

Evaluation of Danida supported Research on Agriculture and Natural Resource Management 2006-2011

Annex J Examples of re-worked Objective and Output Statements from FFU Projects

In the following examples the **Overall Objectives, Intermediate Objectives** and **Outputs** of two FFU projects are analysed and the statements are re-worded to satisfy logframe management guidelines and present clearer pictures and understanding, for purposes of monitoring and evaluation.

No additional material has been added.

Example 1

Stated **Overall Objective** – To improve the food security and food safety in Sub-Saharan Africa by improving cereal production using natural endophytic fungi.

The contribution that the project can meaningfully make is at a level below this in terms of scale and scope – it is not an endpoint. A better wording might be:

Food security in Burkina sorghum-based farming systems improved

Stated **Intermediate objectives** – To stimulate capacity building in Burkina Faso and Denmark in the area of sustainable crop production by the use of natural endophytic fungi.

1. To describe and publish the Sahel biodiversity of endophytic mycoflora in sorghum ((not reported before).
2. To identify and isolate naturally occurring endophytic fungi of sorghum providing improved crop tolerance to drought.
3. To identify and isolate naturally occurring endophytic fungi of sorghum providing improved crop resistance to myco-toxinogenic fungi.
4. To strengthen strategic partnership between institutions in Burkina Faso and Denmark within research areas of climate changes and biodiversity.

There are too many objectives and they are in fact more like outputs (see below), some are also re-statements of the Outputs listed in the proposal (of which there are too many). The *Intermediate Objective* is better stated as:

The capacity to use natural endophytic fungi in sustainable crop production in Burkina Faso strengthened

Stated **Output of project**

1. Documentation of Sahel biodiversity of fungal endophytes and other mycoflora in plants and farm-saved seeds of Sorghum.
2. Conclusive testing of a Danish key technology on fungal endophytes in relation to global climate changes and cereal production (stable food) in semi-arid agriculture.
3. One African postdoc (Sahel) scientifically exposed to mycology and drought resistance in crop production.

4. Two Danish institutions strengthened within research on biodiversity as a resource to combat climate changes.
5. An already established scientific partnership (North-South) extended and strengthened.
6. Three scientific publications.

These outputs are activities, milestones or indicators. The actual outputs that could be considered necessary and sufficient to achieve the *Intermediate Objective* are something like:

1. Strategic partnership between institutions in Burkina Faso and Denmark strengthened
2. Sahel biodiversity of endophytic mycoflora in sorghum documented
3. Naturally occurring endophytic fungi of sorghum providing improved crop resistance to drought identified and isolated
4. Naturally occurring endophytic fungi of sorghum providing improved crop resistance to myco-toxinogenic fungi identified and isolated

Putting it all together:

<p>Overall Objective</p> <p>Food security in Burkinabe sorghum-based farming systems improved</p>
<p>Intermediate Objective</p> <p>The capacity to use natural endophytic fungi in sustainable crop production in Burkina Faso strengthened</p>
<p>Outputs</p> <ol style="list-style-type: none"> 1. Strategic partnership between institutions in Burkina Faso and Denmark strengthened 2. Sahel biodiversity of endophytic mycoflora in sorghum documented 3. Naturally occurring endophytic fungi of sorghum providing improved crop resistance to drought identified and isolated 4. Naturally occurring endophytic fungi of sorghum providing improved crop resistance to myco-toxinogenic fungi identified and isolated

Example 2

Stated **Overall Objective** – The overall objective is to take a biotechnological approach to increase potato yield and reduce pesticide use **by** improving pest and disease resistance as an important step towards sustainable potato production. **In addition**, knowledge of engineering of metabolons will be gained through engineering the glucosinolate metabolon into potato.

This is a complex three-part statement:

1. The overall objective is to take a biotechnological approach to increase potato yield and reduce pesticide use by:
2. Improving pest and disease resistance as an important step towards sustainable potato production. In addition,
3. Knowledge of engineering of metabolons will be gained through engineering the glucosinolate metabolon into potato.

The first part can be restated as the overall objective:

Sustainability of Peruvian potato production improved

The second part then becomes a re-worded *Intermediate Objective* (see below); the third part is possibly an output.

Stated **Intermediate objectives** – The intermediate objective is to generate transgenic tobacco and potato lines, which are engineered to produce their own natural pesticides in the form of glucosinolates and their hydrolysis products.

The fact that these tobacco and potato lines are being *generated* makes them an output and not an intermediate objective. The actual Intermediate Objective can be taken from the original Overall Objective statement:

Pest and disease resistance in Peruvian potato crops improved

Stated **Output of project**

1. The expected result is transgenic potato lines engineered with the glucosinolate metabolon and the glucosinolate hydrolytic enzyme myrosinase. An evaluation of the proposed strategy towards sustainable potato production based on the results of in vitro bioassays and contained greenhouse trials with selected potato pathogens and non-target organisms tested against the transgenic potato.
2. A Peruvian PhD student will obtain training in plant biotechnology. The results will be disseminated through publications in scientific and popular journals and other outreach activities such as participation in annual conferences and workshops with seminars and posters. The biotechnological approach and its potential will be a debated on the website of the project.
3. Plant biotechnology, a future necessity to meet food and energy demands in an environmental safe way worldwide, will be strengthened.

Some elements of these statements are indicators, others are activities. The outputs can be re-worded to capture the elements not included in the other statements, which provide the necessary and sufficient conditions to achieve the Intermediate Objective:

1. Knowledge of engineering of metabolons strengthened
2. Transgenic tobacco and potato lines producing their own natural pesticides in the form of glucosinolates and their hydrolysis products generated
3. Peruvian capacity for innovative research in biotechnology strengthened

Put together:

Overall Objective Sustainability of Peruvian potato production improved
Intermediate Objective Pest and disease resistance in Peruvian potato crops improved
Outputs <ol style="list-style-type: none">1. Knowledge of engineering of metabolons strengthened2. Transgenic tobacco and potato lines producing their own natural pesticides in the form of glucosinolates and their hydrolysis products generated3. Peruvian capacity for innovative research in biotechnology strengthened