



# ANNUAL RESULTS REPORT

## AFGHANISTAN ACIAR R4D PROGRAM 2014

### Abstract

This, the first Annual Results Report for the Afghanistan ACIAR R4D program, is based on the Results Framework agreed by all partners in May 2014. The Annual Results Report aims to summarise and consolidate the outcomes and impacts achieved by the individual projects. In doing this, the Annual Results Report assists the Program's Oversight Group (including the Government of Afghanistan, ACIAR and DFAT) appreciate the cumulative progress and key issues inherent in the program.

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# Annual Results Report

Afghanistan ACIAR R4D Program 2014

## Introduction

In 2012, AusAID and ACIAR agreed to collaborate on a four-year, \$A17.735m program to *improve and sustain the productivity of Afghan farming systems in water scarce environments through adaptive research*<sup>1</sup>. The agreement included funding for ACIAR to run three projects (Table 1).

Table 1: Projects and budgets comprising the four year Afghanistan ACIAR R4D Program

Name	Lead organisation	Funding
1. Sustainable Wheat & Maize Production in Afghanistan	CIMMYT	\$6,458,922
2. Integrated Catchment Management and Capacity Building for improving livelihoods in Afghanistan	ICARDA	\$5,375,893
3. Forage options for smallholder livestock in water-scarce environments of Afghanistan	ICARDA	\$3,644,392
Management and Oversight	ACIAR	\$2,255,793
<b>Total</b>		<b>\$17,735,000</b>

Initially, the projects were envisaged to run in parallel. In practice, the projects have become somewhat staggered. The first two projects are now in their second year; the third project (livestock) commenced in early 2014.

Table 2: Phasing of current ACIAR projects in Afghanistan

	2012	2013	2014	2015	2016	2017
Sustainable Wheat & Maize Production in Afghanistan						
Integrated catchment management						
Forage options for smallholder livestock						

It is also worth noting that the *Wheat and Maize* engagement is, in fact, the fourth in a series of ongoing collaborations with CIMMYT in Afghanistan (the first commenced in 2002)<sup>2</sup>.

<sup>1</sup> AusAID ACIAR Record of Understanding No 14376; Schedule 41.

<sup>2</sup> The previous three projects were:

- SMCN/2002/028, Stress tolerant wheat and maize for Afghanistan: Seeds of Strength, a two year project running from July 2002 to June 2004 (A\$1m);
- CIM/2004/002 – Wheat and maize productivity improvement in Afghanistan, a three year project running from Oct 2004 to September 2007 (A\$1.1m); and

This document, the first *Annual Results Report* for the Afghanistan ACIAR R4D program, is based on the *Results Framework* agreed by all partners in May 2014. The *Annual Results Report* aims to summarise and consolidate the program level outcomes and impacts achieved by the individual projects, as outlined in their mid-2014 Annual Reporting. In doing this, the *Annual Results Report* assists the Program’s Oversight Group (including the Government of Afghanistan, ACIAR and DFAT) appreciate the cumulative progress and key issues inherent in the program.

This first *Annual Results Report* is largely based on the results achieved during Afghanistan’s 2013 growing season, and thus only preliminary outcomes can be presented<sup>3</sup>. The reporting has been further constrained by:

1. the delayed commencement of the “forage options for smallholder livestock project”. This only commenced in 2014, and thus there are, as yet, no field results;
2. the significant revisions made to the scope and direction of the *Integrated Catchment Management* project; and
3. the limited data reporting and lack of considered analysis undertaken by the project teams in preparing their Annual Reports. These reports, largely focussed on outputs, are of limited utility. Even in cases where significant progress has been apparent, the Annual Reports rarely discussed the implications or the likely contribution to the agreed *Results Framework*. This will need to be addressed by the *Program Oversight Group* prior to the 2015 Annual Reporting cycle.

As such, preparation of this initial *Annual Results Report* has depended not only on the Annual Reporting by projects, but also on:

1. the publications produced by the two ongoing projects;
2. web based information and blogs related to the two projects;
3. progress presentations made at the March 2014 *Program Oversight Group* meeting in Dubai; and
4. consultations and field visits with ICARDA and CIMMYT in Kabul during July 2014.

The results are presented in tabular format, and reflect the results hierarchy as outlined in the *Results Framework* (Figure 1).

