RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**

CGIAR

CCAFS

Building an online platform in support of outcome-focused results-based program management

Authors ••

Wiebke Förch[1]

Tonya Schuetz[1]

David Abreu[1]

Hector Tobon[1]

Philip Thornton[1]

1 CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Key lessons

- The online platform is uniquely positioned to meet the needs of CCAFS as well as the requirements of CGIAR.

- Consensus is needed from the outset about the requirements of such a platform, as the right balance has to be struck between detail and leanness.

- We started with a complex, idealistic vision, which was radically simplified through time to promote partner buy-in. The platform was constantly being challenged to be lean and intuitive.

- Several testing rounds are needed to get to the right level of minimum requirements and maximum flexibility; at the same time, the conceptual structure of the online platform needs to be robust enough to allow for adjustment.

- The conceptualisation of the online platform took the most time and effort; inputs were needed from program managers, project leaders, research and development partners, and monitoring, learning and evaluation experts, to achieve buy-in from an early stage.

About Us ••

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) brings together the world's best researchers in agricultural science, development research, climate science and Earth System science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. CCAFS is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). www.ccafs.cgiar.org

Background

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), as a research for development (R4D) program, is at the cutting edge of generating international public goods and demand-driven science products. It also plays a bridging role: transforming credible scientific evidence and results into development outcomes. CCAFS has been at the forefront of testing and thus paving the way for moving a multi-million dollar R4D program from a log-frame approach to an outcome-focused approach. A key part of this has been to put in place a results-based management (RBM) monitoring, learning and evaluation (ML&E) system, including elements of adaptive management and looped learning. CCAFS started early on to develop an online planning and reporting platform (P&R) in support of program and project management processes. The aim was

to assemble, under one umbrella, as far as this was possible, the management information needed by program managers and project leaders to be able to plan, report and synthesize information for different purposes and audiences.

The Overall Aim of the Online Platform

The overall aim is to work towards one online system (a "one-stop shop") at the program level for pre-planning, planning and reporting tasks, that also has functions to allow for program monitoring, learning and evaluation, data management, and donor reporting. The platform is aimed not only at addressing program requirements but also at meeting CGIAR system-level requirements. In operationalizing an outcome-focused approach, adaptive management functions are embedded in the system (such as iterative learning and feedback processes), to encourage and enable project teams and program managers to work in a reflexive, forward-looking manner guided by their impact pathways. The one-stop shop aims to be interoperable with other platforms, repositories, and data-information systems; ultimately, it will allow for adjustments in planning and reporting throughout the research project and program life cycles.

Platform Development Process

The development process evolved along with the different phases of the program and included conceptual development as well as programming. CCAFS started as a relatively small program (CGIAR Challenge Program, 2009-2011), where planning, reporting and synthesis requirements were managed centrally. When transforming into a CGIAR Research Program (CRP) the project and partner portfolio of the program expanded rapidly. Early on in its CRP Phase 1 (2011-2014), CCAFS invested in the development of an online platform to manage its portfolio (P&R 1.0). In its Extension Phase (2015-2016), CCAFS shifted the platform towards operationalizing an outcome-focused impact pathway approach (P&R 2.0), and implemented a leaner version after one planning cycle (P&R 3.0). In 2016, CCAFS will further develop the online system (P&R 4.0) to include new requirements for operationalizing a robust outcome-focused monitoring, evaluation and learning (MEL) system for Phase 2 (2017-2022).

CCAFS P&R 1.0

As noted above, in the early years of CCAFS as a Challenge Program most planning and reporting was done offline using spreadsheets. The program expansion towards a CRP meant that a new system was required, allowing planning, reporting and synthesising at different levels and for different requirements within one system. With many more partners and projects, the offline spreadsheet-based system was no longer appropriate.

