Participatory Impact Pathways Analysis (PIPA)[1]

Authors

Tonya Schuetz, International Water Management Institute, Ghana

Boru Douthwaite, CIAT, Colombia

Sophie Alvarez, CIAT, Colombia

Scope

The phrase "impact pathways" (IPs) describes how project strategies and activities are expected to produce changes in the knowledge, attitudes, skills and practices of stakeholders. These changes are referred to as behavioral changes or outcomes. IPs may also include projections about how these outcomes are expected to contribute to social, environmental or economic change.

"Participatory Impact Pathways Analysis" (PIPA) is a practical planning, monitoring and evaluation approach developed for use with complex projects in the water and food sectors. It goes beyond the traditional use of logic models by engaging stakeholders in a structured process, promoting learning, and provides a framework for 'action research' on change processes. Guided by structured questions a group of project participants and stakeholders describe what they think is going to happen during their project and beyond. This is done by examining two things: 1) why the problem the project is designed to solve exists, and 2) what the stakeholder's relationships are and influence they have on the problem and each other.

This tool describes the use of PIPA by researchers who face the following challenges:

- How to harness the project's development potential from an early stage?
- How the researchers and stakeholders can lay a foundation for the continued up-take of their findings beyond the lifespan of the project?
- How can they can capitalize on a multi-disciplinary, cross-basin, multi-scale approach?
- How they can best exploit their participation in a larger program?

It can also assist in priority setting by helping make explicit the links between project or program interventions and the activities, partnering roles, and inter-relationships that are necessary to bring about the desired output, outcomes and impacts.

Target group of the tool

Project/program managers and coordinators, planners, implementers, researchers and stakeholders.

[1] PIPA grew out of ILAC funded work by the International Center for Tropical Agriculture (CIAT – Spanish acronym) on innovation histories (Douthwaite and Ashby, 2005) and work to evaluate impact pathways in an integrated weed management project in Nigeria (Douthwaite et al., 2003 and 2007). It is being developed by the Challenge Program on Water and Food (CPWF) and a number of CG Centres including CIP, World Fish, CIMMYT, ICRISAT and CIAT.

Requirements for tool application

For the PIPA workshop: Flip charts, cards and different colored "Post-it" notepads, masking tape, and marker pens. See http://boru.pbwiki.com/Online+manual for an on-line manual on how to facilitate a PIPA workshop.

For processing workshop output: social network analysis software, Existing software options include:

- UCINET (http://www.analytictech.com/ucinet/ucinet.htm), which can be tried for free for 30 days and otherwise costs $150 for schools and governments, and $250 for corporations
- NetDraw (http://www.analytictech.com/Netdraw/netdraw.htm), which is a free program from the same company that distributes UCINET that lacks some of the UCINET's functionality
- Visualyzer (http://www.mdlogix.com/solutions/additional.html).

Many other packages are available at various costs, levels of technical sophistication, and levels of ease of use. A search for "social network analysis software" on the World Wide Web will reveal many software tools.

Tool: description and application

The notion of constructing and analyzing IPs has been around for quite some time. Making this process participatory is a new approach which continues to evolve. PIPA can be used at the beginning, middle and/or end of projects. PIPA begins with a participatory workshop in which project implementers, researchers, and key stakeholders construct their project's IPs and make explicit their assumptions about how their project will achieve impact. A description of the workshop presented at the Rethinking Impact Workshop[2] follows.

PIPA describes project (or program) Impact Pathways from two distinct perspectives:

1. The *Problem tree* shows how a project can achieve its goal by addressing a series of problems connected logically by cause and effect relationships, and
2. The *Network maps* show how the actors work together, influence each other, and prepare the general environment for the new knowledge or technology being developed.