Figure 1: Results hierarchy of the Afghanistan Research for Development Program



• CIM/2007/065 - Sustainable Wheat and Maize Production in Afghanistan, a four year project running from October 2007 to December 2011 (\$1.5m).

<sup>3</sup> Results from the 2014 season are yet to be collated and analysed.

## Goal: Sustainable productivity in Water Scarce Environments

Improved and sustained productivity of Afghan farming systems in water scarce environments through adaptive research.

Indicator	Results Achieved to mid-2014
<b>Potential<sup>4</sup> increased productivity<sup>5</sup> of target farming systems that can reasonably be expected within the next five, ten and fifteen years.</b>	<p>Increases to the potential productivity of farming systems have arisen primarily from the extensive testing and official release of improved varieties. While work on improved agronomic practices, conservation agriculture, watershed management and diversified crop and forage options is progressing little solid evidence of productivity gains is yet available.</p> <p>In 2013, Australian sponsored research has resulted in the release of 7 improved wheat varieties, 4 barley varieties and 2 chick pea varieties. The wheat lines released included irrigated varieties with the potential to produce over 6T/Ha, and rain fed wheat varieties with the potential to produce 3.8T/Ha. These yields are about 10% better than any current variety and are more than double the current average yields of 2-3T/Ha for irrigated wheat and 1-1.5T/Ha for rain fed wheat.</p>
<b>Potential number of beneficiaries (men and women) who can reasonably be expected to attain the proposed productivity increases within the next five, ten and fifteen years.</b>	<p>Wheat is the staple commodity in Afghanistan – it is grown on 2.5 million hectares and in excess of 20 million rural people (or about 7 million households) depend directly on the crop. On average about 1.17 million Ha of irrigated wheat is grown each year, while up to 1.38 million Ha is planted in rain fed areas depending on the season. Adoption of new varieties is however very slow as it is constrained by factors such as seed availability, timeliness of distribution, cost of seed, and localised agro-climatic requirements. ACIAR analysis from 2013 estimates that adoption of these improved varieties is expected to reach up to 20% of the planted area in the medium to long term. If this occurs then in the long term up to 1.5 million households will benefit.</p>
<b>Potential increase in total production and value of production that can reasonably expected within the next five, ten and fifteen years.</b>	<p>Another way of assessing the impact of new varieties is to look at the actual increases in national wheat productivity and production over the years in which Australian supported varieties have entered the seed system. This shows that irrigated productivity has increased by about 3% year on year since 2005 (unfortunately rain fed productivity shows little improvement). A number of factors could influence this, including improved irrigation infrastructure, inputs and knowledge. However, the gradual influx of improved germplasm will account for a portion of productivity gains in irrigated situations. In rain-fed areas the release and uptake of new varieties has been very limited, and thus improvements have been very marginal. Even if we assumed that improved genetics accounted for a third of the improvement in irrigated conditions, this</p>

<sup>4</sup> Potential increases are in relation to the estimates for outputs and outcomes provided by each project's research.

<sup>5</sup> Productivity should not just be measured on the basis of land area. Water productivity will provide the *de facto* indicator of improved sustainability in water scarce environments. Another important element of productivity will be labour productivity (men and women).

Indicator	Results Achieved to mid-2014
	would mean that varieties have improved production by 1% annually – or 35,000T/yr (approximately \$10m/year). While modest, this is still appreciable.
<b>Actual increase in productivity of target farming systems resulting from Project interventions.</b>	Not available as yet.
<b>Actual number, and ratio of, target beneficiaries (men and women) who achieved the productivity increases in target farming systems as a result of Program interventions.</b>	Not available as yet.
<b>Actual increase in total production and value of production attributable to Program interventions.</b>	Not available as yet.

## Purpose Component 1: Improved Grain Productivity in Targeted Farming Systems

Increase both the quality and availability of improved wheat and maize varieties adapted to the irrigated and rainfed farming systems of Afghanistan.

