ICARDA

Science for resilient livelihoods in dry areas

ICARDA Strategic Plan 2017-2026

Science for resilient livelihoods in dry areas

September 2018

ICARDA Strategic Plan 2017-2026

Science for resilient livelihoods in dry areas

September 2018

Acronyms

CBBP	Community-Based Breeding Program
CCT	Cross-Cutting Theme
CRP	CGIAR Research Program
ICARDA	International Center for Agricultural Research in the Dry Areas
IDO	Intermediate Development Outcome (CGIAR)
MEL	Monitoring, Evaluation, and Learning
NARS	National Agricultural Research System
RA	Research Area (SRPs)
SDG	Sustainable Development Goal
SLO	System-Level Outcome (CGIAR)
SRF	Strategy and Results Framework (CGIAR, 2016-2030)
SRP	Strategic Research Priority
VfM	Value for money

Contents

Introduction

A key component of the overall implementation of the International Center for Agricultural Research in the Dry Areas (ICARDA) Strategic Plan 2017-2026 is the development of a Results Framework that provides the road map for the Center, setting out the core research focus, outputs, and outcomes along with indicators to chart progress. To support the research agenda, ICARDA needs to be a fit-for-purpose organization with clear goals, indicators, and the right resources, both human and financial.

The Center's Results Framework was developed in consultation with staff and a wide range of stakeholders and charts a course for ICARDA through 2026 with clear deliverables with respect to research outputs, developmental outcomes, and impacts on the ground. It also highlights the organizational goals that will be required to support the research effort and the associated indicators.

The document consists of four sections: Section 1 highlights the aspirational targets that we attempt to contribute within the CGIAR framework; Section 2 focuses on ICARDA outcomes nested within the CGIAR Intermediate Development Outcomes (IDOs); Section 3 details the key performance indicators set at the CGIAR level to harmonize the work of the CGIAR centers; and Section 4 presents an example of how ICARDA can track outputs of research efforts to achieve impact at scale in a way that allows the Center to assign attribution to its efforts.

Section 1: Impact and targets
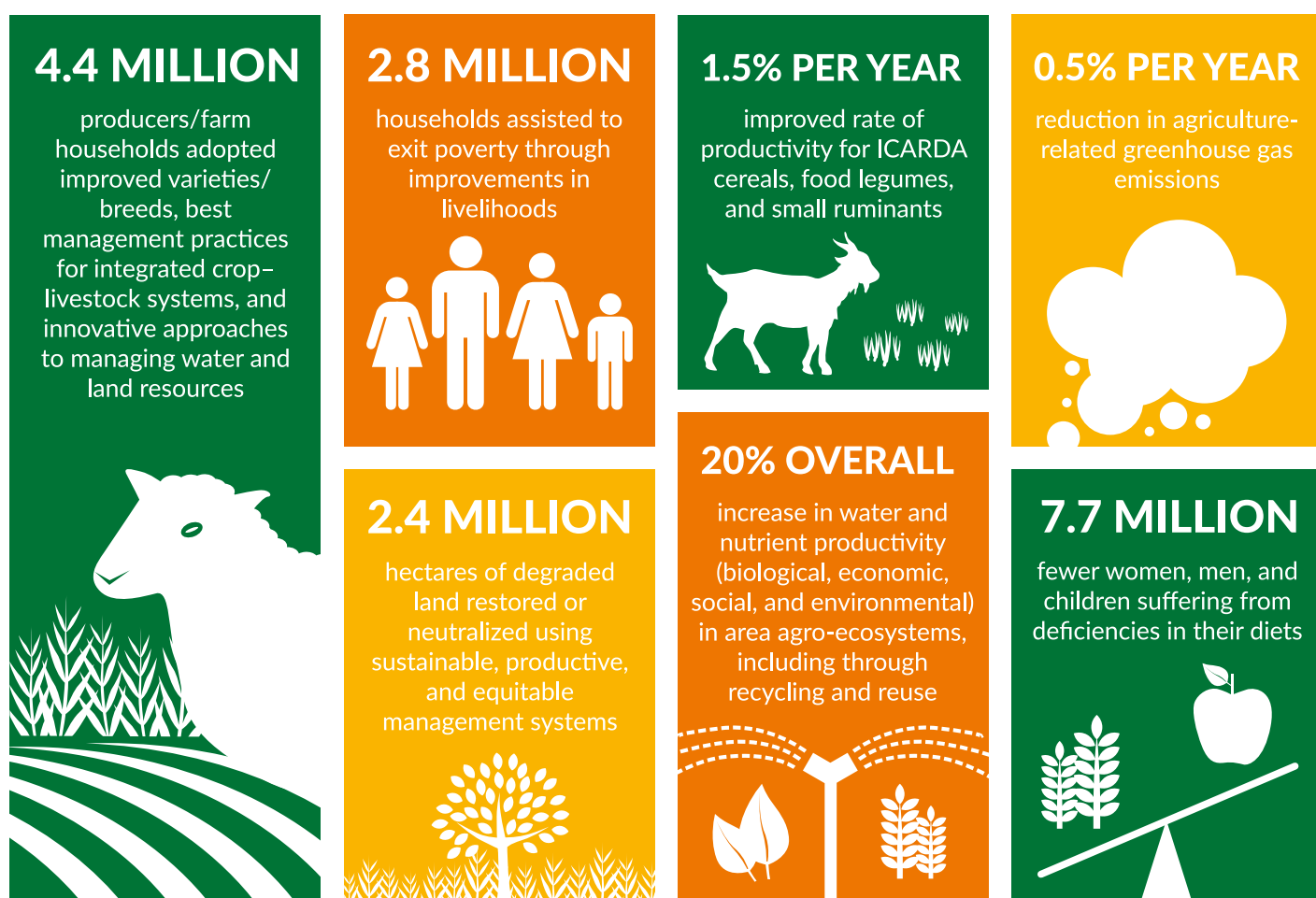
Delivering impact

Achieving our vision of thriving and resilient livelihoods in dry areas will require a transformation in the way we do business. As laid out in the Strategic Plan, we have set ourselves an ambitious research agenda along with organizational reform that is required to deliver impact at scale (Figure 1). We see this being supported by a diverse set of investment instruments that include a long-term strategic research agenda through our engagement in the CGIAR Research Programs (CRPs) and bi/multilateral grants sustained by development agencies, foundations, philanthropic foundations, and individual governments; through capacity development and advisory services provided by in-house units; and through joint investments with the private and public sectors and development agencies that support innovation and impact at scale.

We will broaden our resource mobilization agenda and will maximize organizational efficiency and cost effectiveness. This will include a redesign of our institutional structure to match our overall resource envelope, the delivery of high quality research outputs, communicating our success, and ensuring our financial integrity and accountability at all levels within the Center.

Key to ensuring the financial stability of the Center and the delivery of the Strategic Plan will be to diversify our resource mobilization strategy. This will require

Figure 1: ICARDA's aspirational targets within the CGIAR framework[1]

4.4 MILLION
producers/farm households adopted improved varieties/ breeds, best management practices for integrated crop– livestock systems, and innovative approaches to managing water and land resources

2.8 MILLION
households assisted to exit poverty through improvements in livelihoods

2.4 MILLION
hectares of degraded land restored or neutralized using sustainable, productive, and equitable management systems

1.5% PER YEAR
improved rate of productivity for ICARDA cereals, food legumes, and small ruminants

20% OVERALL
increase in water and nutrient productivity (biological, economic, social, and environmental) in area agro-ecosystems, including through recycling and reuse

0.5% PER YEAR
reduction in agriculture- related greenhouse gas emissions

7.7 MILLION
fewer women, men, and children suffering from deficiencies in their diets

[1] The aspirational targets presented have been revised by the Research Program Directors during Q1/2018. Q2-Q3/2018 will be dedicated to detailing baseline data and fine-tuning the indicators presented in Section 2. ICARDA refers to the CGIAR aspirational targets contributed by all centers within the CGIAR framework.

augmenting the multilateral and bilateral funding that has traditionally provided a significant proportion of the Center's funding to include increasing income streams from the governments we work with, private sector partnerships, philanthropic foundations, and through a fee-for-service model in capacity development and the provision of services.

In achieving the desired impacts, ICARDA will implement a comprehensive results-based management approach that will focus on research-for-development outcomes. We will track our progress towards our goals of poverty reduction, food and water security and improved management of natural resources through robust and defendable internal and external evaluations and impact assessments that will assist us in our learning process in the implementation of the Strategic Plan and provide evidence of our performance to partners, investors, and decision-makers. The Center will continuously promote

innovations, advance science, ensure visibility, and increase knowledge of the research community through findable, accessible, interoperable, and reusable (FAIR)[2] publications and data. We acknowledge that there will be course corrections along the way (Figure 2).

Our ultimate impact extends beyond the individual projects and initiatives we undertake. Our overall objective is to leverage the knowledge and research outputs that we generate through excellence in science to successfully communicate and build strategic partnerships that influence investments by individual male or female farmers, governments, development agencies, and the private sector that exceed our annual expenditures by orders of magnitude. To capture this impact at scale, ICARDA will commission Center-wide thematic external and independent evaluations on a yearly basis in addition to a mid-term review of its Strategic Plan in 2020.