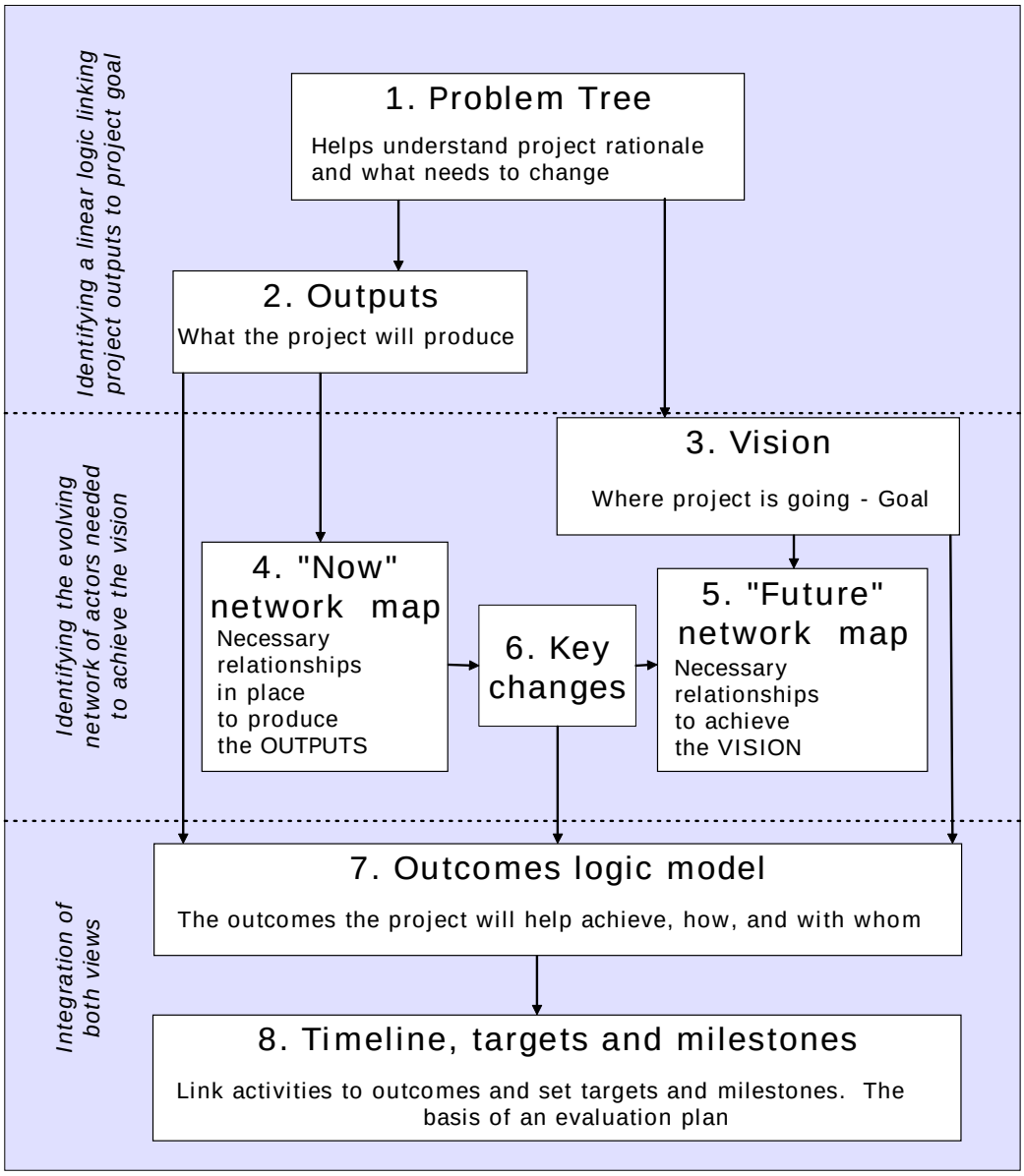
This example is a description of the application of IPs in a project conducting research on small reservoirs nested in larger program with more projects in several river basins. PIPA was used for the CPWF Small Reservoirs Project (SRP) with a two-fold objective: 1) to bridge the gap between the research project's output and its use and impact and 2) to make explicit and tap into synergies with other on-going projects at the program and basin levels.

