INSTRUCTION MANUAL

Excellence in Breeding PLATFORM

# Developing Product Replacement Strategies

A manual for developing product replacement stategies using the online EiB Product Profile creation tool.

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CGIAR | Excellence in Breeding Platform

Tools and services that create synergies and accelerate genetic gains of breeding programs targeting the developing world

## Introduction

Product Profiles are a concept designed to enhance the impact of breeding programs by focusing efforts on the development of products designed to be successful in target markets. This requires a design process driven by market knowledge that incorporates cross-functional input,

The Excellence in Breeding Platform (EiB) Product Replacement Strategy tool has been created to capture this multi-functional design input in a systematic format, to facilitate the organization of the breeding network and communication with key stakeholders.

The tool is accessible from your user profile in the EiB website (www.excellenceinbreeding.org), or from the dedicated page of EiB Module 1 (www.excellenceinbreeding.org/module1).

## Key Definitions

### Product Profile

A *Product Profile* is understood as a written description of the traits being targeted in a new product (variety) that will achieve the goals of the breeding program.

### Product Replacement Strategy

A product replacement strategy involves the deployment of a *Product Profile* to develop a variety with superior characteristics to a variety already available on the market that is dominant within a particular breeding or agro-ecological zone, within a restricted period of five years for most crops (some crops may have different timelines dependent on the breeding cycle, e.g. 10 years for bananas).

In order to achieve this goal, the *Product Profile* describes a mix of *basic traits* essential to the success of the market variety that the new product should at least meet, and *value-added traits* where the breeding program will seek to improve on the market product, therefore creating a more successful and impactful variety.

### Pre-breeding strategy

A pre-breeding strategy differs from product replacement in that the design team is focused on developing the genetic material necessary to enable the next generation of product replacement strategies. For this reason the time-line is different for the traits being targeted (future value-added traits and game-changing traits), and the design team receives more input from technical breeding specialists.

### *Basic Traits ("Must Have Traits")*

Traits that the breeders are to incorporate into any experimental line promoted to stage five (5) of the product advancement stage gate process. The market will most likely reject any new variety

introduction without these basic traits because, in the first instance, the customer adopted the variety that is now to be replaced because it possessed those basic traits.

***Value-added Traits***

Traits which represent improvements on the variety to be replaced and can be sourced from material available to the breeding program, and delivered commercially on a 5-year time-frame. The incorporation of these type of traits, while retaining the basic traits, will assure the likelihood of replacing the market leading variety.

***Future Value-added Traits***

Traits not yet available to the elite market-oriented breeding program. These traits should be addressed as part of the medium-term (5 -10 year) pre-breeding strategy.

***Game-changing Traits***

Traits currently not available within public breeding programs with enough potential for market or value-chain transformation to warrant additional investment in their development. The mining of these traits will depend on additional research funds and the traits must have broad, global implications. The product design team is asked to identify these traits when discussing the 10- and 15-year vision for the breeding program.

## Teams

### Cross-functional Design Team

The design team in the product replacement strategy group should be composed of downstream, market oriented subject matter experts (see RACI section). This represents a new means of product design in the CGIAR and NARS network, intended to improve breeding program output by incorporating demand-driven planning. Cross-functional teams provide subject matter expertise and data driven insight into the development of a forward-looking product design.

### Technical Breeding Team

A group of cross-functional, technical team members (breeding team) that will design the breeding plan to deliver the product profile contract on time (5 years) and on budget. Please refer to the RACI diagram to guide the composition of the team.