Figure 2: ICARDA's learning cycle
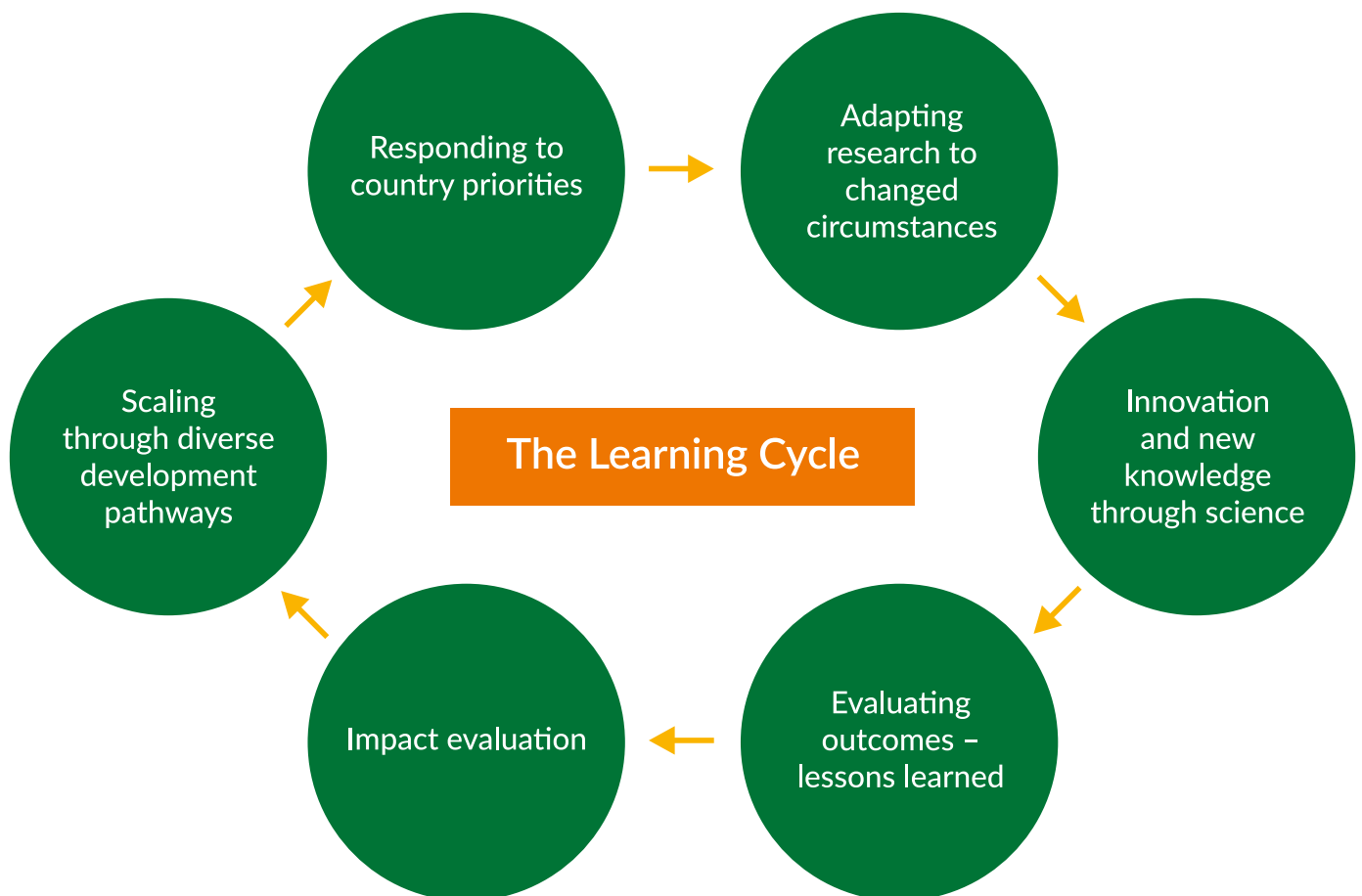
[2] The FAIR Knowledge and Data Principles were drafted at a Lorentz Center workshop in Leiden in the Netherlands in 2015, and have since received worldwide recognition from various organizations as a useful framework for thinking about sharing knowledge and data in a way that will enable maximum use and reuse.

Value for money

Monitoring, evaluation, and impact assessments assist in different ways in describing and measuring outputs, outcomes, and impacts. CGIAR centers, as well as many development agencies and non-governmental organizations, are increasingly being asked to link this type of information with financial data in order to show how the "money" they use – the cost for mobilizing inputs – generates "value" – the contribution of each project and program in achieving long-term goals.

These value for money (VfM) frameworks are closely linked with our theory of change and impact pathways (Figure 3).[3] According to the UK Department for International Development, one of the biggest proponents of the approach, VfM "is about maximising the impact of each pound spent to improve poor people's lives."[4]

The analytical VfM framework is commonly characterized by three main criteria, also known as the three "Es":

Economy:	The cost of inputs used for an activity, with regard to maintaining quality.
Efficiency:	The extent to which an intervention converted input into outputs by increasing output for a given input, or minimizing input for a given output, with a regard for maintaining quality.
Effectiveness:	The extent to which expected outcomes are achieved through the outputs obtained from an intervention.

Recently a fourth "E" has been added to the framework, particularly when it is applied to development initiatives:

Equity:	The extent to which development outcomes have included the poorest, have reached the most vulnerable and have been gender-sensitive and youth oriented.[6]

This Results Framework will be complemented with a VfM framework that will be progressively developed and applied to maximize each of the four Es in order to support improved decision-making processes and maximize the cost effectiveness of each intervention.

Figure 3: Value for money framework[5]

---
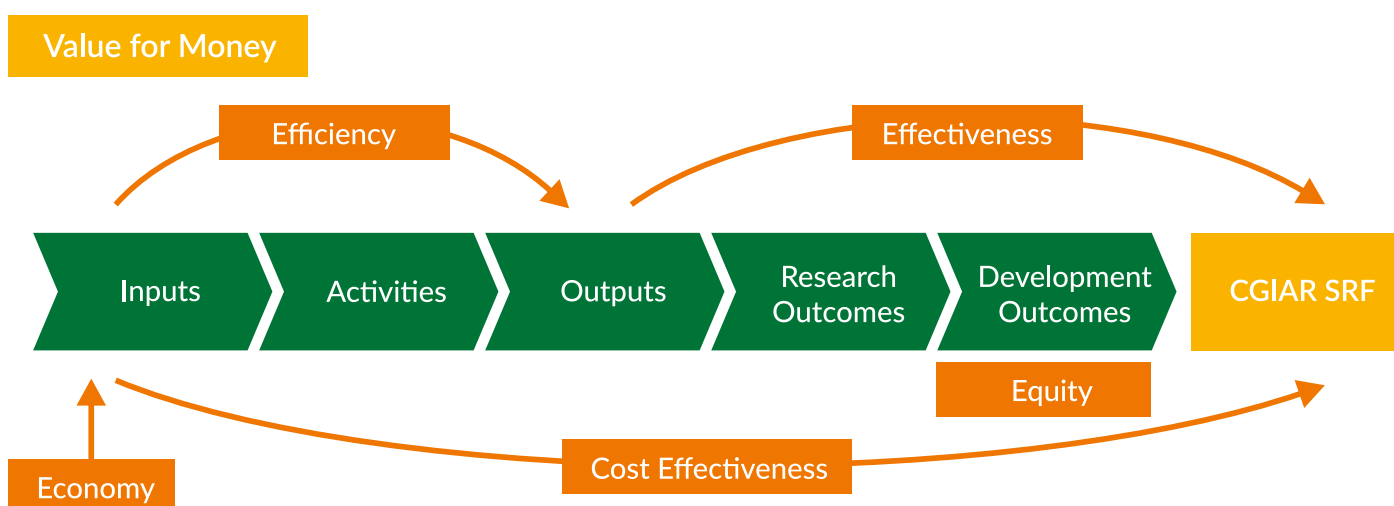
[3] Antinoja, E. et al. 2011. Value for Money: Current Approaches and Evolving Debates. London School of Economics.

[4] Department for International Development 2011. DFID's Approach to Value for Money.

[5] Adapted from Department for International Development 2011.

[6] Adapted from Department for International Development 2011 and Jackson, P. 2012. Value for Money and International Development: Deconstructing Myths to Promote a More Constructive Discussion. Organisation for Economic Co-operation and Development.

It is important to note that not all the interventions implemented by different programs and organizations have the same characteristics; however, they can be broadly grouped into three main categories of interventions:

1. Upstream/basic research
2. Research in development
3. Scaling up and impact-oriented actions

The four Es of VfM will have different degrees of relevance depending on these categories of intervention. VfM analysis in basic research will focus on Economy and Efficiency, while for research in development interventions it is important to develop indicators for all four criteria. For the last category of interventions, Effectiveness and Equity are probably the most important criteria to examine.