The first version of P&R was developed to support program-level management of the activity portfolio. It was based on the conceptual thinking of a log-frame approach with annual activities and milestones for planning and reporting, as well as higher level, multi-annual outcomes which were defined at the onset of the program and reported against in specific years. Users were required to plan and report activities within their respective portfolios in the P&R platform. The users of the platform were the theme and regional program leaders, as well as CGIAR Centre Contact Points. P&R 1.0 also fulfilled synthesis functions, whereby themes provided syntheses of activities across regions, at the level of milestones and outcomes. Reports were extracted by the technical team and the program management team used these as inputs into annual reports.

The conceptual development of P&R 1.0 was driven by the technical team, with input from program officers. It allowed a limited user group to input information which was then extracted by the technical team for different purposes. P&R 1.0 did not allow activity leaders to input information directly, which meant that a lot of collating of information happened offline; they were also not able to log in and review the portfolio. The functionality of the platform was limited. Over time, the demands placed on the platform changed and so the platform needed to change. P&R 1.0 saw several technical improvements throughout its first phase, but with a changing orientation of CGIAR towards outcome-focused research, the platform had to be conceptually overhauled to meet the new requirements.

CCAFS P&R 2.0

The development of the second version of the P&R was driven by the shift towards a results-based and outcome-focused research program for development. It was built to cover the various phases along a program's life cycle: pre-planning, project planning, project reporting, program reporting, and program synthesizing. The conceptual development of P&R 2.0 was done as part of the results-based management trial that CCAFS implemented for the CGIAR Consortium Office. Six projects were selected and their activities were planned along an impact pathway. Lessons from these projects informed the conceptual development of P&R 2.0, which was then rolled out for the entire 2015 program planning cycle.

In version 2.0 of the platform, program managers set up the programmatic goals and flagship and regional frameworks in a "pre-planning" stage. This included defining outcome targets at the program level, towards which project leaders would then map their projects' contributions.

P&R 2.0 allowed the planning of projects across multiple years; project activities were the main unit for data entry (see figure 1). Cross-cutting topics such as gender, communications and capacity development were integrated into project planning and reporting. Within impact pathway thinking, projects no longer consist only of research activities, but they also need to report on engagement, communications and other types of activity that are critical to the project's ability to achieve outcomes. With changing
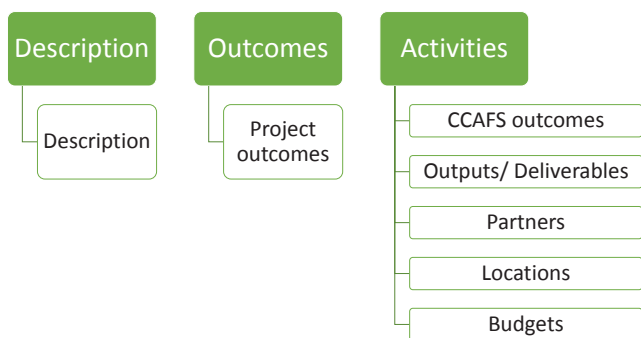
Figure 1 P&R structure for version 2.0

CGIAR policies on open access and data management, more metadata were being requested from projects. Functionality relating to report querying was expanded, allowing users to generate some types of reports.

The user group for P&R 2.0 was expanded to "management liaisons" (Flagship Program Leaders, Regional Program Leaders, cross-cutting topic leaders, Coordinating Unit personnel), project leaders and project coordinators, Centre contact points, activity leaders, and budget officers. P&R 2.0 was opened for a limited time to allow project planning.

The development of version 2.0 of the platform involved more stakeholders than the previous version, although its design was still relatively top down and involved mostly program team members, ML&E experts and the technical team. P&R 2.0 attempted to implement an idealistic approach to impact pathways. As a result, the level of detail requested at the activity level resulted in a lot of duplication of information. At the same time, key elements of planning and reporting along an impact pathway were still missing (such as the capturing of lessons) or not yet well integrated (such as gender elements). A series of CCAFS regional planning workshops in 2014 offered an invaluable opportunity for engaging with project leaders and collecting feedback on the platform.