## RACI Format – Responsible, Accountable, Consulted & Informed!

The cross-functional product design team involved in creating a product profile contract to replace a variety is guided by the RACI format of working. A RACI chart is a matrix of all the activities or decision making authorities undertaken in an organization set against all the people or roles The RACI chart informs on **who** amongst the design team is **responsible**, **accountable**, must be **consulted**, and must be **informed**. At each intersection of activity and role, it is possible to assign somebody responsible, accountable, consulted or informed for that activity or decision. A RACI format is provided with this manual instruction.

| **Product Design Actors** (Best Case Scenario - if Roles are NOT Available, The person Accountable to fill the SME Gaps) | R | A | C | I |
|---|---|---|---|---|
| | Responsible | Accountable | Consulted | Informed |
| | Does (or Manages) The Work | Ultimately Accountable (Yes/No/Veto/Compromise) - Responsible for Providing an Environment for Success | Provides Feedback and Contribute to the Activity | Needs to Know of the Decision or Action |
| DG | | | | X |
| DDGR or CRP Leader | | | X | |
| Head of Breeding or Director of Breeding | | X | | |
| Management Designate (Non-Technical Market Oriented Leader Recommended) | X | | | |
| Market Facing Breeder(s) | | | X | |
| Crop Management Voice | | | X | |
| Extenstion Agent | | | X | |
| Farmers Ogranization Representative | | | X | |
| Gender/Youth Voice | | | X | |
| Private Sector (Marketing/Sales Expertise Perferred) | | | X | |
| Seed Systems Voice | | | X | |
| Social -Economics (w/ Market & Product Knowledgeable) | | | X | |
| Product Manager (If Available) | | | X | |
| EiB Module #1 Consultant | | | X | |

# How to use the online Product Replacement Strategy tool

## 1. Welcome

On the first page of the product replacement strategy tool, you will be re-familiarized with the basic concepts involved.

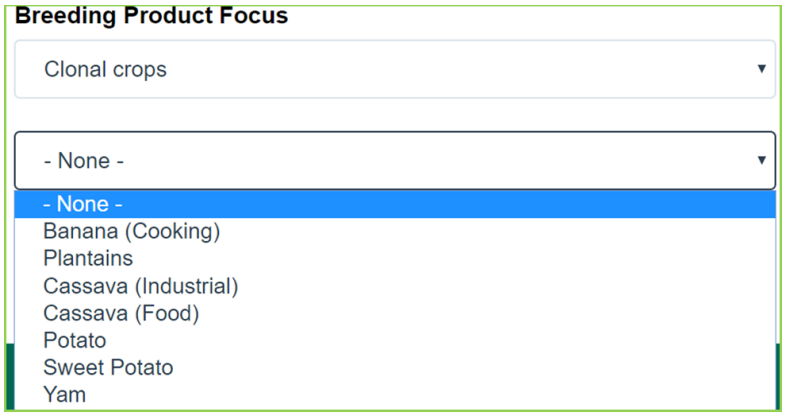
After reading the introductory text, you must indicate if you are using the product profile for training purposes, and therefore don't want your data input to be submitted to our database, or if the data is real and meant to be recorded.

**Purpose ***

- ○ Training
- ○ Real Data

Next, you are then asked to define a specific breeding product focus.

The breeding products in the product profile contracts are grouped into **family crops** where you choose the family of the crop and then choose the specific crop. You can only complete **ONE** product profile contract for each crop at a time.