Between 2002 and 2014, Australia’s collaboration with CIMMYT has resulted in the release of 12 wheat, 4 maize, and 2 barley varieties. In addition, Australia’s more recent partnership with ICARDA, has contributed to the 2013 release of 5 wheat, 2 barley, and two chick pea varieties. Combined, these CIMMYT and ICARDA varieties, provided the foundation from which other donors (particularly the EU and FAO) have established the public-private partnerships necessary for the multiplication and distribution of certified seed. There are still huge constraints and risks to this fledgling Afghan seed system, and ongoing work by the ARTF funded *Afghanistan Agricultural Inputs Project* faces significant challenges to strengthen the systems long-term sustainability. None-the-less it is the quality of the improved germplasm, which forms the basis of demand within the seed system. In this regard, Australian support has been instrumental to broadening the range and quality of the varieties available. Of the 2014 total production of Certified Seed, about half is still made up of the newer (post 2000) varieties, and Australian collaboration with CIMMYT and ICARDA is responsible for the bulk of these. Of these newer varieties, all show adequate field resistance to common yellow rust strains, and about half of this new seed (i.e. 26% of total seed available in 2014) is resistant to Ug99. The older pre 2000 varieties make up the other half of current stocks of Certified Seed - unfortunately most of this shows significant susceptibility to common strains of yellow rust and all is susceptible to the virulent Ug99 strain. Every effort should be made to phase these older varieties out of the system<sup>6</sup>.

Indicator	End of Project Target	Results Achieved to mid-2014																								
<b>Number and productivity benefits of new wheat and maize varieties</b>	<ul style="list-style-type: none"> <li><b>Wheat:</b> six new varieties, three for irrigated domain and three for rain fed conditions, minimum yield benefit 5% and/or disease resistance</li> </ul>	<p>In 2013, the Afghanistan Varietal Release Committee (AVRC) announced 14 new crop varieties. Five of these (three wheat and two barley varieties) originated from the CIMMYT <i>Wheat and Maize Project</i>. A further nine varieties (five wheat, two barley and two chickpea lines) originated from the ICARDA <i>ICM project</i>. Information on the improved varieties released in 2013 with the support of Australian Aid is summarised in Table 3 below.</p> <p><i>Table 3: AVRC varieties released in 2013 that arose from Australian support to ICARDA and CIMMYT</i></p> <table border="1"> <thead> <tr> <th>Project</th> <th>Crop</th> <th>Name</th> <th>Type</th> <th>Farming</th> <th>Potential</th> <th>Average</th> <th>% over best</th> </tr> </thead> <tbody> <tr> <td>W&amp;M</td> <td>Wheat</td> <td>Lalmi 04<sup>7</sup></td> <td>Spring</td> <td>Rain fed</td> <td>6.8</td> <td>3.8</td> <td>10.4</td> </tr> <tr> <td>ICM</td> <td>Wheat</td> <td>Poza-e-shan 013</td> <td>Facultative</td> <td>Rain fed</td> <td>2.77</td> <td>2.14</td> <td>-</td> </tr> </tbody> </table>	Project	Crop	Name	Type	Farming	Potential	Average	% over best	W&M	Wheat	Lalmi 04 <sup>7</sup>	Spring	Rain fed	6.8	3.8	10.4	ICM	Wheat	Poza-e-shan 013	Facultative	Rain fed	2.77	2.14	-
		Project	Crop	Name	Type	Farming	Potential	Average	% over best																	
W&M	Wheat	Lalmi 04 <sup>7</sup>	Spring	Rain fed	6.8	3.8	10.4																			
ICM	Wheat	Poza-e-shan 013	Facultative	Rain fed	2.77	2.14	-																			

<sup>6</sup> Especially the very yellow rust susceptible lines – PBW154, Herat 99 and Gori 96.

<sup>7</sup> <http://www.shigen.nig.ac.jp/ewis/article/html/149/article.html;jsessionid=F691911C07F49C0BCF0FF7E2321A1A18>