It was clear that in operationalizing an impact pathway based approach, further modifications would need to be made to the platform to cut down on micro-management and improve user friendliness and functionality.

CCAFS P&R 3.0

After an intense process of collecting feedback from the different user groups who planned for 2015 in P&R 2.0, the conceptual development team went back to the drawing board. One key mechanism for the conceptualization of P&R 3.0 was participation with in-depth user engagement to foster co-creation, input and buy-in from the outset. Another mechanism involved working with given program and system-level reporting requirements, to cut down on redundant information. P&R 3.0 was first used for the CCAFS 2016 planning cycle.

P&R 3.0 was improved to function as a program management system that was leaner, more user-friendly and with more functionality than P&R 2.0. Figure 2 shows the P&R 3.0 Dashboard landing page. P&R 3.0 was structured around the elements of a logical causal chain of an impact pathway where activities contribute to outputs which lead to outcomes. Much of the repetition that was created through activity-level planning and reporting was eliminated by moving most elements to the project level (see figure 3). Further project-level functionalities were reduced to cut down on micro-management and foster the outcome-focused approach. Cross-cutting topics such as gender and social inclusion, capacity strengthening, partnerships, data management and communications were integrated along the steps of the impact pathways, rather than being kept in separate sections in the platform.

For multi-annual projects that are focused on outcome delivery, adaptive management is critical. P&R 3.0 allows for project plans to be changed, with key changes and reasons for these being captured, supported by functions for guided reflection and documented learning, opportunities to note lessons for upcoming planning or reporting cycles, and interactions with the management liaison in the process.

The user groups associated with version 2.0 of the platform are being maintained for version 3.0, with one addition: Centre contact points are taking a stronger role than before, as they are largely responsible for maintaining the bilateral projects that contribute to the CCAFS portfolio.

Webinars have been offered at different stages to familiarize users with P&R 3.0 and allow for interactions between the conceptual development team, the platform developers, and the user community. Currently, P&R 3.0 is open for use for a limited time twice each year: once for planning and once for reporting. Conceptual development and programming happens on an ongoing basis to respond to major issues
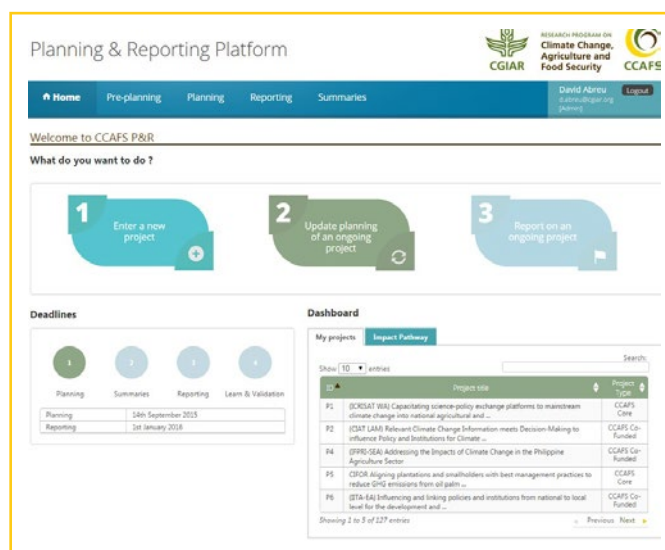

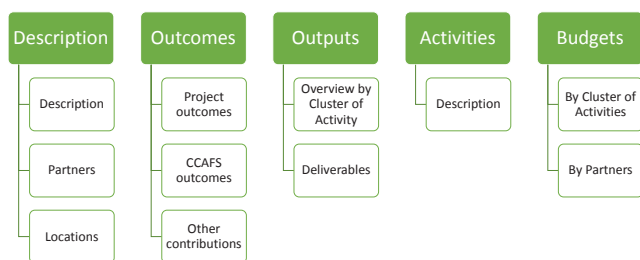**Figure 2 P&R 3.0 Dashboard landing page.**

Figure 3 P&R structure for version 3.0

directly. Thus, after completing the ongoing planning cycle, the reporting elements of the platform will be updated to reflect recent learnings and developments.