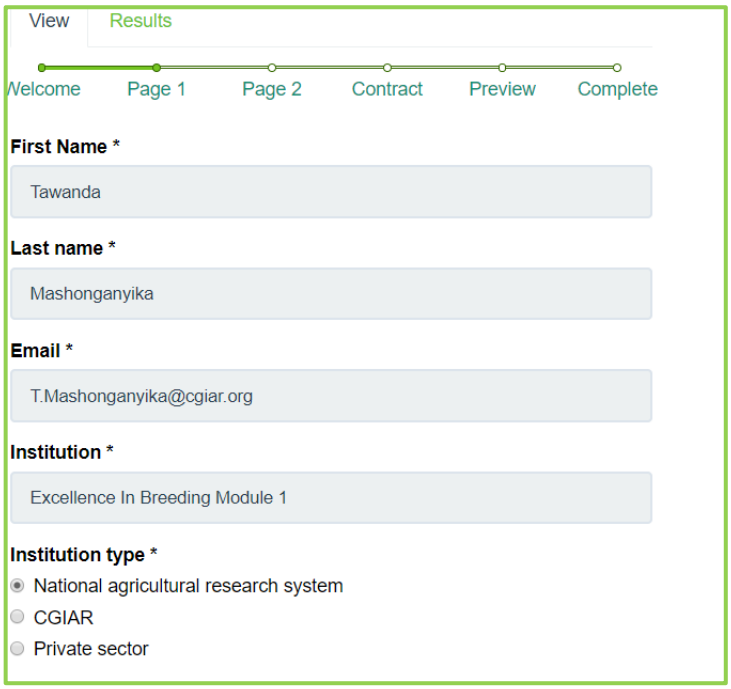

## 2. Page 1

**Personal information**

For identification and easy tracking of a completed product profile is assigned a product profile contract identification number which is automatically generated by the product profile database system. This tracking number will identify breeding material from crosses to the point when the product is released outside of the breeding program and will be important in product management. The following personal information is required to complete for each product profile contract:

- First Name, Last Name

- Email Address – Your work email address or your official email address that you use on a day to day basis is needed.
- Institution – Full name of the institution that you work for or are affiliated with
- Institution Type – CGIAR, NARS, Private Sector




**Cross-Functional Design Team**

High performing groups that produce products of great impact, approach the product design and development process with a view of incorporating a high-level cross-functional design team. Designing products without the involvement of a cross-functional design team lead to producing a biased product which have less impact on the targeted market.

To complete the product profile contract, you are required to work with a team of cross-functional experts who provide subject matter expertise in the development of the variety.

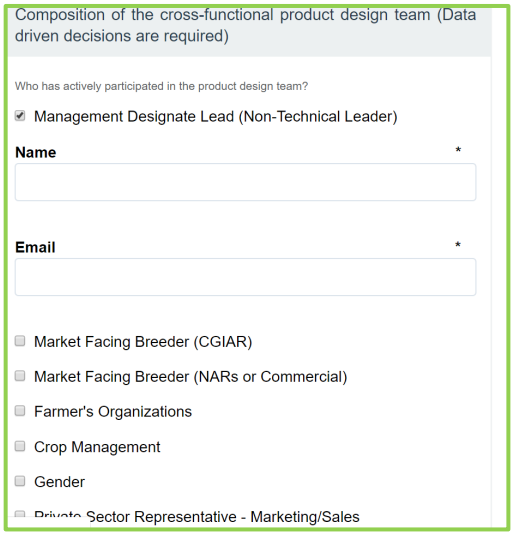
The management designate lead, who should be a **non-technical** market oriented person, takes lead of the cross-functional design team in developing the product profile contract for a particular case. You need to give the **name** and **email address** for the management designate lead for each product profile contract.

The Market Facing Breeders from both the CGIAR and (or) from the NARES/Commercial on the cross-functional product design team are required to list their names and work email addresses.

For other **subject matter experts** of the cross-functional design team, you are only required to provide the **email address** of the particular expert who was part of the design team in creating the product profile contract. This email address must be a working email address which the team member can be easily reached. An organization email address is highly recommended.

The only technical person recommended to serve on the Product Design Team is a market facing breeder. A CGIAR Breeder, a NARES Breeder or together as a team can submit a product profile contract.

Successful product design, which uses cross-functional design, teams, make product design decisions, which are **data** evidenced**.** All members who seat on the cross- functional design team should provide **market driven data** for all validations claimed in designing a replacement product.