Indicator	End of Project Target	Results Achieved to mid-2014							
officially released.	<ul style="list-style-type: none"> <li><b>Maize:</b> three new varieties, average productivity benefit 10% and/or disease resistance</li> </ul>	ICM	Wheat	Herat 013	Facultative	Rain fed	2.59	2.07	-
		ICM	Wheat	Zarin	Facultative	Rain fed	2.39	1.96	-
		ICM	Wheat	Shishambagh 013	Facultative	Irrigated	6.17	4.85	-
		ICM	Wheat	Dehdadi 013	Facultative	Irrigated	5.45	4.50	-
		W&M	Wheat	Kabul 013	Spring	Irrigated	8.9	6.2	9
		W&M	Wheat	Bamyan 013 <sup>8</sup>	Winter	Irrigated	9.2	6.6	8.2
		W&M	Barley	Takhar 013	Spring	Irrigated	6	4.4	60
		W&M	Barley	Darulaman 013	Spring	Irrigated	5	4.2	77
		ICM	Barley	Shamal 013	Spring	Irrigated	4.65	4.04	-
		ICM	Barley	Balkh 013	Spring	Irrigated	5.94	4.19	-
		ICM	Chick Pea	Rabat 013	Winter	Irrigated	2.03	1.82	0
		ICM	Chick Pea	Baghlan 013	Spring	Irrigated	2.4	2.3	1
		<p><b>Wheat:</b> Progress on testing and release of improved wheat is already well ahead of target with eight varieties (four rain fed and four irrigated varieties released). Pleasingly, four of the eight new wheat varieties are specifically suited to rain fed conditions, while the other four are irrigated varieties. The improved rain fed yields of between 1.96 to 3.8 T/Ha, and irrigated yields of between 4.5 to 6.6 T/Ha, are about double the current average yields of 1-1.5T/Ha and 2-3T/Ha respectively. It will however take several years for the Afghan seed system to produce and distribute sufficient seed for farmers to confirm the acceptability and actual performance of these varieties. In 2014, only between 40 and 240 kg of breeder seed of each variety was available for multiplication.</p> <p>Unfortunately most of the varieties released fail to meet the expected criteria of a 10% yield advantage over the best current alternative – this is disappointing and needs to be discussed by the teams. Pleasingly however, each of the varieties released by the W&amp;M project show solid tolerance to major diseases. Unfortunately no data is provided on disease susceptibility by the ICARDA ICM project.</p> <p>It is clear that availability of improved, disease resistant, high performing varieties is no longer the critical constraint to improved wheat production in Afghanistan. The primary challenge is the capacity of the system to effect good distribution and adoption of these varieties. As such, the efforts of the program should focus on stabilising MAIL capacity to test and demonstrate new varieties.</p> <p><b>Other Crops:</b> While barley varieties were not specifically identified in the <i>Results Framework</i>, it is pleasing to see these available. Barley offers comparatively better drought and cold tolerance to wheat, and thus provides an alternative cropping option for farmers in more marginal areas or seasons. Similarly the release of two chick pea varieties is beneficial as these have significant nutrition and crop rotation advantages – the reason for the release is however unclear given their marginal claimed yield advantage.</p> <p><b>Maize:</b> While no maize varieties have been released during the current project, performance data from CIMMYT shows that two new maize lines (one open pollinated and one hybrid) are showing promise and release of these varieties is expected in the next 1-2 years.</p>							