CCAFS P&R 4.0

It is envisaged that CCAFS will move into a Phase 2 in 2017. What exactly will be required in relation to planning and reporting requirements, ML&E, and platform analytics, is currently being established. P&R 4.0 will be designed with these new requirements in mind. The pre-planning and synthesis stages, in particular, will integrate the CGIAR Strategic Results Framework and will thus enable CCAFS to synthesize and monitor annual progress towards CGIAR committed outcomes. This may well necessitate working with other CRPs to identify appropriate formats for synthesis and reporting. Learnings from completing the 2015 and 2016 planning and reporting cycles will also be taken on board to further enhance functionality, user friendliness and leanness.

In line with the overall aim of creating a one-stop shop for all program management requirements, P&R 4.0 will be integrated with existing financial systems and will be open to users throughout the year. In the longer term, more elements of project-level management may also be added, if the demand arises. Proposal submission and selection processes are capabilities that could be considered for inclusion in the future, for example.

Service Delivery of CCAFS online platform

P&R 3.0 has been designed to offer a range of functionalities that are critical in order to ensure that it can meet the service delivery requirements placed on it. Most importantly, this means interoperability with or linkage to other data platforms (e.g., partner contacts databases), repositories (e.g., CG space), and systems (e.g., the financial One Corporate System, OCS). It also includes information feeds for requirements such as Plans Of Work and Budget (POWB), CRP annual reporting, and CRP indicator reporting (see Figure 4). As noted above, based on a results-based management approach, P&R 3.0 operationalizes elements of adaptive management, with justifications being required for changes made and fostering looped learning with insights available at the next project management step. It also implements a project review and evaluation process with feedback between the project leader

and the program management liaison, project ratings through a traffic light system, and a deliverables ranking process and traffic light system. These processes can be linked to the release or withholding of financial disbursements, if required, depending on performance.

A range of syntheses functions at different steps of the process allow for automated, user-defined summary report generation. Quantitative aggregation of outcome target values, with an annual breakdown of progress towards outcomes, along with a process for minimizing double counting through triangulating from different perspectives, is complemented with qualitative narratives and validations. Illustrative mapping of nested impact pathways show how project impact pathways are mapped into the program's flagship and regional impact pathways, which are, in turn, mapped into the CGIAR system-wide sub-intermediary development outcomes (sub-IDOs), the IDOs, and the system level outcomes (SLOs).

Other functionalities that enhance the usability and user-friendliness of P&R 3.0 include:

- Live support chat;

- Document upload functions;

- Maps for specification of locations of work;

- Capturing of minimum meta-data for outputs and deliverables according to set standards;

- Specific reporting features such as outcome case studies (outcome stories) and project highlights; and

- Users profiles set to match leadership styles, such as the inclusion of more detailed work plans, if desired.

Lessons and Insights

Ownership and buy-in: Backing from program management is critical and strong engagement with a wide range of users needs to be in place. Project-level users were encouraged through including them in the testing of the platform and thus allowing them to shape the system via suggestions for improvement. The platform is a collaborative effort with a wide range of program participants. This entails managing expectations, making explicit what the platform can and cannot achieve, and working towards a common understanding, language use (glossary) and clarity of roles and responsibilities. All this is happening in a continuous, collaborative process.