Section 2: ICARDA's targeted outcomes

ICARDA's Results Framework is aligned with the CGIAR System-Level Outcomes (SLOs) which in turn are related to the Sustainable Development Goals (SDGs). ICARDA will contribute, together with all other development players, to the SDGs and will sustain national governments in their accountability to meet the goals by 2030. However, as in the CGIAR Strategy and Results Framework (SRF), we have not embedded SDG indicators. Rather, we have focused on defining a set of credible indicators that can be clearly linked to ICARDA's efforts at field level and sustained by evidence. These indicators should be calculated for each project in order to allow for an aggregation of the impact at the center level, and for some at the CGIAR level. This means using simple indicators that can be aggregated from easy-to-access data. Such data may come from direct collection from ICARDA projects or national partners, including statistical departments.

Yield, nutrition, and youth employment are provided as examples of such types of indicators. In 2019, we will test a limited list of SDG indicators which may require specific impact assessment studies. SDG indicators will be referred to in terms of contribution within joint national and international efforts.

ICARDA targets six key IDOs through its five Strategic Research Priorities (SRPs). Few IDOs are exclusively related to one SRP. The majority of IDOs are targeted by multiple Research Areas (RAs) across our SRPs and Cross-Cutting Themes (CCTs) (Figure 4). At the lower level, the SRPs define 34 key research and development outcomes addressed by different RAs. This version of the Results Framework does not present all the outputs and deliverable levels that will be used by the Senior Management Team to implement results-based management.

Figure 4: ICARDA's targeted CGIAR SLOs (brown), IDOs (orange), and cross-cutting outcomes at the IDO level (blue)
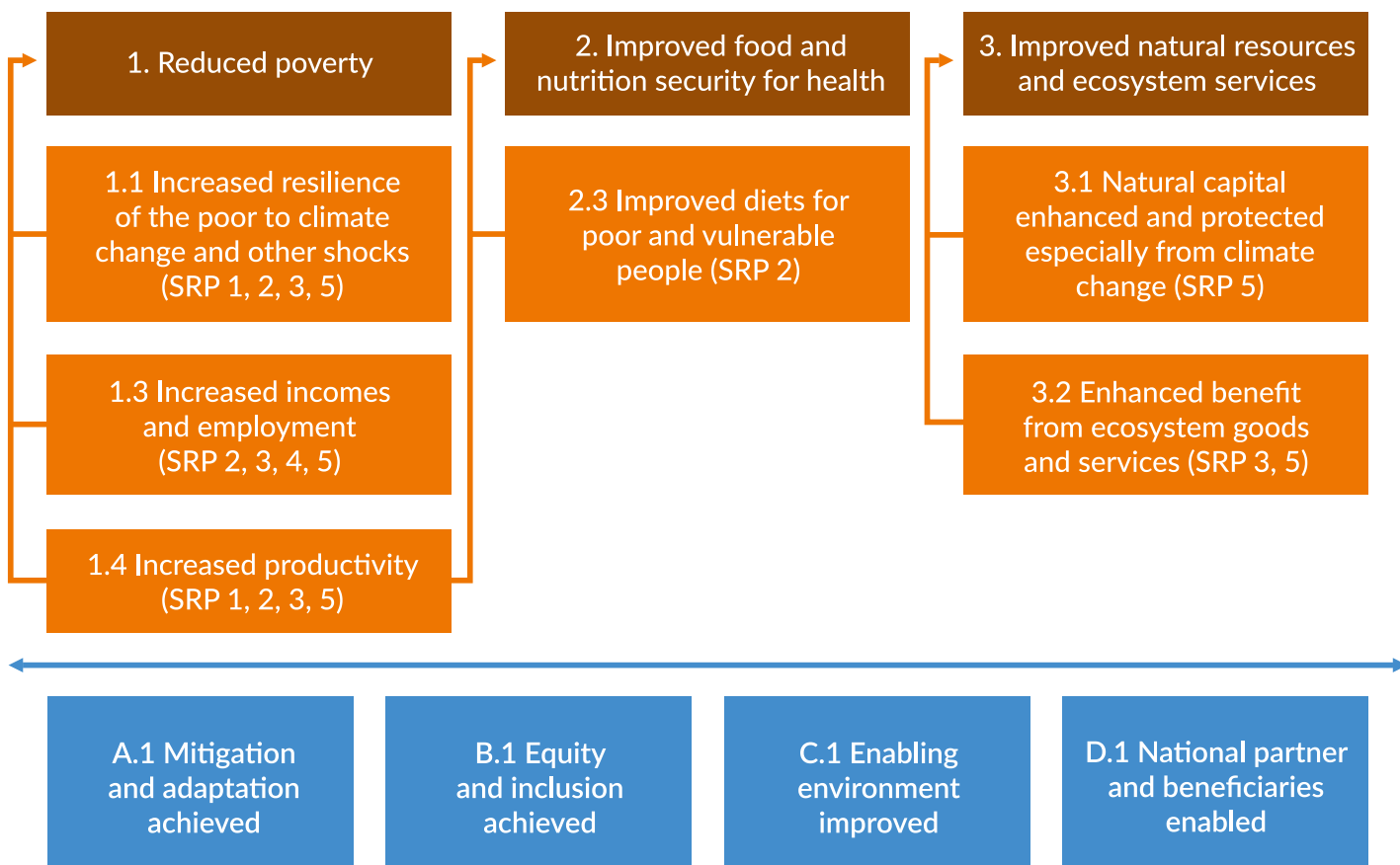
SLO 1: Reduced poverty

ICARDA mainly targets SLO 1, reduced poverty, and focuses its effort on three IDOs and cross-cutting outcomes (Figures 5 and 6).

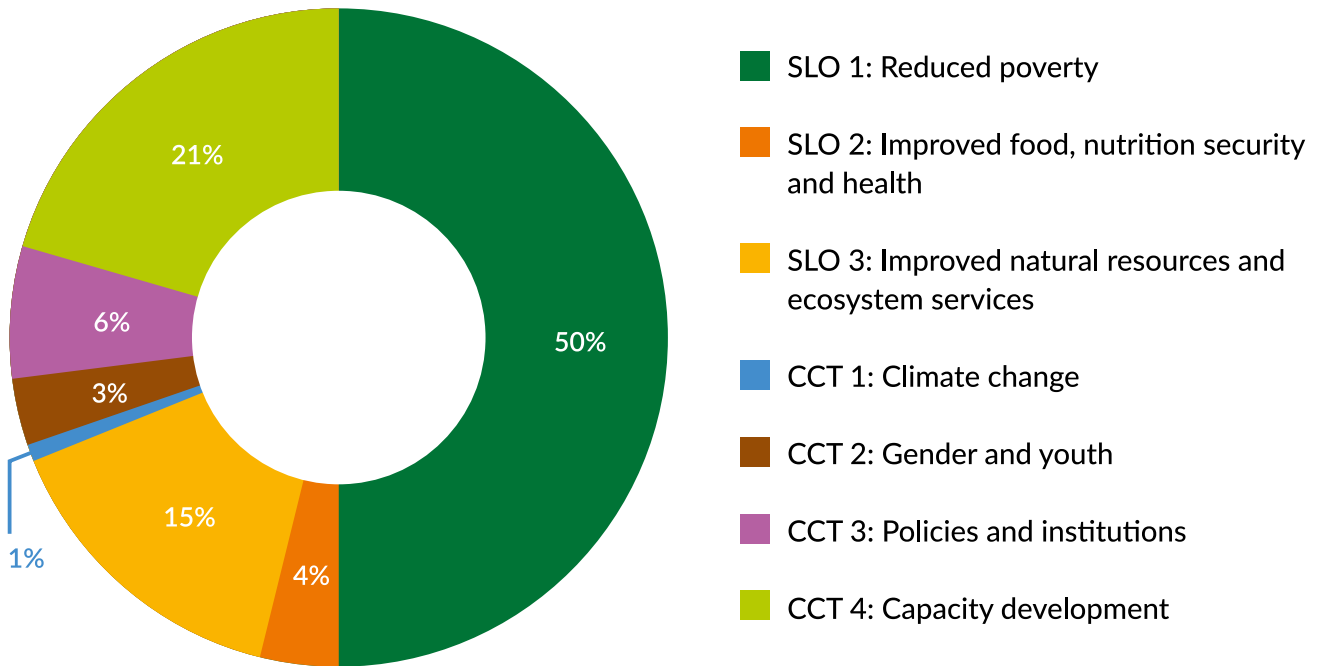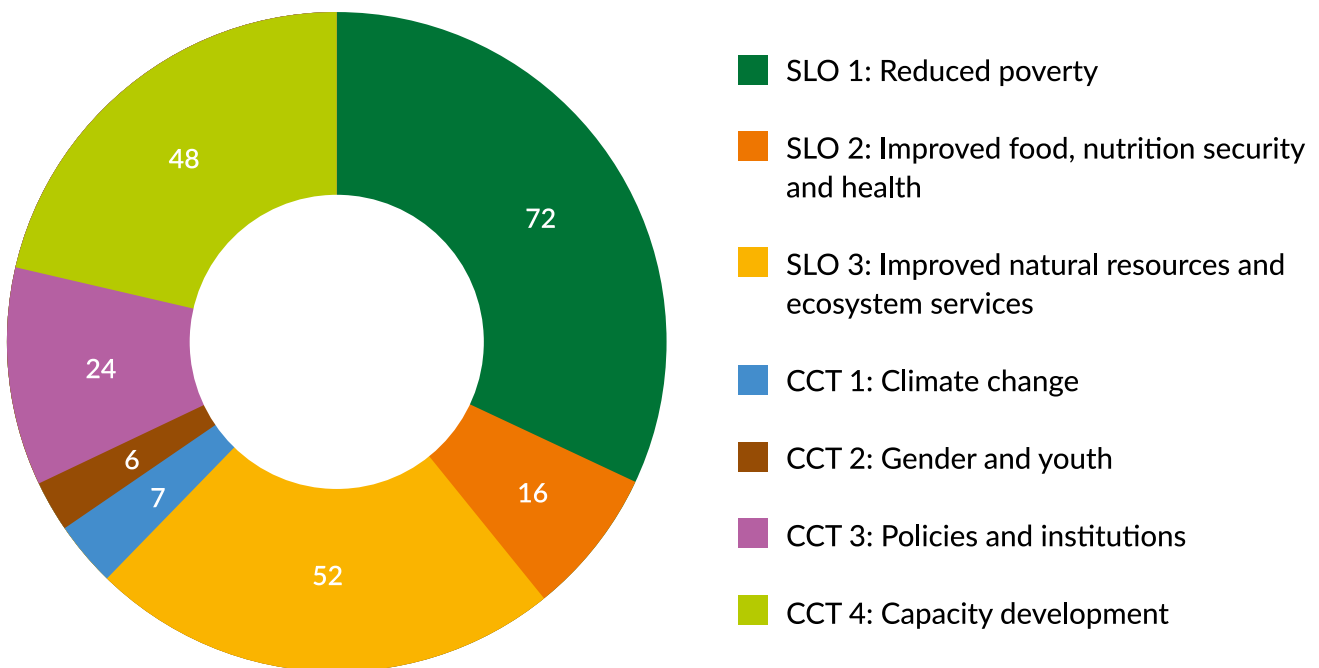**Figure 5: ICARDA's resources targeting CGIAR SLOs and CCTs (MEL Analytics, 2017)**