<sup>8</sup> <http://www.shigen.nig.ac.jp/ewis/article/html/141/article.html>

Indicator	End of Project Target	Results Achieved to mid-2014
<b>Number and percentage of farmers (men and women) incorporating new varieties in their annual planting.</b>	<ul style="list-style-type: none"> <li>Over four years, 15% (25,000 farm households) around research and demonstration sites incorporate new varieties in their annual planting.</li> <li>Over four years, 6% (60,000) farm households in the targeted provinces incorporate new varieties in their annual planting</li> </ul>	<p>In 2013, ACIAR completed an Impact Assessment<sup>9</sup> of its support to CIMMYT between 2002 and 2012. This showed that, prior to the current project commencing, adoption of improved CIMMYT varieties varied considerably. For rainfed wheat, adoption was only reported to any extent in one of the seven Provinces<sup>10</sup> surveyed (Kunduz). On the other hand, for irrigated wheat, adoption was more widespread, appearing in five of seven Provinces (but interestingly not in Balkh and Nangahar where CIMMYT had been conducting trials). Across the farmers surveyed, CIMMYT varieties accounted for 10.4% of the irrigated area planted.</p> <p>Very little more recent data is provided by the current project on the uptake of new varieties in CIMMYT's four target provinces (Kabul, Nangarhar, Herat and Balkh). The <i>Wheat and Maize project</i> conducted a baseline survey in 2013 that gave some indication of the current situation. This showed that the majority of varieties grown were still traditional lines, and that most of the "modern" varieties were in fact pre 2000 releases, and were thus often quite susceptible to yellow rust. Of the post 2000 varieties, two were present in Nangarhar<sup>11</sup> (Chonte #1 and Moqawim 09), and one was present in Kabul (Darulaman 07). None were recorded in either Herat or Balkh.</p> <p>It is clear from the limited, and somewhat contradictory data available, that adoption is quite patchy and largely focused on irrigated varieties. Understanding the adoption patterns and constraints of the new varieties will be a significant challenge for the Project.</p>
<b>Area planted and productivity benefits achieved by farmers incorporating new varieties.</b>	<ul style="list-style-type: none"> <li>6,000 hectares in and around research and demonstration sites, productivity benefit 12%</li> <li>15,000 hectares in the targeted provinces, productivity benefit 12%</li> </ul>	<p>As with the above targets, very limited, and often contradictory data is currently available on the areas planted. As mentioned above, the Impact Assessment conducted by ACIAR showed CIMMYT varieties accounted for 10.4% of the irrigated area planted, but this was concentrated in five of the seven Provinces surveyed. This survey also showed that irrigated varieties gave a significant yield advantage of 35% (based on weighted data).</p> <p>Rain fed varietal adoption and performance is even less understood. Not only did the Impact Assessment show limited uptake, but in the two Provinces where new releases were recorded, their performance was poorer than local rain fed varieties<sup>12</sup>.</p> <p>Clearly, much better data is needed and the projects must focus on improving their understanding of the adoption and impact of the varieties they have produced.</p> <p>Lastly, the projects may wish to review or clarify the targets proposed. Based on the volume of certified seed of Post 2000 varieties produced in 2014 (12,061 T), this should have already resulted in sufficient seed for over 120,000Ha to be planted for the winter and spring crops. While there is an unfortunate lack of information on distribution of this certified seed, it does indicate that the targets set are likely to be well below current practice.</p>
<b>Accessibility of new</b>	<ul style="list-style-type: none"> <li>Share of new varieties included in seed chain -</li> </ul>	<p>Once again, there is very limited data provided, but the little that does exist suggests that the targets proposed need to be revised. Improved wheat varieties, produced with Australian support between 2002 and 2012, already comprise in excess of 40% of the total</p>

<sup>9</sup> ACIAR Impact Assessment Series 85

<sup>10</sup> Baghlan, Balkh, Kabul, Kunduz, Laghman, Nangarhar and Takhar

<sup>11</sup> And in contrast to the findings of the Impact Assessment

<sup>12</sup> This may be because improved "irrigated" varieties were mistakenly planted in these "rainfed" areas.

Indicator	End of Project Target	Results Achieved to mid-2014
<b>varieties to farmers.</b>	20% of the total amount of certified seed is of improved varieties <ul style="list-style-type: none"> <li>80,000 farmers using certified seed of new varieties</li> </ul>	<p>(albeit limited) volume of certified seed available in Afghanistan<sup>13</sup>. It is also doubtful that varieties released during the current Program (e.g. those released in 2013), will enter the Afghan Seed System to any great extent until after the end of the current phase. As such, the 20% target is unclear and needs amendment.</p> <p>That said, distribution data for certified seed in Afghanistan is also very unreliable – for example there are claims that in 2013 certified seed was distributed to over 201,542 farmers. However, uneven distribution, significant “capture” of improved varieties, late supply of seed, poor labelling, high seed cost, and lack of varieties specifically suited to rain fed conditions, significantly compromises this claim. If it is true, then Australian supported varieties released during the period 2002 to 2012, could conceivably already have reached 80,000 people. Project teams will need to ensure that on-the-ground monitoring of farmer households is used to triangulate this data. Once again, it is doubtful that sufficient quantities of the more recent releases (i.e. 2013) will be available for a number of years yet.</p>
<b>Policy commitment and improved capacity of Afghan agencies to run their own varietal testing program.</b>	<ul style="list-style-type: none"> <li>Standard procedures established and operating for testing and release of new varieties of major cereal crops, including wheat and maize, in Afghanistan</li> </ul>	<p>Over the years, the project has put considerable effort into building the capacity of MAIL to ensure that ARIA staff have the capability to maintain the varietal testing and evaluation program into the future. As a result of this long term assistance, MAIL/ARIA was able to take the lead in facilitating the <i>Annual Results Assessment and Planning Workshops</i> in 2013 – one for wheat and one for maize. MAIL/ARIA is also managing, and in some cases leading, the multi-location assessment trials. However considerable mentoring is still required in areas of logistics, trial planning, data analysis and reporting.</p> <p>To meet these remaining capacity gaps, the project trained key staff from MAIL/ARIA in Experimental Design, Conservation Agriculture, and Wheat Rust Management during 2013/14.</p>