[2] Douthwaite, B., Alvarez, B.S., Thiele, G., Mackay, R., Cordoba, D., and Tehelen, K. 2008. Participatory Impact Pathways Analysis: a practical method for project planning and evaluation. Paper presented at 'Rethinking Impact: Understanding the Complexity of Poverty and Change' Workshop, 26-28 March, Cali, Colombia.

THE PIPA WORKSHOP

The workshop process, shown in Figure 1, develops the above-mentioned perspectives.

Figure 1: The PIPA Workshop



Developing a cause-and-effect logic (Day One)

The workshop begins with participants developing a problem tree (see Figure 2)[3] linking the problems the project is addressing with the social, environmental and/or economic conditions it wishes to improve. The branches of a problem tree end when it has identified a problem that the project will address directly. Once identified, these 'determinant' problems help define the

[3] based on work by Renger and Titcombe (2003)

outputs the project needs to develop. Outputs are defined as project products that are used by people outside of the project.

Figure 2: Presenting a problem tree in the Volta Basin Impact Pathways Workshop

Developing a network perspective (Day Two)

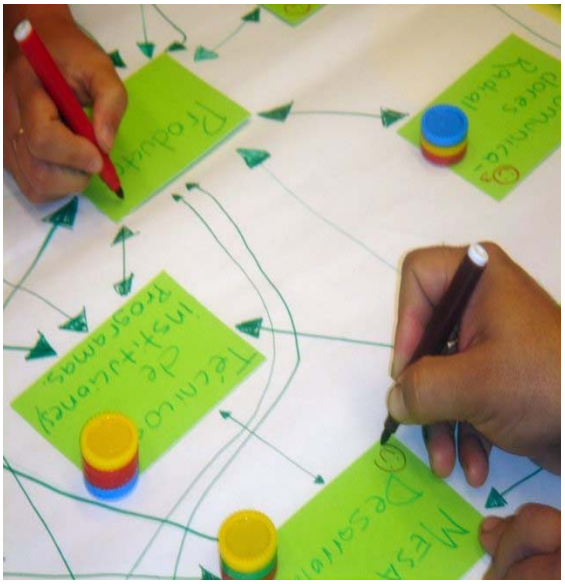
To connect Day One with Day Two, participants construct a vision of success in which they imagine what the following stakeholder categories will do differently after the project has finished:

1. The project implementers themselves
2. The users of project outputs, or 'next users
3. Groups with whom the next users work
4. Politically-important people and organizations who can help facilitate the project

Participants draw a 'now' network map, showing current key relationships between stakeholders. They then redraw the maps showing how the actors should be linked to achieve the project's vision. After this, they record the most important changes that will be needed in networks and attitudes, and explain why these changes are important and "who needs to do what" to make them happen. The influence and attitude of the actors is explicitly considered during these exercises, see Figure 3 (ii) based on work by Schiffer (2007).

Figure 3: Drawing network maps in a PIPA workshop

(i) Drawing a network map



(ii) Placement of influence towers and drawing of 'smiley' faces to indicate stakeholder attitude to the project

Developing the outcomes logic model and an M&E plan (Day Three)

In the final part of the workshop, participants develop their *outcomes logic model*. This model describes in table format (Table 1) how different stakeholders (project implementers, next users, end users, and politically-important actors) should act if the project is to achieve its vision. Each row describes changes in a particular actor's knowledge, attitude, skills (KAS), practice and strategies to bring these changes about.

Table 1: The outcomes logic model

Actor (or group of actors who are expected to change in the same way)	Change in practice required to achieve the project's vision	Change in KAS[1] required to support this change	Project strategies[2] to bring about these changes in KAS and practice?

[1] Knowledge, Attitude and Skills

[2] Project strategies include developing project outputs (knowledge, technology, etc.) with stakeholders, capacity building, communication, political lobbying, etc.