Figure 6: ICARDA's research publications, including journal articles, datasets and grey literature,[7] by CGIAR SLOs and CCTs (MEL Analytics, 2016)
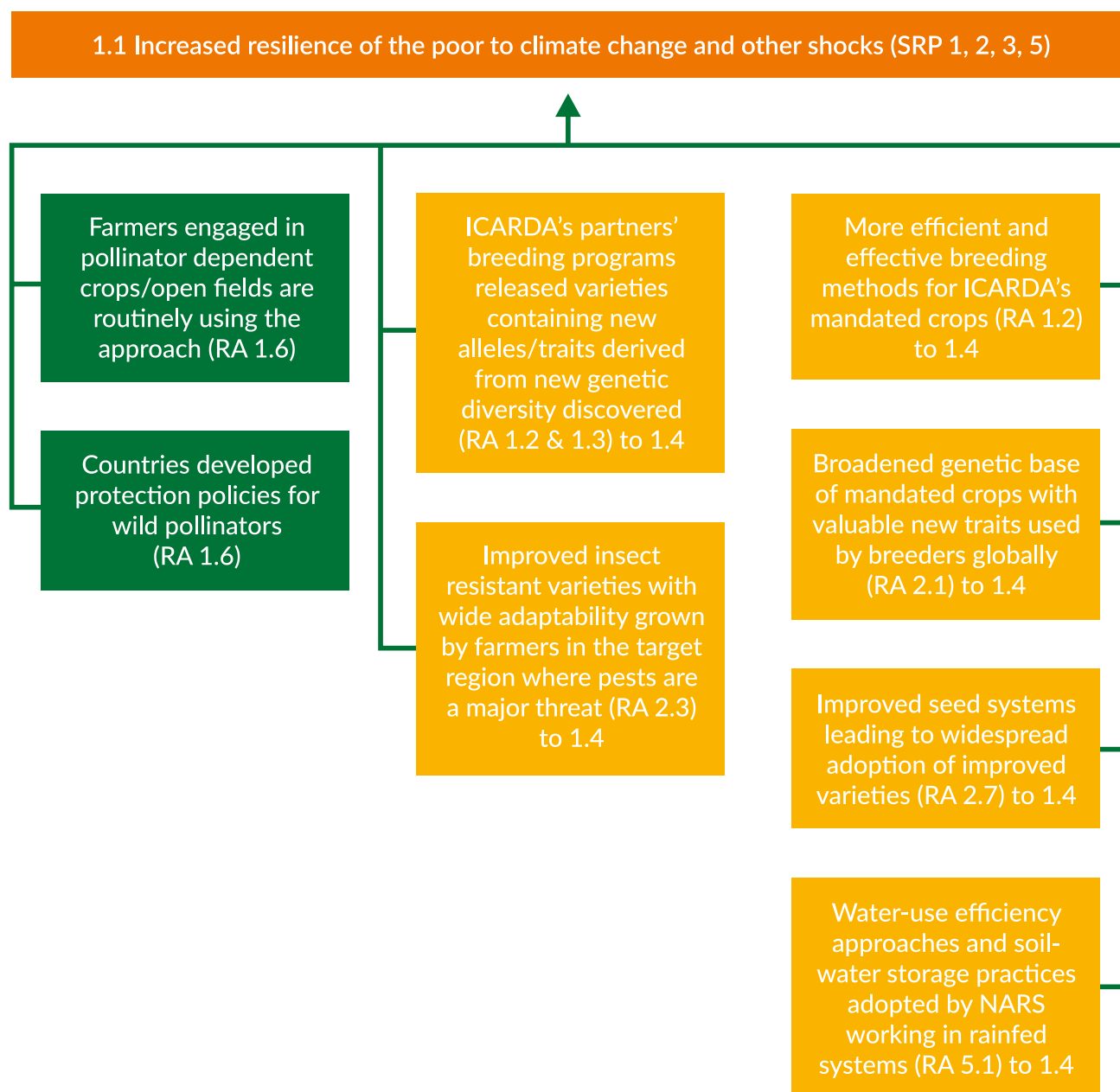

[7] University of Leeds Library. Resource Guides: Grey Literature. https://library.leeds.ac.uk/info/1110/resource_guides/7/grey_literature.

IDO 1.1: Increased resilience of the poor to climate change and other shocks

Fifteen key outcomes from four SRPs contribute to IDO 1.1. As presented in Figure 7, the majority of the outcomes targeting IDO 1.1 are contributing to other IDOs (highlighted in yellow) and only two outcomes are specifically targeting this IDO.[8] Key outcomes are related to genetic diversity, resistance and adaptation of released varieties, efficiency in breeding, improvement of seed systems, and increased soil-water storage capacity.

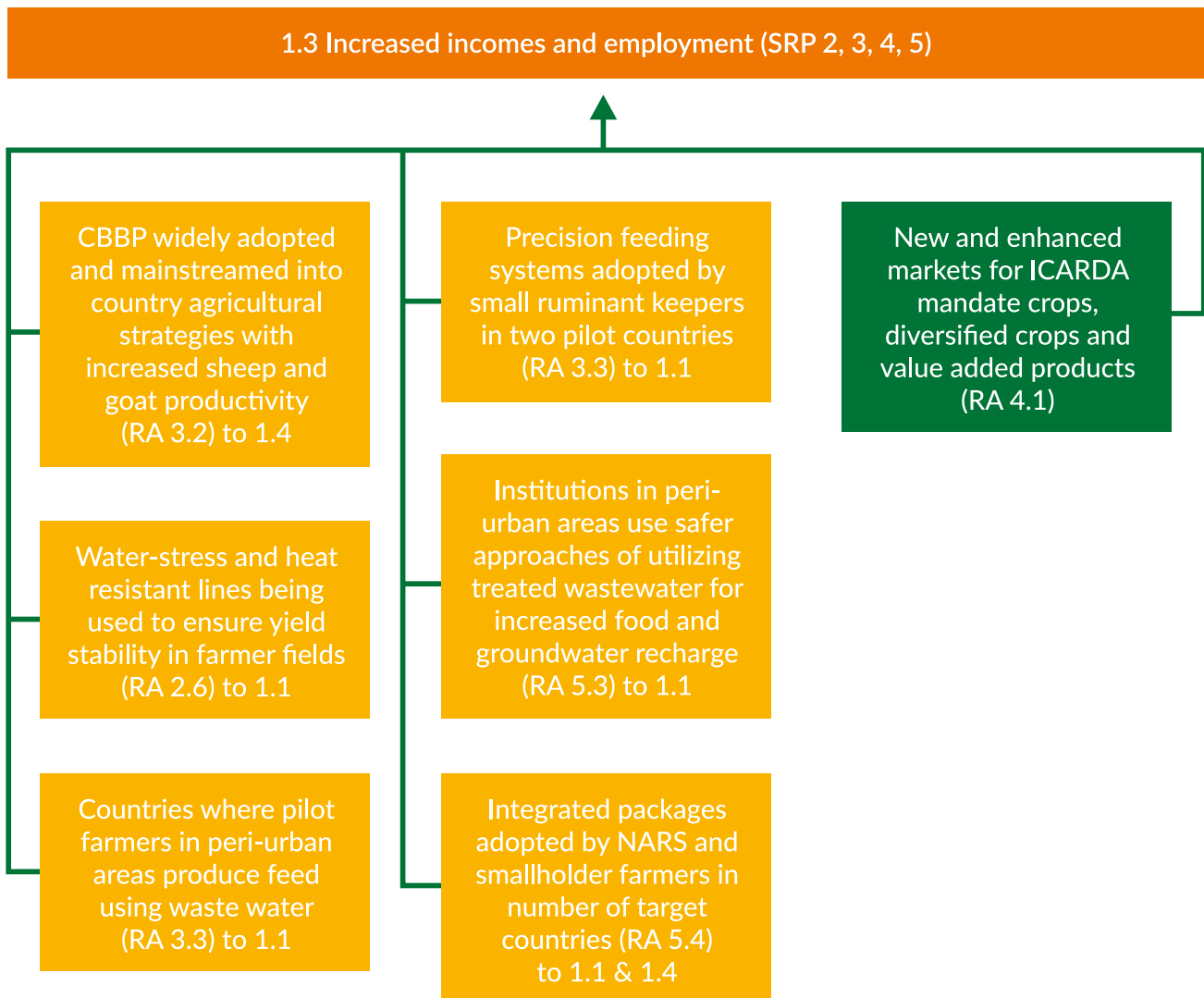**Figure 7: ICARDA's contribution to IDO 1.1**