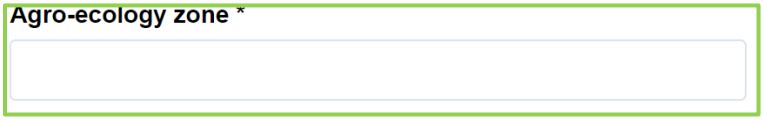

## 3. Page 2

### Product to be Replaced

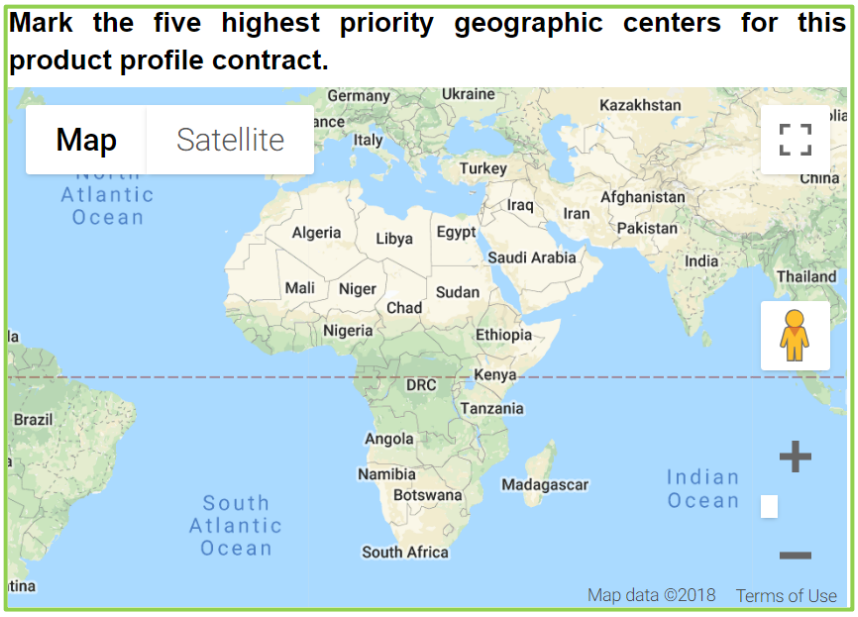
Each product profile contract targets to replace **ONLY ONE** dominant commercial product that is currently on the target market. You must enter the name of the commercial product that is currently out on the specific market that you wish to replace with the product designed with this product profile contract. It is **mandatory** to name a commercial product that you are seeking to replace. If this is not possible, work with a composite of the top 2-3 products to be replaced.

### Agro-Ecological Zone

Also known as **breeding zones**, this is the specific agro-environment make up under which the variety is grown. In the text box, in fewer than 6 words, describe the agro-ecological zone for the product profile contract.



**Location**



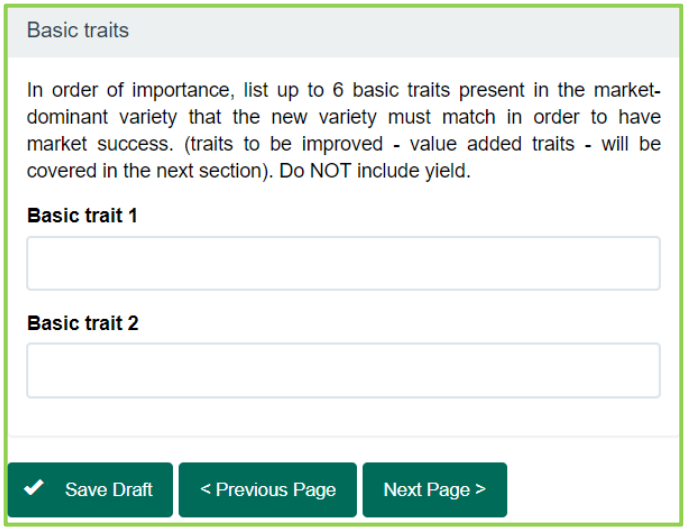

A google map is provided, were you are able to pin up to the 5 highest priority geographic locations for the product profile contract you will be completing. Please zoom in on the map, to make more specific geographic locations will appear.

**Basic Traits – Prioritized**

As defined on the start of this manual, and with active involvement of the cross-functional design team, you are required to complete the basic traits **(at most six)** that the product currently on the market and is the one you are seeking to replace do well because of those traits. These will then become the **MUST HAVE** traits that should be retained in the new product you are designing, for the product to continue to have a market share.

Please **prioritize the basic traits in order of importance**. Clients select products because of the functionality of the basic traits. The tool provides you the opportunity to capture six basic traits but only use what is necessary to capture the critical traits demanded by the client. However, the design should identify at least two basic traits.