The outcomes logic model is the foundation for monitoring and evaluation (M&E). It provides hypotheses or predictions about outcomes which M&E can test. Predictions focus on project strategies and how they bring about desired changes in knowledge, attitude, skills and practice of respective actors.

M&E requires that the predictions made in the outcomes logic model are SMART (specific, measurable, attributable, realistic and time bound) so that project staff and stakeholders can determine whether or not they are being realized.

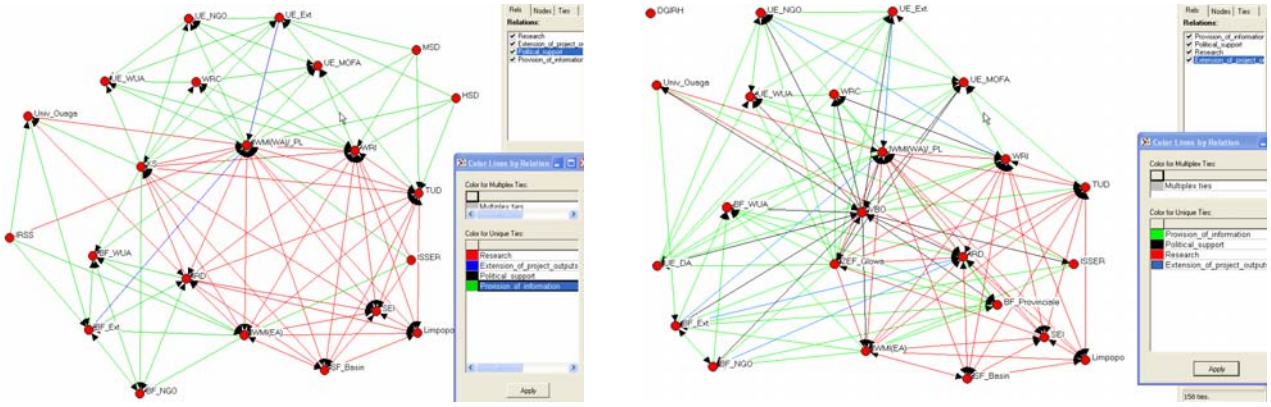
Hence, the next step in developing an M&E plan is to identify outcome targets, and milestones along the path to achieving them.

After the Workshop

After the workshop, participants complete their M&E plans and refine other workshop outputs ideally with input from those key staff members and stakeholders who could not attend.

The facilitation team can process the network maps drawn in the workshop, by using Social Network Analysis software (NetDraw see Figure 4) and analyse them quantitatively and qualitatively e.g. for the individual project or for the program level.

Figure 4: The project's "now" and "future" networks



(a) Now network

(b) Future network (6 months before the end of the project)