1.1 Increased resilience of the poor to climate change and other shocks (SRP 1, 2, 3, 5)

Farmers engaged in pollinator dependent crops/open fields are routinely using the approach (RA 1.6)

Countries developed protection policies for wild pollinators (RA 1.6)

ICARDA's partners' breeding programs released varieties containing new alleles/traits derived from new genetic diversity discovered (RA 1.2 & 1.3) to 1.4

Improved insect resistant varieties with wide adaptability grown by farmers in the target region where pests are a major threat (RA 2.3) to 1.4

More efficient and effective breeding methods for ICARDA's mandated crops (RA 1.2) to 1.4

Broadened genetic base of mandated crops with valuable new traits used by breeders globally (RA 2.1) to 1.4

Improved seed systems leading to widespread adoption of improved varieties (RA 2.7) to 1.4

Water-use efficiency approaches and soil-water storage practices adopted by NARS working in rainfed systems (RA 5.1) to 1.4

---

[8] Each IDO chart presents ICARDA outcomes in boxes with the RAs in brackets. In case the outcome contributes to other IDOs, these are reported and the box is highlighted in yellow. The number of outcomes represented in each figure may be less than the total number contributing to the IDO since the difference is represented under other IDOs and related figures.

IDO 1.3: Increased incomes and employment

Eight key outcomes from four SRPs contribute to IDO 1.3. As presented in Figure 8, the majority of the outcomes targeting 1.3 are contributing to other IDOs (highlighted in yellow) and only one outcome is specifically targeting this IDO. Key outcomes are related to the adoption of ICARDA's improved varieties and/or developed farming/feeding practices, and improved market conditions.

Figure 8: ICARDA's contribution to IDO 1.3

1.3 Increased incomes and employment (SRP 2, 3, 4, 5)

CBBP widely adopted and mainstreamed into country agricultural strategies with increased sheep and goat productivity (RA 3.2) to 1.4

Water-stress and heat resistant lines being used to ensure yield stability in farmer fields (RA 2.6) to 1.1

Countries where pilot farmers in peri-urban areas produce feed using waste water (RA 3.3) to 1.1

Precision feeding systems adopted by small ruminant keepers in two pilot countries (RA 3.3) to 1.1

Institutions in peri-urban areas use safer approaches of utilizing treated wastewater for increased food and groundwater recharge (RA 5.3) to 1.1

Integrated packages adopted by NARS and smallholder farmers in number of target countries (RA 5.4) to 1.1 & 1.4

New and enhanced markets for ICARDA mandate crops, diversified crops and value added products (RA 4.1)

IDO 1.4: Increased productivity

Twenty-two key outcomes from four SRPs contribute to IDO 1.4. Figure 9 presents the eight outcomes specific to this IDO. Key outcomes are related to improving knowledge and use of ICARDA genetic diversity (crops and small ruminants), country level adoption of genetic material, and related national plans promoted by the Center.

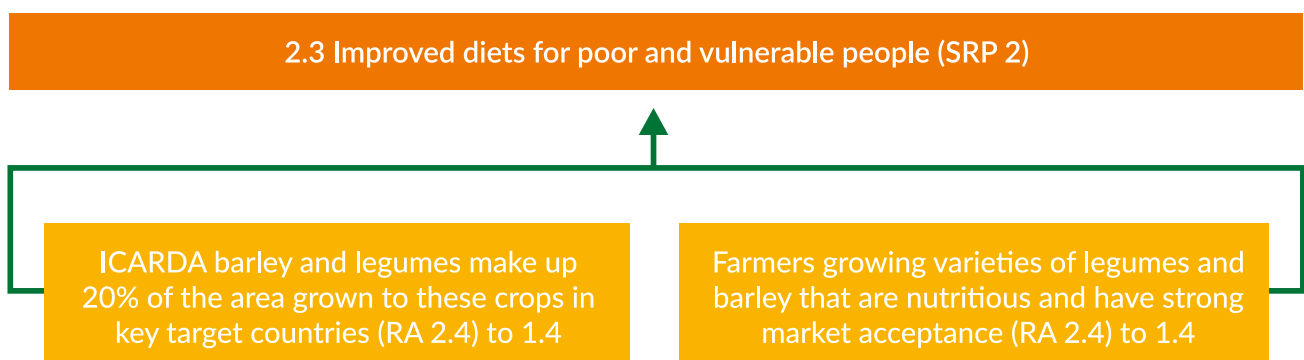**Figure 9: ICARDA's contribution to IDO 1.4**
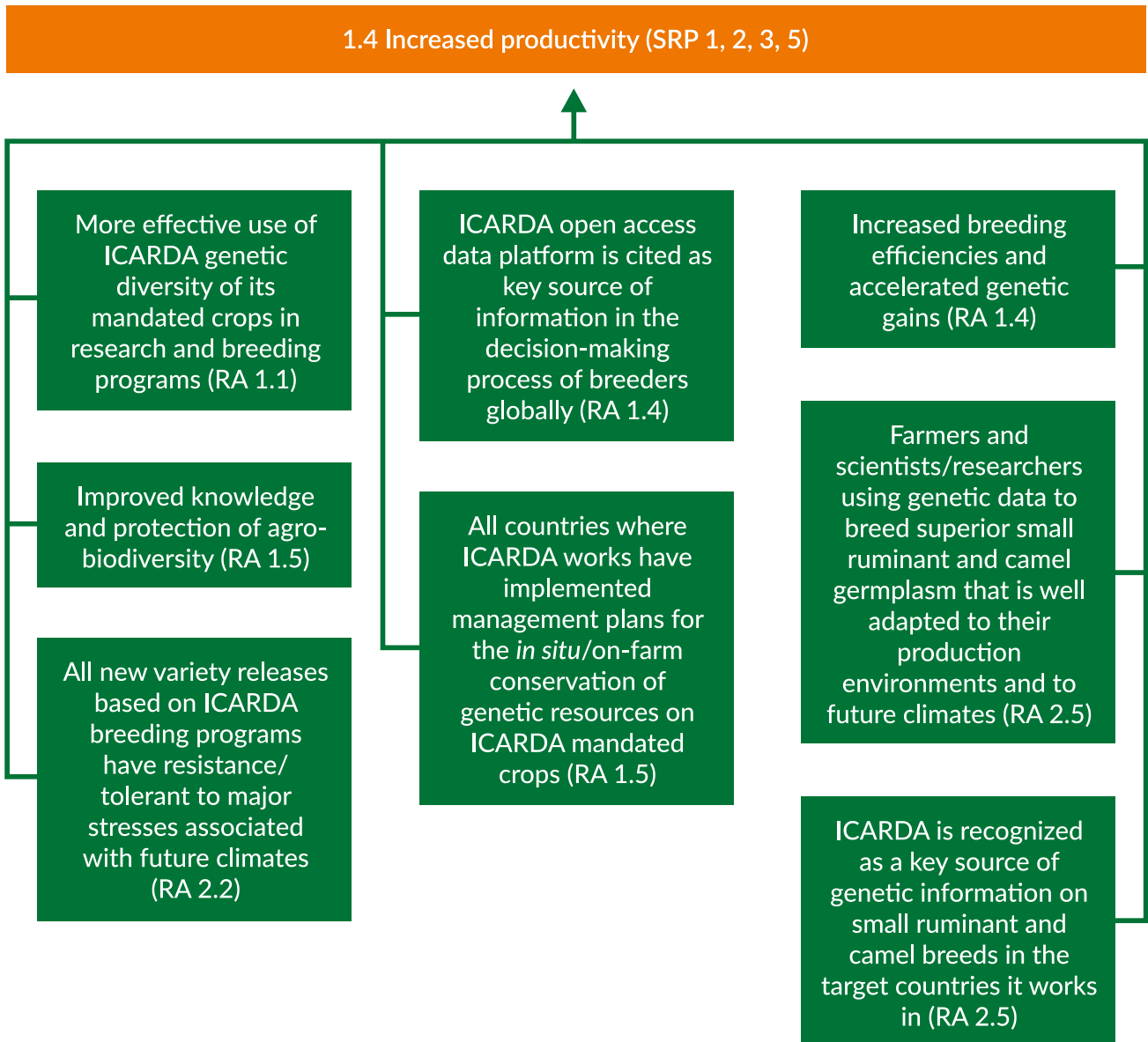
SLO 2: Improved food and nutrition security for health

ICARDA's SRP 2 targets the food and nutrition security for health SLO mainly through IDO 2.3 on improved diets for the poor. IDO 2.3 is achieved through shared outcomes with IDO 1.4 on improved productivity. As shown above in Figures 5 and 6, the Center is not heavily exposed to this IDO in terms of funding investments and research publications. Outcomes are more related to achieving an increase in the areas cultivated by food legumes and barley, and adoption of improved food legumes and barley varieties of higher nutritional value (Figure 10).