Yield (field output) is important for all crops. The tool assumes that the replacement variety will have equal or greater yield than the variety replaced. However, the tool invites you to assess economic yield (economic gain to the farmer) which is different to field yield.




## 4. Commitment

**Value Added Traits - Prioritized**

The next section will require you to complete the Value Added Traits. As defined on the key definitions section of this manual, you will describe the **value-added traits** that together represent a **significant improvement** on the commercially available variety that you are seeking to replace. As a contract between the breeding team, partners and clients, it should be possible to **deliver** these 3 value-added traits along with the 6 basic traits in a product **within 5 years**.

Remember these three points always when thinking of the Value Added Traits:

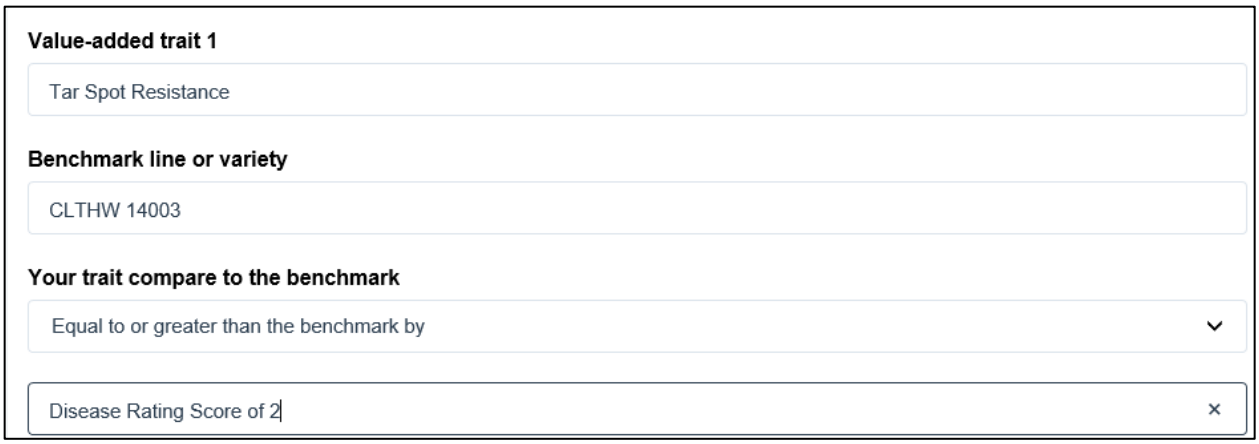
1. Don't include any value added traits if the trait is **NOT** already in your **elite populations** of your breeding program. You will need to deliver the new product described here beyond the advanced testing stage within 5 years. Don't include Value added traits that are not already present within the elite breeding populations. Those will be addressed as part of the pre-breeding strategy.

2. Breeding towards **more than** three value-added traits will reduce breeding program progress and variety turnover speed, therefore the traits described here should be prioritized based on weaknesses present in the market variety to be replaced.

3. The prioritization of these traits should be decided in **collaboration** with colleagues with the closest knowledge of market requirements.