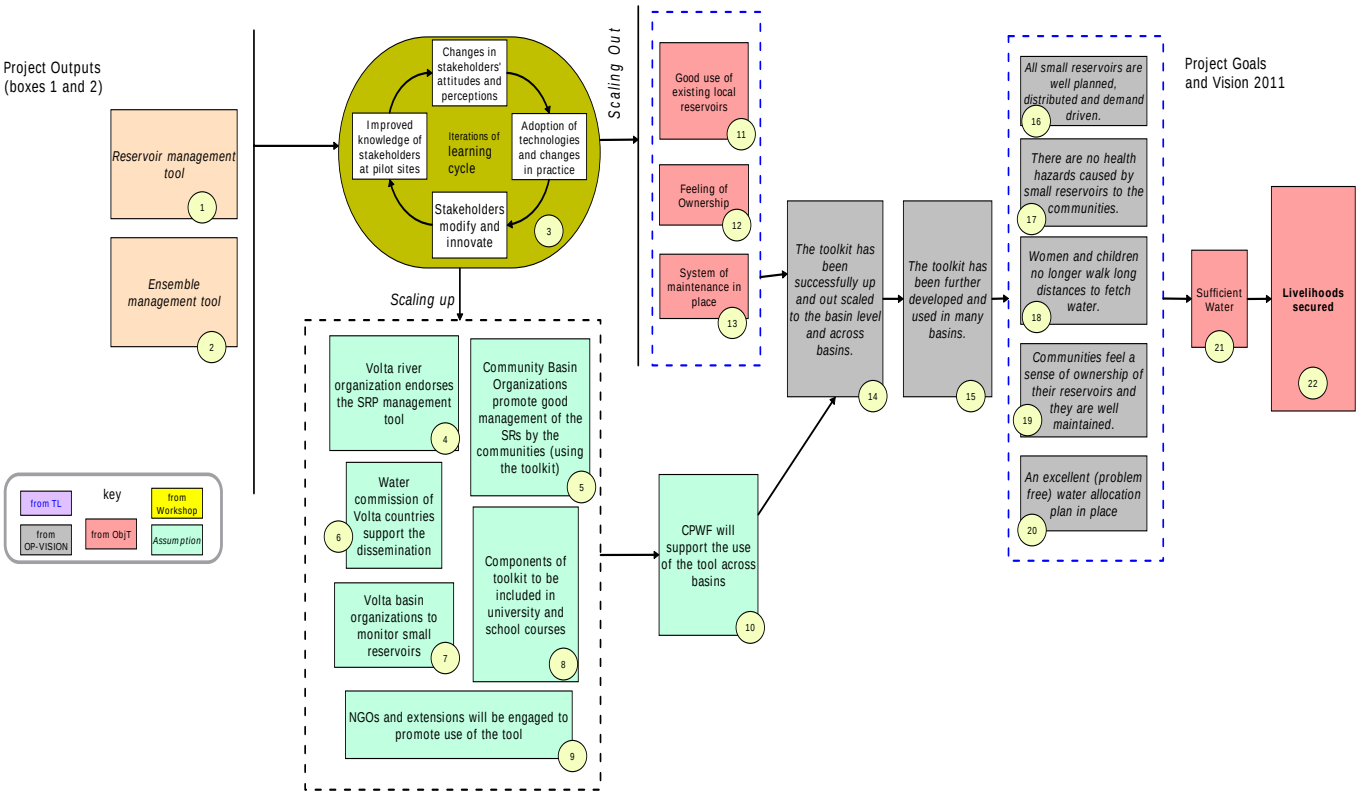
After the workshop, the facilitation and/or project teams can synthesize the project's output, and develop a first draft logic model (see example in Figure 5), and an Impact Pathway narrative[4] that described the project's "adoption theory", consisting of hypotheses concerning how the project will develop, the spread of its output. When considering the dispersion of output there are two levels to consider, both occur through networks;

- The spread of project output (e.g. a new technology or strategy) within the same stakeholder groups, from farmer to farmer, community to community (scaling out), and
- Its expansion across institutions, from people using technologies and practices from their grassroots organizations to policy makers, donors, development institutions (scale up)[5] so as to have broader impact.

[4] See Mayne (2004) for a description of performance stories upon which the idea of impact narratives derives

[5] Scaling out is understood as the horizontal spread of project outputs from farmer to farmer, or farmer organization to farmer organization and scaling up is characterized by increased institutional support for project outputs.

Figure 5: Example of an impact logic model for the Small Reservoirs Project



If M&E is to contribute to project learning, stakeholders should periodically reflect on the validity of impact hypotheses: such reflection should not be left to the end of the project. We suggest that projects hold a reflection and adjustment workshop with their key stakeholders at least once a year.

These reflection workshops can be seen as the culmination of one set of experiential learning cycles and the beginning of another. If the reflections are well documented, they can be analyzed at the end of the project to provide insights into how interventions do, or do not, achieve developmental outcomes in different contexts.

The graphic in Figure 6 a, b, and c explains to participants how the reflection process works.

Lessons learned

In our experience of applying PIPA we found the following:

By monitoring and evaluating project progress along its IPs the projects become more impact-oriented and encouraged to build-in activities to test the impact potential.