IDO 2.3: Improved diets for poor and vulnerable people

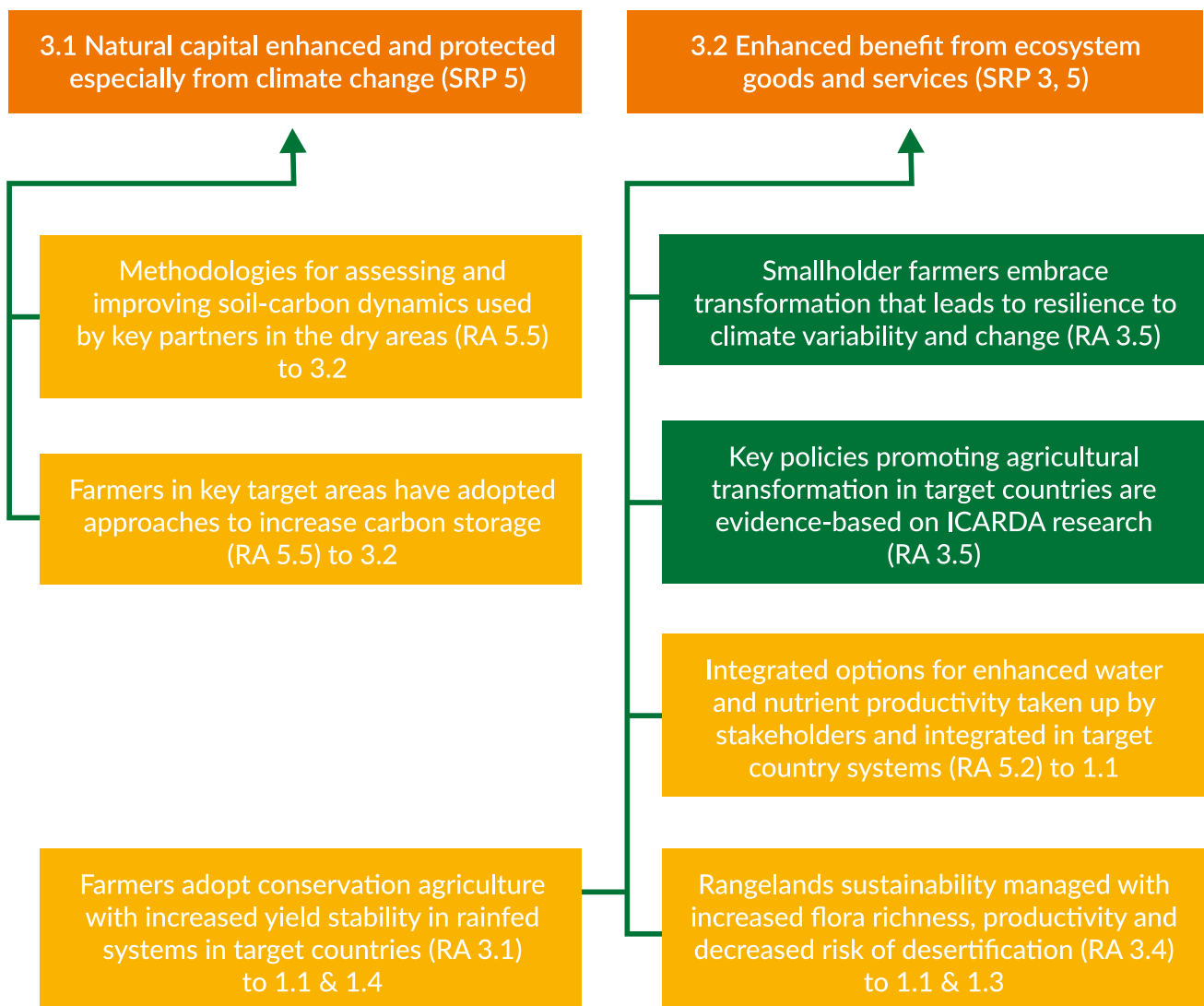**Figure 10: ICARDA's contribution to IDO 2.3**

2.3 Improved diets for poor and vulnerable people (SRP 2)

ICARDA barley and legumes make up 20% of the area grown to these crops in key target countries (RA 2.4) to 1.4	Farmers growing varieties of legumes and barley that are nutritious and have strong market acceptance (RA 2.4) to 1.4

SLO 3: Improved natural resources and ecosystem services

ICARDA's SRP 3 and SRP 5 target the natural resources and ecosystem services SLO mainly through IDO 3.1 on enhancing natural capital and IDO 3.2 on benefits from ecosystem goods and services. SLO 3 shares outcomes with SLO 1, but also draws specific ones from RAs 3.6 and 5.5. ICARDA's outcomes are mainly related to adoption of tools and practices and influence at the policy level (Figure 11).

IDO 3.1: Natural capital enhanced and protected especially from climate change
IDO 3.2: Enhanced benefit from ecosystem goods and services

Figure 11: ICARDA's contribution to IDOs 3.1 and 3.2

3.1 Natural capital enhanced and protected especially from climate change (SRP 5)

3.2 Enhanced benefit from ecosystem goods and services (SRP 3, 5)

Methodologies for assessing and improving soil-carbon dynamics used by key partners in the dry areas (RA 5.5) to 3.2

Smallholder farmers embrace transformation that leads to resilience to climate variability and change (RA 3.5)

Farmers in key target areas have adopted approaches to increase carbon storage (RA 5.5) to 3.2

Key policies promoting agricultural transformation in target countries are evidence-based on ICARDA research (RA 3.5)

Integrated options for enhanced water and nutrient productivity taken up by stakeholders and integrated in target country systems (RA 5.2) to 1.1

Farmers adopt conservation agriculture with increased yield stability in rainfed systems in target countries (RA 3.1) to 1.1 & 1.4

Rangelands sustainability managed with increased flora richness, productivity and decreased risk of desertification (RA 3.4) to 1.1 & 1.3

Section 3: Key performance indicators

Principles

In 2017, the ICARDA Monitoring, Evaluation, and Learning (MEL) team designed and delivered a standardized and harmonized set of indicators for the CGIAR within the framework of the CGIAR MEL Community of Practice. This effort targeted the CGIAR funders' need for a robust, relevant, and coherent set of metrics to share the results achieved by their investments. The System Council approved these indicators in November 2017.[9]

The development of the indicators followed six key principles:

1. Aggregatable indicators addressing the diversity of outputs in the CGIAR and within Centers (e.g. "people benefiting" rather than "varieties released").

2. Indicators able to demonstrate progress in the spheres of control, influence, and interest.

3. Indicators able to represent ongoing and projected results and to complement adoption and impact data collected on past research.

4. Limited numbers of indicators since reporting has a high cost.

5. Availability of credible, robust evidence-based data.

6. Feasibility to report indicators through automated Management Information Systems (MIS) able to provide (dis)aggregation of areas of interest.

The indicators are defined with a set of disaggregates allowing useful sub-sets of information such as on Gender, Location, and Donor.

It is expected that after one year of testing, and with the support of all stakeholders, the MEL team will define an ICARDA Indicators Dashboard to visualize progress towards achieving targets.

The indicators are based on a set of international standards and pre-existing classification schemes to facilitate interoperability with other systems.[10]

Reporting on these indicators will take place annually along with the CRP annual reporting cycle, since ICARDA maps more than 80% of its portfolio to CRPs.

Indicators

The indicators in Table 1 are organized within two spheres: Influence (research outcomes) and Control (outputs/activities).

---

[9] CGIAR 2017. CGIAR System-Level Results Reporting: Progress and Plans. https://www.cgiar.org/wp-content/uploads/2017/10/SC5-05_ResultsReporting-1.pdf.
  In addition to the initial set of indicators, the System Council requested an additional indicator on partnerships.
[10] The MEL Platform is interoperable with 15 external systems and international standards. This ensures the compatibility of our data with that of several other stakeholders.

