format with a Russian interface. This database package was installed at most key institutes holding ex-situ collections. Documentation officers were trained in information gathering and database operations. Where appropriate, hardware such as computers and e-mail connections were provided. Local resource people and the ICARDA database specialist provided regional, in-country and one-on-one trainings.

All material collected from the region now has comprehensive agro-climatic data associated with it in the database; to date there are over 70 continuous surfaces available. The suite of agro-climatic parameters continues to expand and is proving valuable in the efficient selection of material to screen for various traits.

This project contributed significantly to the development of controlled environment storage facilities in seven out of eight countries in the region and training of the staff to manage them.

The collection missions gathered 1814 accessions, including cereals, legumes, pastures, oil and vegetable crops from 244 sites, covering 13 agro climatic zones in both Tajikistan and Armenia. The material was split with national programs and international collaborators. This work, along with previous missions in CAC, has significantly improved the gap in global holdings of PGR from the region.

Sustainable wheat and maize production in Afghanistan (multilateral, CIMMYT)

Background

Wheat is the major grain crop in Afghanistan. National production levels have ranged from 2.3-4.5M tons during the past 5 years. Demand is approximately 5M tons. In 2006, total production was 3.4M tons (of which 2.6M tons was irrigated and 0.76M tons was grown under rainfed conditions) leaving a cereal balance deficit of 1.3M tons. Approximately 55% of the irrigated wheat area is sown to improved, high yielding varieties. The main constraints to wheat production for small-scale farmers in Afghanistan are:

i. a lack of improved, adapted varieties;
ii. limited availability of quality seed;
iii. limited access to fertilizers;
iv. inadequate production technologies; and,
v. damaged rural infrastructure (irrigation systems; roads; markets).

Recovery efforts have been underway for the past 5 years, with assistance from FAO, many NGOs and International Agricultural Research Centres (including CIMMYT and ICARDA). The Ministry of Agriculture, Irrigation and Livestock (MAIL) is committed to rebuilding agriculture in Afghanistan and in October 2006 released its Agriculture Master Plan which places a strong emphasis on cropping and capacity building (CIMMYT is specifically mentioned in the Plan as an organisation that provides a "gold" standard for training).

During the period 2004-07 CIMMYT, through its country office in Kabul, has implemented a joint AusAID-ACIAR funded project with the overall aim to achieve a sustained increase in wheat and maize production and productivity in Afghanistan through research, training and technical interactions. The project has operated and delivered outcomes in an environment that has, and continues to, present logistical and security challenges. In particular, the project has successfully developed networks with a number of organisations operating in Afghanistan and leveraged considerable extra resources towards the aims of. The focus by CIMMYT and all partnerships has been towards working closely with the Government of Afghanistan and developing in-country capability. The project has, and continues to contribute to human resource development in support of the development of research capability, providing farmers with access to information and trials, linking with and supporting NGO activities, and contributing to new national regulatory frameworks especially in relation to management of plant varieties and seed (ACIAR review, July 2007).

Objectives

The proposed follow on to will build on the strong platform that has been established and focus on:

i. continued introduction and screening of new wheat lines with a particular emphasis on resistance to yellow rust and stem rust (Ug99);
ii. supporting the release of new high yielding varieties;
iii. supporting the production and dissemination of quality breeder seed;
iv. improved targeting of wheat improvement programs together with the evaluation and promotion of crop management practices; and,
v. on-going capacity building efforts.

Expected outputs

Expected outputs of the project include: new improved varieties of wheat and maize; greater access by farmers to seed of improved wheat varieties; improved knowledge of agro-ecological wheat production zones in Afghanistan and better targeting of new varieties that meet the needs of farmers and consumers in these different zones; improved knowledge and adoption of improved crop management practices; and increased technical skills of MAIL researchers and NGO staff towards wheat improvement.

About 80% of the population in Afghanistan is involved in agriculture. Improved wheat production will not only decrease reliance on costly wheat imports and international food aid efforts but will also contribute to food security, income generation and rural employment opportunities. A modest increase in the area sown to higher yielding varieties (HYV's) in the order of 20% with associated yield increases of 1 ton per hectare will result in an additional 500,000 tons of wheat. At USD 150 per ton, this represents an increased value of USD 75M. The emphasis on wheat and double cropping with maize will offer farmers an alternative to poppy cultivation without the attendant risks of growing an illegal crop.

The project will be coordinated in Afghanistan through CIMMYT's country office in Kabul by a resident project coordinator (Dr Mahmood Osmanzai, a crop scientist of Afghan/Canadian citizenship). The project will involve MAIL (especially the Agricultural Research Institute of Afghanistan (ARIA), FAO, and a range of NGOs with whom CIMMYT has worked for the past 5 years. Additional CIMMYT staff will be involved as necessary, especially in the areas of targeting (of agro-ecological zones), crop management, and stem rust (Ug99). Informal collaboration with the University of Sydney-Cobbitty, will be incorporated into the stem rust work and potentially higher-degree students.