The PIPA components (problem tree, objective tree, outputs, vision, timeline, networks maps) were helpful in planning and reviewing progress towards research objectives. The PIPA Questions asked included: Where are we now? Where do we want to be by the end of the

project? How can we maintain momentum and progress even after project termination? Who will continue what the project started? Who are our partners? Who should be our partners?

Figure 6: Reflecting on progress along impact pathways (based on Flood, 1999)

Fig. 6a: During the PIPA workshop, participants develop a shared view of where they want to be in two years' time, and describe impact pathways to achieve that vision. The project then implements strategies, which lead to changes in KAS and practice of the key stakeholders

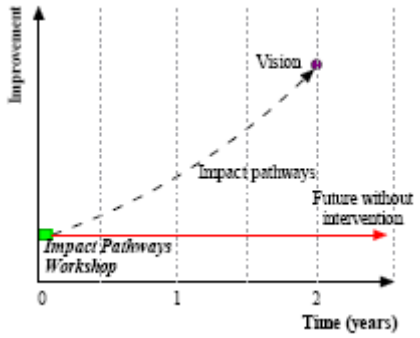


Fig. 6b: A workshop is held six months later to reflect on progress. The vision is changed to some extent, based on what has been learnt, the outcome hypotheses are revised when necessary and corresponding changes are made to project activities and strategies. New milestones are set for the next workshop.

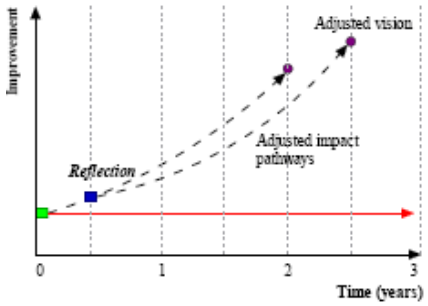
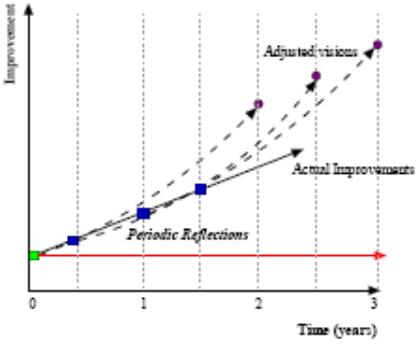


Fig. 6c: The process continues. The project never achieves its vision (visions are generally used to motivate and stretch), but it does make real improvements.



Where (geographically, mentally, institutionally) should our partners be at the end of the project? The questions posed by helped stakeholders to step back and examine project activities from different angles, to look at the project in the context of a larger program, and to achieve impact even after the project is completed.

Research design can more readily promote development when stakeholders take steps *early on* to exchange ideas, ask each other questions, and formulate a common vision. Additional resources are needed, however, when activities are built into the milestone plan to foster impacts beyond project termination ("stretch objectives").

Discipline in writing explanations of causal mechanisms and influence strategies, in the impact narrative, can help reveal assumptions and improve clarity and understanding of what the project is attempting to do. An example of a narrative description can be found at http://boru.pbwiki.com/f/ PN06%20Impact%20Narrative-4.DOC.

The PIPA workshop is most useful when two or more project teams in the same program seek better integration. The workshop also works well when a project team wishes to build common understanding and commitment with its stakeholders. In this case, two or more representatives from each important stakeholder group should attend.