**Benchmark Line or Variety & Trait Comparison to the Benchmark**

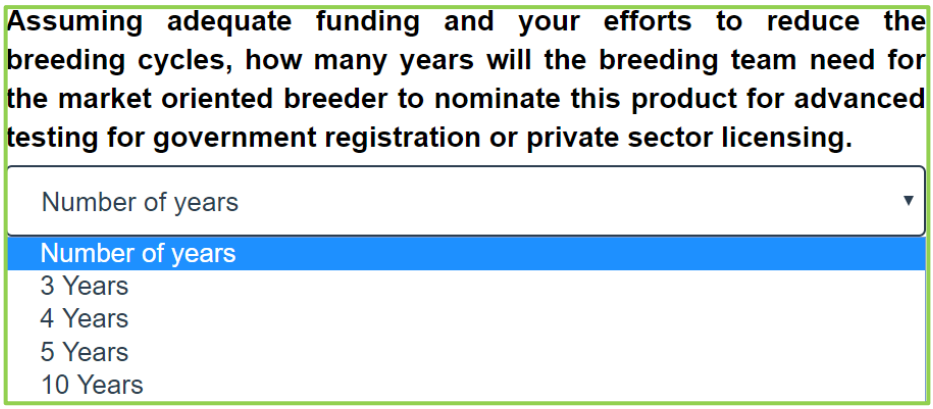
For each value added trait, you are required to give the benchmark line or variety that is already in your breeding program that acts as the yardstick product that you use as a comparative check in measuring success for that particular value added trait. From the benchmark line or variety, it is where you will then normally take the value added trait to incorporate in your new design. You can also use the variety you wish to replace as the benchmark.




**Length of Contract (Years)**

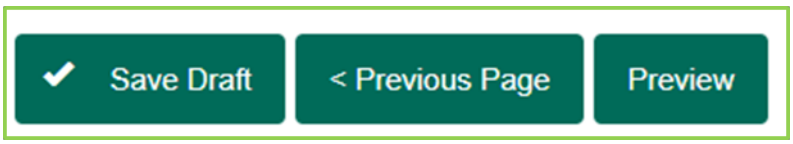
One of the drives of this product profile contract tool is to make efforts in reducing the breeding cycles in breeding product development and launch. So this product profile tool requires you to commit to a number of years that you approximate will take to have a product you just designed.

**Note**: The number of years is the time needed to go from initial cross to when the product is advanced from the breeding program into national registration or licensing trials.

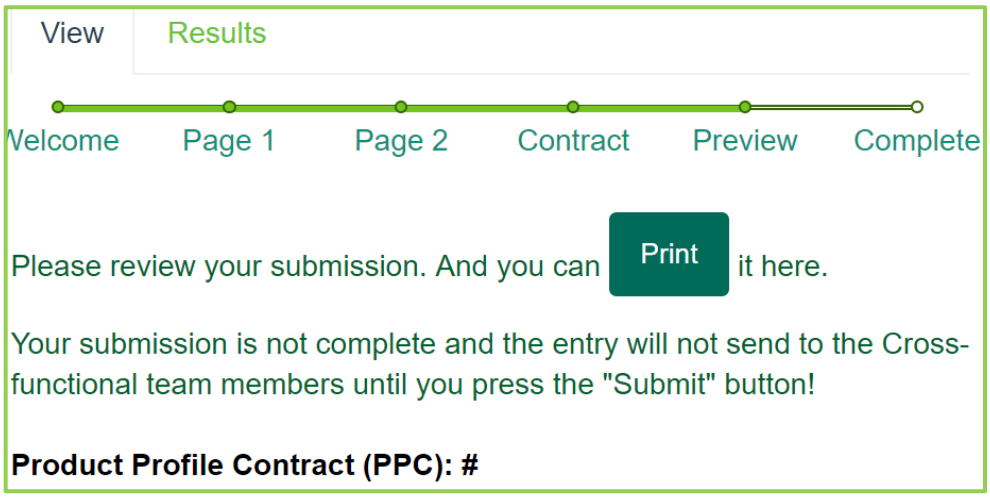



## 5. Preview

After completing the Variety Replacement Strategy and Pre-Breeding Strategy, the web-based system will direct you to a page were you are able to preview your product profile contract to check for mistakes and accuracy.



If satisfied with what you have completed, you can "Print" or save a pdf copy of your product profile contract to keep and then "Submit". Your submission is not complete until you press the "Submit" button!




**Don't want to submit the product profile contract yet?**

If you are not yet ready to submit the product profile contract, or you are still working on it over time, you **do not** need to click the "Submit" button. Please the click the **"Save Draft"** button instead and your work on the product profile contract is saved for you to return to it later. Submission only happens when you click "submit".

In case you want to update information from your product profile contract or change some things, the web-based system allows for this, and releases an updated version of your work.