Technical programming of the P&R: The online platform needs to be user-friendly, self-explanatory and intuitive. Instruction boxes at the top of each page in P&R 2.0 were not effective. Conceptual development took place in shared PowerPoint files, while P&R 3.0 was tested in Excel as part of a results-based management trial and then rolled out to all CCAFS projects. This allowed for major adjustments before the actual programming of the platform. It is important to
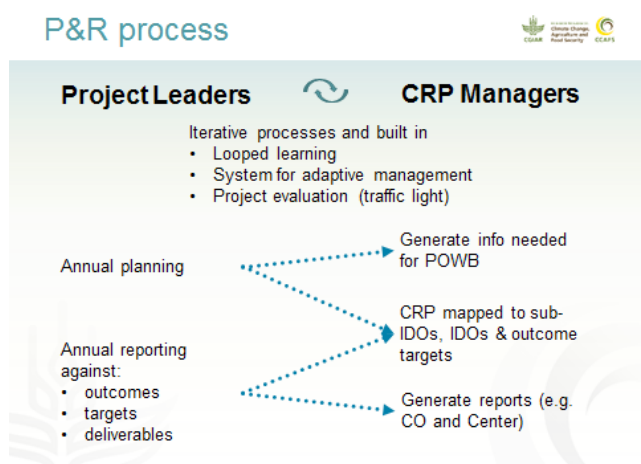
P&R process

Figure 4. P&R 3.0 capabilities.

note that the programming is not that challenging, compared with conceptual development. However, the technical team needs to have an understanding of the conceptual design, and it helped that the technical programming and conceptual development of the platform was done in a collaborative and iterative manner.

Detail versus big picture balancing: There is a balance to be struck concerning the level of detail at which the program manages its portfolio. We built a system that tries to meet the demands for being as lean and simple as possible for program (rather than project) management. The planning and reporting components are focused on outcome delivery and donor requirements. Partners are trusted to know what they are doing and how they deliver - the level of detail required at the activity level has been reduced to a minimum. To allow for results-based management, mechanisms have been put in place to monitor progress towards outcome delivery and allow for evaluation and programmatic learning.

Timing and resources: Conceptual development takes time and needs to engage different user groups. It requires careful thinking through at the highest level of detail and always takes more time than anticipated, including learning and revisions, not to mentioned platform testing. We have found that there are considerable benefits if the developers also have a thorough conceptual understanding of theory of change, impact pathways, outcome focus and results-based management. Prior to having the system programmed, the team worked on mock-ups. While this was cumbersome, it offered the opportunity to share with others and was a good way to develop the concept, content and rules for the platform jointly. The platform was designed at the same time as CCAFS was developing its portfolio and as well as its approach to impact pathways. The guiding principle needed to be the most important needs of the program, rather than seeking perfection in interesting though less important details.

A dynamic environment: The research for development environment is highly dynamic. Requirements for planning and reporting are often changing, and any platform has to be flexible so that these can be addressed efficiently. The current trend within CGIAR is to work towards interoperable online platforms, playing to the diverse strengths that exist in different platforms rather than being hindered by attempting to unify platforms unnecessarily. Substantial efficiency gains can be made in such an environment by learning from each other to share great ideas and new ways of making things work, and by avoiding duplication. Open engagement is key in helping to ensure that the efforts and resources invested in P&R and similar platforms benefit the wider CGIAR system and our ultimate beneficiaries.

Technical Specifications of P&R 3.0

- **Open access and open source:** P&R is an open source platform developed under the General Public License Version 3 (GNU v3). It means that P&R is free; it can be shared and changed, but is has to remain free for all its users.

- **Programming language, server capacity:** The programming language used is JAVA and the database engine MySQL. The server where P&R currently is hosted has a capacity of 1 processor (Intel(R) Xeon(R) CPU E5-2651 v2 at 1.80GHz) with 2GB RAM and 150GB for storage. This configuration is able to support about 50 concurrent users.

- **Low bandwidth compatibility:** The platform requires a good, stable connection or at least, appropriate file saving needs to be possible. Since P&R's content is 'light,' it does not require too much bandwidth to load, though it has not been developed to run on mobile devices. We are planning to include an auto-save functionality.

- **Future compatibility with other software/ programming systems:** Given its language and framework, P&R 3.0 has the potential to be compatible with other software/ programming systems in order to allow for aggregation at CGIAR level. Its interoperable structure means that links can be developed to CGIAR, donors and partners tools (such as CG-Space for Open Access with related metadata and Centres' and other partners' repositories).