Table 1: CGIAR/ICARDA reporting indicators

SPHERE	CODE	INDICATOR	DATA SOURCE	PROPOSED REPORTING RESPONSIBILITIES (DATA COLLECTION AND ENTRY MAY BE DELEGATED)
Influence (research outcomes)	I1/2	Projected uptake (women and men/hectares) from current ICARDA investments		Socio-Economics Team together with Impact Reporting Function
	I3	Number of policies, legal instruments or investments modified in design or implementation, informed by ICARDA research	Self-reported, with evidence	Project (Agreement) Leaders
Control (outputs/ activities)	C1	Number of innovations by stage	Self-reported, with evidence	Activity (Basic Unit of Science) Leaders
	C2	Number of partnerships	Self-reported, with evidence	Activity (Basic Unit of Science) Leaders
	C3	Number of direct participants in ICARDA activities	Self-reported, with evidence	Activity (Basic Unit of Science) Leaders
	C4	Number of people trained	Self-reported, with evidence	This indicator is reported separately to funders, but does not have a separate guidance sheet: it is a subset of C3 so it is covered by that guidance sheet
	C5	Number of ICARDA research papers published in peer-reviewed journals and cited	Institutional repositories	Staff (internationally and nationally recruited staff, consultants); Activity (Basic Unit of Science) Leaders for publications delivered by partners within Memoranda of Agreement
	C6	Altmetric (alternative metrics) score for ICARDA publications	Altmetrics	Not planned for 2018

Section 4: Tracking our impact

The approach that ICARDA will use to track impact is based on the International Institute of Tropical Agriculture's (IITA) Monitoring and Evaluation (M&E) system. The approach will be embedded within all ICARDA projects to ensure uniformity and robustness and will be defendable, forming an integral part of the results-based management approach that will be implemented across the Center. Embedding ICARDA indicators in each project will facilitate efforts to aggregate all outputs, outcomes, and impact data to demonstrate the collective results of ICARDA.

This approach provides a uniform framework for selecting indicators to measure results at the level of the Center and serves as a means to harmonize data collection and methodologies. It is anticipated that this approach will support proposal development and provide proponents with the means to select indicators that best suit their requirements and support attribution and contributions to poverty reduction, improved food and nutritional security, and improved natural resource management in a systematic manner.

Below is an example of how to capture and quantify progress towards meeting our targets. The starting point is the long-term (2026) impact that we seek to achieve with respect to the yield gains of ICARDA's mandated crops, which is a target of a 1.5% rate of yield increase annually for these crops at local, national, and regional levels. The approach moves down progressively to different levels that represent the scaling-out process, with research outputs at the lowest level. Projects and initiatives occur at different stages along this continuum with decisions made to determine the indicators best appropriate to fit the project's or initiative's purpose. The indicators and data that need to be collected should only be seen as guidelines and are not prescriptive.

How to measure impact: the example of yield

Core to ICARDA's work is the production of a diverse range of technological innovations. These include, but are not limited to, new higher-yielding varieties of our mandated crops and small ruminants that are resistant to biotic and abiotic stress (through the introgression of desirable traits that make them climate-resilient, for example); improved and/or innovative approaches to the management of crops and livestock that have direct implications on yield or enhanced performance (of livestock, for example); and community-based approaches that improve crops and livestock and build resilience into production enterprises.

Long-term impact (2026)

RESULT STATEMENT:
Increased yields in targeted regions of ICARDA's mandated crops by 1.5% annually

LINKS TO CGIAR SRF: SLOs 1 AND 2:
- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:
Percentage change in yield of mandated food crops of ICARDA in the regions that it operates in

INDICATOR KEYWORDS DEFINITION:
- *Mandated food crops* refers to barley, chickpea, faba bean, grass pea, lentil, and wheat
- *Regions* refers to the specific locations where ICARDA is undertaking interventions
- *Yield* refers to the economic yield (yield harvested either for consumption or for sale)

DATA NEEDED:
- Baseline yield at the point of intervention (BY)
- Yield at the end of project/program or at 2022 (EY)

DISAGGREGATION:
Target site, mandated crop

SUGGESTED SOURCE(S):
Respondents during the baseline survey, FAO or other statistics, and respondents during the endline survey or at 2022

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
A comprehensive survey of the target region

DATA ANALYSIS PROCEDURE(S):
The percentage of male and female farmers adopting is calculated as follows:

$$([EY - BY]/BY) \times 100$$

NB: Weight will be added based on land areas, then results will be aggregated

JUSTIFICATION AND MANAGEMENT UTILITY:
By quantifying the percentage change in yield one will be in a position to understand the status of the project or program and allow for modifications with respect to implementation strategies

Development outcomes
Development outcome: Male and female farmers adopting proven production technologies

RESULT STATEMENT:
Male and female farmers adopt proven ICARDA innovations (production technologies and management practices)

LINKS TO CGIAR SRF: SLOs 1 AND 2:
- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:
Percentage of male and female farmers adopting proven production technologies

INDICATOR KEYWORDS DEFINITION:
- *Adopting* means stakeholders are using proven technologies or practices after technical performance is guaranteed at field scale
- *Demonstration* refers to on-farm demos, in which beneficiaries may or may not receive direct inputs from the project to use on their own farms
- *Region* refers to specific locations where ICARDA intervenes or works
- *Proven* means improved and validated with male and female farmers

DATA NEEDED:
- Total number of male and female farmers using the production technologies (T_{user})
- Total number of male and female farmers engaged with program/project ($T_{engaged}$)

DISAGGREGATION:
Actor type (male/female farmer/processor/marketer/retailer), scale of technology (industrial/household), crop, region, type of production technology

SUGGESTED SOURCE(S):
Project reports or survey respondents

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data annually via survey

DATA ANALYSIS PROCEDURE(S):
The percentage of male and female farmers adopting is calculated as follows:

$$(T_{user}/T_{engaged}) \times 100$$

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator gives an impression of the extent to which male and female farmers are patronizing or using the production technologies. It will enable one to decide on how to reach other male and female farmers that are yet to utilize the production technologies

Development outcome: Value chain actors adopting proven production technologies

RESULT STATEMENT:

Male and female farmers adopt proven ICARDA innovations (production technologies, and management practices)

LINKS TO CGIAR SRF: SLOs 1 AND 2:

- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:

Percentage of value chain actors adopting proven production technologies

INDICATOR KEYWORDS DEFINITION:

- *Adopting* means stakeholders are using proven technologies or practices after technical performance is guaranteed at field scale
- *Demonstration* refers to on-farm demos, in which beneficiaries may or may not receive direct inputs from the project to use on their own farms
- *Regions* refers to specific locations where ICARDA intervenes or works
- *Proven* means improved and validated with male and female farmers
- *Value chain actors* refer to processors, marketers, and retailers

DATA NEEDED:

- Total number of value chain actors using production technology (T_{user})
- Total number of value chain actors engaged with program or project ($T_{engaged}$)

DISAGGREGATION:

Actor type (male/female farmer/processor/marketer/retailer), scale of technology (industrial/household), crop, region, type of production technology

SUGGESTED SOURCE(S):

Project reports or survey respondents

SUGGESTED DATA COLLECTION METHODOLOGY(IES):

Project team will collect data annually via survey

DATA ANALYSIS PROCEDURE(S):

The percentage of value chain actors adopting is calculated as follows:

$$(T_{user}/T_{engaged}) \times 100$$

JUSTIFICATION AND MANAGEMENT UTILITY:

The indicator gives an impression of the extent to which value chain actors are patronizing or using the production technologies. It will enable one to decide on how to reach other value chain actors that are yet to utilize the production technologies

Development outcome: Production technologies adopted

RESULT STATEMENT:
Male and female farmers adopt proven ICARDA innovations (production technologies and management practices)

LINKS TO CGIAR SRF: SLOs 1 AND 2:
- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:
Percentage proven production technologies adopted

INDICATOR KEYWORDS DEFINITION:
- *Adopting* means stakeholders are using proven technologies or practices after technical performance is guaranteed at field scale
- *Demonstration* refers to on-farm demos, in which beneficiaries may or may not receive direct inputs from the project to use on their own farms
- *Region* refers to specific locations where ICARDA intervenes or works
- *Proven* means improved and validated with male and female farmers

DATA NEEDED:
- Total number of proven technologies made available by ICARDA ($T_{available}$)
- Total number of proven technologies adopted ($T_{adopted}$)

DISAGGREGATION:
Actor type (male/female farmer/processor/marketer/retailer), scale of technology (industrial/household), crop, region, type of production technology

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data annually via survey

DATA ANALYSIS PROCEDURE(S):
The percentage of technologies that are adopted is calculated as follows:

$$(T_{adopted}/T_{available}) \times 100$$

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator gives an impression of the extent to which proven ICARDA technologies are adopted. It will enable one to decide on how more proven ICARDA technologies could be adopted

Development outcome: Household and individual diet diversified

RESULT STATEMENT:
Improved diets for poor and vulnerable people

LINKS TO CGIAR SRF: SLO 2:
- 2.1.1 Increased availability of diverse nutrient-rich foods
- 2.1.2 Increased access to diverse nutrient-rich foods
- 2.1.3 Optimized consumption of diverse nutrient rich foods

INDICATOR STATEMENT:
Individual Diet Diversity Score (IDDS) and Household Dietary Diversity Score (HDDS)

INDICATOR KEYWORDS DEFINITION:
- *Dietary diversity* is a qualitative measure of food consumption that reflects household access to a variety of foods and is also a proxy for nutrient adequacy of the diet of individuals (FAO)
- *Nutrient-rich foods* means the quality of nutrient content (e.g. proteins, vitamins, etc.) of the available edible material
- *Regions* refers to the specific locations where ICARDA is undertaking interventions