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<sup>13</sup> The National Seed Board data shows that in 2014, Afghanistan’s production of certified wheat seed will be 24,201 T (or about 8% of the estimated 300,000 T annual requirement). Optimally in developing countries, certified seed should comprise between 10-15% of annual requirement.

## Purpose Component 2: Improved Water Management in Targeted Farming Systems

Improve the use of water resources by households dependent on dryland agricultural production through integrated watershed development and capacity building.

The Integrated *Catchment Management Project* is a conglomeration of ICARDA activities in Afghanistan and thus has a broad focus. It has made only limited progress against its key outcomes during the year. ACIAR has asked the project to remodel its approach and, broaden its target watersheds. The project team has responded well to this challenge and put considerable effort into the identification and characterisation of new watersheds.

Indicator	End of Project Target	Results Achieved to mid-2014
<b>Increased water availability, reduced soil erosion, and reduced conflict, arising from the promotion of better catchment management options.</b>	<ul style="list-style-type: none"> <li>The acceptability and adoption of better catchment management options to be promoted.</li> <li>Improved wheat and legume lines to be introduced under rain-fed conditions in 5 provinces, with increases in yield of between 30-40% anticipated.</li> </ul>	<p>While the baseline survey data has commenced (but yet to be completed) and nine training events are reported for the year, there is no information provided on the acceptability or adoption of watershed management practices within local communities.</p> <p>Progress on agronomic improvement seems better. As mentioned above, in 2013 the AVRC released nine varieties (five wheat, two barley and two chickpea lines) that originated from ICARDA <i>ICM project</i>. Unfortunately, no information on the lines released is provided. ICARDA will need to verify and update Table 2 in the above section on <i>Improved Grain Productivity</i>.</p>
<b>Number and percentage of farmers (men and women) incorporating new conservation options in their farming system.</b>	<ul style="list-style-type: none"> <li>ICARDA have established self-help groups for both women and men, specifying 500 women to be directly impacted by the project.</li> </ul>	<p>Progress is limited and little evidence exists as to the level of local ownership and commitment. Community groups have been established for Watershed Management in the two original watershed sites, but group formation is still needed in new sites, once they are selected. One small Herbal Remedies Producer Association has been established in Balkh.</p>
<b>Area to be benefitted, and productivity gains to be achieved, by farmers incorporating</b>	<ul style="list-style-type: none"> <li>Positive productivity impacts evidenced at model benchmark sites will encourage policy commitment to better and</li> </ul>	<p>Nil as yet</p>

Indicator	End of Project Target	Results Achieved to mid-2014
<b>new conservation options.</b>	broader watershed management policies. Programmed visits for MAIL and other government agency staff will help key policy makers identify what measures work best in the Afghan context, and hence formulate improved policies.	
<b>Accessibility of new forage and fodder options to farmers.</b>	<ul style="list-style-type: none"> <li>3,000 male farmers from the target provinces will directly benefit from the introduced perennial/annual forage crops and enhanced existing fodder sources; while more than 20,000 will indirectly benefit.</li> </ul>	Nil as yet
<b>Improved capacity and policy commitment of Afghan agencies to the running of their own catchment management and conservation options programs.</b>	<ul style="list-style-type: none"> <li>The model benchmark site will be first watershed management project of its size in the country. With awareness creation, its benefit will be nationwide, and will impact on policies.</li> </ul>	<p>Significant work has occurred to characterise the Saiyad watershed site in Balkh. Water Management Groups have been formed with local communities, and significant plantings of pistachio and forage shrubs have occurred. Characterisation of the four new catchment has not commenced.</p> <p>While activities are significant, little information is currently available on the impacts on watershed sustainability or on the livelihoods of local communities.</p>

## Purpose Component 3: Improved Livestock Productivity in Targeted Farming Systems

Increase the availability of feed resources adapted for low water use as supplementary feed in the crop-livestock systems of Afghanistan which are increasingly constrained by water.