Integrated catchment management and capacity building for improving livelihoods in Afghanistan (multilateral, ICARDA/ICRISAT)

Background

To increase food security and improve rural livelihoods in Afghanistan, it is critical to invest in soil and water conservation and associated technologies that enhance productivity and natural resource use efficiency, minimise risk and increase incomes. Afghanistan lacks trained human resources personnel to support agricultural research and development. This adaptive research project will focus on increasing catchment productivity, increasing the productivity of dryland areas, and improving livelihoods of rural people. This will be achieved by increasing the productivity of wheat-based farming systems; by enhancing conservation and efficient use of natural resources; by building the capacity of the Ministry of Agriculture, Irrigation and Livestock (MAIL), including the Department of Agriculture, Irrigation and Livestock (DAIL), in the area of natural resource management and wheat/legume productivity; and through sharing and enhancing knowledge transfer between project partners and farmers.

The proposed project will be managed by the International Center for Agricultural Research in the Dry Areas (ICARDA), with support from the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and will work closely with the International Maize and Wheat Improvement Center (CIMMYT). The project will work with MAIL through its Agriculture Research Institute of Afghanistan (ARIA), the Dryland Farming Unit (DLF) and DAIL offices in Baghlan, Balkh, Bamyan, Jowzjan, and Samangan provinces; and through DAIL Bamyan with Solidarités International, and the Sustainable Land Management Institute (SLMI) at Bamyan University; and with Baghlan, Balkh and Kabul Universities.

Objectives

Selection of target provinces is based on the area under rainfed agriculture, wheat productivity, accessibility and the security situation. The rainfed area in the selected provinces of Baghlan, Samangan, Jowzjan, Balkh, Kabul and Bamyan is estimated to be 150,000, 146,000, 100,000, 89,000, 10,000 and 6,000 ha, respectively. The main community-based catchment benchmark site (150–200 ha) is proposed to be developed in Balkh (Khulm district, Sayad village), with the establishment of a satellite site (60 ha) at the Badam Bagh Research Station of MAIL, located in Kabul City, Kabul province. The former will be a community-based development initiative expected to benefit more than 2,000 farmers and locals, while the latter will be developed as a demonstration site that is easily accessible and used predominantly for capacity development and for awareness-raising. Due to its location and adequate security, Badam Bagh is suitable for organising visits for farmers, policymakers and donor representatives who, due to security concerns, are not able to visit other provinces. Activities on evaluation and dissemination of drought-resistant varieties of food crops (wheat and legumes) will be conducted in Baghlan, Balkh, Bamyan, Jowzjan, Kabul and Samangan provinces.

Capacity building of MAIL and DAIL staff is essential and will be at various levels: medium-term in-service training in India for 15 MAIL/DAIL staff and university teachers in dryland agriculture; *in situ* training of researchers and extension workers in Afghanistan; and training of farmers through field days and site visits. Training in Afghanistan will be linked to initiatives such as SLMI at Bamyan and will also use project learning sites. Training in India will be organised through Indian support to MAIL in the form of scholarships and training where possibilities of cost-sharing exist. ICARDA has completed initial discussions with the Indian Embassy at Kabul, and the response has been positive. A detailed plan will be prepared in consultation with MAIL, the Indian Embassy, and with the national research institutes of the Indian Council of Agricultural Research (ICAR). Potential ICAR partner institutes are the Central Research Institute on Dryland Agriculture (CRIDA), Hyderabad, and the Indian Institute of Pulse Research (IIPR), Kanpur. These initiatives will increase the capacity of: research and project implementation capacity MAIL/DAIL; university teachers who will be teaching agricultural graduates with a prospect of being employed by MAIL/DAIL; and farmers.

ICARDA has remained active in providing various capacity-building opportunities to MAIL/DAIL, the Ministry of Higher Education and several of its universities through: the Research in Alternative

Livelihoods Fund (RALF), funded by the United Kingdom's Department For International Development (DFID); the project on capacity development of Afghan researchers, funded by the Canadian International Development Research Centre (IDRC); and an ongoing Japan International Cooperation Agency (JICA) – ICARDA program. The project will build upon these experiences and linkages.

The benchmark catchment will include learning sites for achieving higher levels of crop and farming system productivity, as well as sites for hands-on training of scientists, extension staff, non-government organisations (NGOs) and farmers. The sites will also be important in familiarising policymakers with the project. The project will build on ongoing joint activities on cereal systems, including legumes, with MAIL/DAIL, DLF, CIMMYT and ICARDA in the target provinces.

Expected outputs

Research in this project will focus on: understanding existing farming systems, livelihoods and smallholder family needs; measuring the effect of catchment-management interventions on water capture/run-off and soil loss; measuring the effects of interventions to close the yield gap and generating good agricultural practice guidelines; introducing new cereal and legume cultivars with multiple uses through participatory approaches; and understanding uptake pathways and developing information and communication technologies (ICT)-based dissemination methods.

The project will contribute towards the sustainable economic wellbeing of a large number of rural poor through increased productivity and the rehabilitation and efficient use of natural resources. However, expected outputs, adoption and impact will heavily depend on several factors, including social acceptance of the project, extent of understanding and cooperation by the communities, willingness of the male members to allow their women to participate, and on the security situation at the implementation sites during the proposed activities.