DATA NEEDED:
Households/individuals and their food intake composition by meal

DISAGGREGATION:
Type of technologies, crop, gender, age, scale (individual and household) target regions

SUGGESTED SOURCE(S):
Project reports or survey respondents

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data as needed through field interviews and activity reports

DATA ANALYSIS PROCEDURE(S):
The indicator is calculated by summing up all the households/individuals and grouping responses by food groups organizing them in terciles (low, medium, and high) for dietary diversity. Data is also presented by suggested disaggregation methods

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator allows the analysis of access to food (baseline) or estimates the impact of a project in terms of improved benefits related to technology adoption and the impact of this in people's dietary needs. It will enable decision-making on how to reach other households that are yet to utilize production technologies

Development outcome: Full and productive employment for men and women achieved

RESULT STATEMENT:
Increased incomes and employment

LINKS TO CGIAR SRF: SLO 1:
- 1.3.1 Diversified enterprise opportunities
- 1.3.2 Increased livelihood opportunities

INDICATOR STATEMENT:
Unemployment rate, by sex, age and persons with disabilities (SDG 8.5.2)

INDICATOR KEYWORDS DEFINITION:
- *Population* corresponds to all women and men, including young people and persons with disabilities
- *Productive* means employment yielding sufficient returns to labor to permit the worker a level of consumption above the poverty line (ILO)
- *Employment* means a decent work[11] with equal pay for work of equal value
- *Unemployed* refers to those persons without a job, available and willing (active) to work
- *Regions* refers to the specific locations where ICARDA is undertaking interventions

DATA NEEDED:
Total number of individuals unemployed

DISAGGREGATION:
Beneficiaries, gender, age, target regions

SUGGESTED SOURCE(S):
Survey respondents and/or offices of national statistics

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data annually via surveys referring to ILO standards (Department of Statistics) or rely on data previously collected by National bodies

DATA ANALYSIS PROCEDURE(S):
The percentage of the population not having productive employment is calculated as:

$$\frac{\text{(Total unemployment)}}{\text{(Total labor force)}} \times 100$$

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator measures the inability/ability of an economy to generate employment and it can be used to measure the efficiency and effectiveness to absorb the labor force and the performance of the labor market created around a scheme (e.g. proposed new technology or reform in a rural system)

---

[11] Decent work is defined as one that "respects the fundamental rights of the human person as well as the rights of workers in terms of conditions of work safety and remuneration. It also provides an income allowing workers to support themselves and their families as highlighted in Article 7 of the Covenant. These fundamental rights also include respect for the physical and mental integrity of the workers in the exercise of their employment" (Committee on Economic, Social and Cultural Rights, General Comment 18, Article 6: the equal right of men and women to the enjoyment of all economic, social, and cultural rights (35th session, 2006), UN Doc. E/C.12/GC/18 [2006])

Development outcome: Youth employment increased

RESULT STATEMENT:
Increased incomes and employment

LINKS TO CGIAR SRF: SLOs 1, CC: GENDER AND YOUTH (B):
- 1.3.1 Diversified enterprise opportunities
- 1.3.2 Increased livelihood opportunities
- B.1.3 Improved capacity of women and young people to participate in decision-making

INDICATOR STATEMENT:
Proportion of youth (aged 15-24 years) not in education, employment or training (SDG 8.6.1: NEET[12] rate)

INDICATOR KEYWORDS DEFINITION:
- *Youth* corresponds to persons aged between 15 and 24 years of age
- *Occupation* means employment in work, education, or training
- *Regions* refers to the specific locations where ICARDA is undertaking interventions

DATA NEEDED:
- Total number of youths employed
- Total number of youths in education or training
- Total number of the youth labor force in target countries

DISAGGREGATION:
Occupation, sex, target regions

SUGGESTED SOURCE(S):
Survey respondents and/or offices of national statistics

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data annually via surveys referring to ILO standards (Department of Statistics) or rely on data previously collected by National bodies

DATA ANALYSIS PROCEDURE(S):
The percentage of youth not having an occupation is calculated as:

$$\frac{\text{Youth} - (\text{Youth in employment} + \text{Youth not in employment, but in education or training})}{\text{Youth}} \times 100$$

JUSTIFICATION AND MANAGEMENT UTILITY:
This indicator provides a better overview of the potential youth labor market compared to youth unemployment.
It can be used to measure how implemented interventions affect employment and the dynamics between the work and education sectors

[12] The Youth NEET rate is the share of youth not in employment, education or training (ILO, https://www.ilo.org/ilostat-files/Documents/description_NEET_EN.pdf)

Research outcomes

Research outcome: Technologies adapted to local conditions

RESULT STATEMENT:
Stakeholders adapt (apply) proven technologies to local conditions

LINKS TO CGIAR SRF: SLOs 1 AND 2:
- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:
Number of proven technologies adapted to local conditions

INDICATOR KEYWORDS DEFINITION:
- *Proven* means improved and validated
- *Adapted* means stakeholders have used proven technologies (potentially adapted to fit their needs) received directly from the implementer for at least one full cycle of production, processing, and distribution

DATA NEEDED:
Number of proven technologies that were adapted to local conditions

DISAGGREGATION:
Type of technology, target region

SUGGESTED SOURCE(S):
Project reports or survey respondents

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data on an annual basis or as needed via survey

DATA ANALYSIS PROCEDURE(S):
The indicator is calculated by summing up all the proven technologies that were adapted to local conditions

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator will assist the project to track the number of proven technologies that were adapted to local conditions; a higher number means better achievement

Research outcome: Stakeholders adapting proven technologies to local conditions

RESULT STATEMENT:
Stakeholders adapt (apply) proven technologies to local conditions

LINKS TO CGIAR SRF: SLOs 1 AND 2:
- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:
Number of stakeholders adapting proven technologies to local conditions

INDICATOR KEYWORDS DEFINITION:
- *Proven* means improved and validated
- *Adapting* means stakeholders have used proven technologies (potentially adapted to fit their needs) received directly from the implementer for at least one full cycle of production, processing, and distribution

DATA NEEDED:
Number of stakeholders adapting proven technologies to local conditions

DISAGGREGATION:
Type of technologies, target regions

SUGGESTED SOURCE(S):
Project reports and survey respondents

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data on an annual basis or as needed via survey

DATA ANALYSIS PROCEDURE(S):
The indicator is calculated by summing up all the stakeholders adapting proven technologies to local conditions in all target regions

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator will assist the project to track the number of stakeholders adapting proven technologies to local conditions; a higher number means better achievement

Research outputs
Research output: Technologies developed

RESULT STATEMENT:
Production technologies developed and validated

LINKS TO CGIAR SRF: SLOs 1 AND 2:
- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:
Number of production technologies developed

INDICATOR KEYWORDS DEFINITION:
- *Developed* means production technologies must have passed any required approval process and should be available for manipulation. The production technologies should have proven benefits and be ready for use as they emerge from the research and testing process

DATA NEEDED:
Number of production technologies developed

DISAGGREGATION:
Type of technology

SUGGESTED SOURCE(S):
Project report

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Project team will collect data on an annual basis or as needed through field interviews and activity reports

DATA ANALYSIS PROCEDURE(S):
The indicator is calculated by summing up all production technologies developed

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator will assist the project to track the number of production technologies validated; a higher number of technologies means better achievement

Research output: Technologies validated

RESULT STATEMENT:
Production technologies developed and validated for ICARDA's mandated crops and livestock

LINKS TO CGIAR SRF: SLOs 1 AND 2:
- 1.1.2 Reduced production risk
- 1.4.1 Reduced pre- and post-harvest losses
- 1.4.2 Closed yield gaps through improved agronomic and animal husbandry practices
- 1.4.3 Enhanced genetic gain
- 2.1.2 Increased access to diverse nutrient-rich foods

INDICATOR STATEMENT:
Number of production technologies validated

INDICATOR KEYWORDS DEFINITION:
- *Validated* means research that ICARDA and partners undertake guarantees the performance of a technology not developed by ICARDA

DATA NEEDED:
Number of production technologies developed

DISAGGREGATION:
Type of technology

SUGGESTED SOURCE(S):
Project reports and interviews

SUGGESTED DATA COLLECTION METHODOLOGY(IES):
Data collected on an annual basis or as needed through field interviews and activity reports

DATA ANALYSIS PROCEDURE(S):
The indicator is calculated by summing up all production technologies validated

JUSTIFICATION AND MANAGEMENT UTILITY:
The indicator will assist the project to track the number of production technologies validated; a higher number of technologies means better achievement

Established in 1977, the International Center for Agricultural Research in the Dry Areas (ICARDA) is a non-profit, CGIAR Research Center that focusses on delivering innovative solutions for sustainable agricultural development in the non-tropical dry areas of the developing world. We provide innovative, science-based solutions to improve the livelihoods and resilience of resource-poor smallholder farmers. We do this through strategic partnerships, linking research to development, and capacity development, and by taking into account gender equality and the role of youth in transforming the non-tropical dry areas.
www.icarda.org

CGIAR is a global research partnership for a food-secure future. CGIAR science is dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources and ecosystem services. Its research is carried out by 15 CGIAR centers in close collaboration with hundreds of partners, including national and regional research institutes, civil society organizations, academia, development organizations and the private sector.
www.cgiar.org