The *Forage Options for Smallholders* project commenced operations in Afghanistan in early 2014. As expected progress has largely been focused on establishment activities.

Indicator	End of Project Target	Results Achieved to mid-2014
<p><b>Number, type and productivity benefits of new forage and fodder options promoted.</b></p>	<ul style="list-style-type: none"> <li>• At least three new forage cereal/legume and two shrub species promoted.</li> <li>• Expected increase in forage production of 25% through the promotion of high yielding forage species with an extended season of forage availability.</li> <li>• 1000 new households growing the promoted forage species (increased forage production with high nutritive value- particularly in early spring -will help decrease the lamb mortality rate by 15-20%; increase weaning weight by 3kg per lamb; and increase ewe prolificacy by 15% in the short term)</li> <li>• Feed costs are reduced when compared with more intensive shed-feeding systems (higher forage production will enable</li> </ul>	<p>Preparatory activities are well structured and include:</p> <ul style="list-style-type: none"> <li>• The importation of 14 lines of improved cold and drought tolerant forage crops from ICARDA and Turkey in 2013. Multiplication of seed is underway in Nangarhar and Baghlan;</li> <li>• Further importation in June 2014 of potential forage crops and shrubs from CSIRO and DAFWA scientists in Australia;</li> <li>• The development of an integrated capacity building plan to meet forage research needs in Afghanistan. The first training will occur in October 2014 at Konya, in Turkey. This training will focus on: <ul style="list-style-type: none"> <li>○ improved management of forage production; and</li> <li>○ management of forage trials.</li> </ul> <p>The course coincides with the Small Ruminant Congress.</p> </li> <li>• Identification of nutritional gaps in livestock feeding and potential technologies to address these. This will be aided by a literature review and survey of the main climatic, edaphic and agronomic constraints, along with the characterisation of the main feeding systems in the two target Provinces;</li> <li>• The development of the baseline survey tool (and training of enumerators) to characterize forage seed production and forage markets.</li> </ul>

Indicator	End of Project Target	Results Achieved to mid-2014
	<p>livestock holders to rely less on concentrated feeds, and ultimately reduce feed costs in targeted systems by 10-15%)</p> <ul style="list-style-type: none"> <li>Overall benefits from these increases in forage and animal production should be reflected in higher household income by approximately 10%.</li> </ul>	
<p><b>Number and percentage of farmers (men and women) incorporating new forage and fodder options in their farming systems.</b></p>	<ul style="list-style-type: none"> <li>A total of 1000 farmers (80% male – 20% female) to be engaged in the new forage production options.</li> </ul>	<p>Nil</p>
<p><b>Area planted and productivity benefits achieved by farmers incorporating new forage and fodder options.</b></p>	<ul style="list-style-type: none"> <li>Area planted with new forages at research and demonstration sites is expected to total 10 ha in each Province. 200 ha of land at the provincial level to be dedicated to the new forage production options.</li> </ul>	<p>Nil</p>
<p><b>Accessibility of new forage and fodder options to farmers.</b></p>	<ul style="list-style-type: none"> <li>Forage seeds and planting material to be available through 2 Village-Based Seed Enterprises, and 4 community-based plantations.</li> </ul>	<p>Nil</p>
<p><b>Number of village and informal seed programs incorporating new forage and fodder</b></p>	<ul style="list-style-type: none"> <li>2 of the 17 well-established Village-Based Seed Enterprises (1 in each target province), will be used for forage seed processing and delivery. In addition, 4 community-based</li> </ul>	<p>Nil</p>

Indicator	End of Project Target	Results Achieved to mid-2014
<b>options, and quantity available.</b>	forage shrub plantations will be established, to provide shrub seed and seedlings to farmers.	
<b>Improved capacity and policy commitment of Afghan agencies to the running of their own testing programs for new forages and fodders.</b>	<ul style="list-style-type: none"> <li>Provision of technical backstopping to improve the capacity of Afghan institutions and agricultural services. Training and professional development programs in Australia and Afghanistan for Afghan scientists, students and researchers - this will strengthen participating Afghan institutions in order to run their own forage testing programs.</li> </ul>	Nil