.For projects focusing on small multi-purpose reservoirs, it is important that various disciplines and scales are included in the logic model. We facilitated workshops with nine projects, but this left little time for individual presentations and plenary participants tend to be overwhelmed by too much information. The ideal group has four to six participants from each project participating in the PIPA workshop. And the ideal number of groups is three to six. These limitations facilitate the development of multiple pathway perspectives

Beyond the project

An important feature of IPs is that they encourages participants to think beyond the scope of a single project. Researchers rarely achieve significant development outcomes in a typical project lifespan of three years. Hence IPs encourage researchers to consider what needs to happen after the end of the project to bring about the development outcomes. While not making projects accountable for achieving development outcomes.IPs raise their profile and give legitimacy to 'brokering' activities in which project staff actively work to establish the interpersonal and organizational links that will needed for future impact For instance, adoption theory hypotheses were developed for the SRP in the Volta Basin in a separate workshop (January 2007). These hypotheses were developed by project partners and workshop facilitators in an iterative process and then included in the IP narrative.

Recommendations

Writing the Impact Pathway narrative requires writing skills, a knowledge of IP concepts, and a good understanding of the technical scope of the project. In the case of the Small Reservoirs Project this includes geographical and disciplinary knowledge of the project as well as a good overview on the whole project.

The facilitation team found for the purpose of plotting network maps, Visualyzer software is more helpful than NetDraw.

Although linking IP theory to a suitable monitoring and evaluation tool is a work in progress,. when applying IP concepts it would useful to investigate how they can be linked to existing monitoring tools. M&E formats can be adjusted and should be kept as simple as possible.

The process of developing impact pathways involves project staff and stakeholders working together. Strong positive communication between project team members and other stakeholders

or even joint implementation can increase the likelihood of the effective use of the technique or influence decision makers to support the work.

The people working on the development of project impact pathways should include a good mix of knowledgeable project partners. There should not be so many that everyone cannot participate and contribute to each of the exercises.

Finally it should recognized that pathways are not immutable; circumstances change. After reflection, where the problem analysis for a proposed project is revealed to be inadequate, it is recommended that the researchers re-negotiate with the donors to alter the plan to create improved pathways that will produce the best possible outcomes.

Limitations of the tool

IP methodology is not yet fully developed. No single organization has yet developed a fully integrated approach, though full integration remains the goal. CGIAR Centers and Challenge Programs use different approaches to construct IPs for projects and programs. PIPA is one such approach.

To use PIPA, resources are needed to apply and implement the various tools described above. This needs to be included in the project or program budgets. It requires bringing people together and requires resources.

The PIPA theoretical framework and avaialble worksheets are still relatively complicated. They should be refined and simplified for use with wider range of stakeholders. It is a challenge to bring mutual understanding to the PIPA process. The worksheets should be drafted for different levels of understanding and skills to produce IPs varying from rudimentary to sophisticated.

References

The Participatory Impact Pathways Analysis Wiki contains more information about PIPA and many more references than listed here.

Douthwaite, B., Alvarez, B.S., Cook, S., Davies, R., George, P., Howell, J., Mackay, R. and Rubiano, J. (Accepted). The Impact Pathways Approach: A Practical Application of Program Theory in Research-for-Development. Submitted to the Canadian Journal of Program Evaluation = The main reference for PIPA is this journal article

PIPA grew out of work in Northern Nigeria described in these two articles:

Douthwaite, B., Schulz, S., Olanrewaju, A., Ellis-Jones, J. (2007). Impact pathway evaluation of an integrated Striga hermonthica control project in Northern Nigeria. Agricultural Systems. 92 pp. 201-222 AND

Douthwaite, B., T. Kuby, E. van de Fliert and S. Schulz. (2003). Impact Pathway Evaluation: An approach for achieving and attributing impact in complex systems. Agricultural Systems 78 pp. 243-265

Mayne, J. 2004. Reporting on outcomes: setting performance expectations and telling performance stories. The Canadian Journal of Program Evaluation Vol. 19 (1) pp. 31-60 = is the key reference for developing impact narratives based on the output of a PIPA workshop.

Renger, R. and Titcomb, A. 2002. A Three-Step Approach to Teaching Logic Models American Journal of Evaluation. 23: 493-503 = This is the key reference for the use of causal analysis / problem trees in the PIPA process.

Where possible, the impact logic model is based on one or more published change theories: e.g. the The Learning Selection Change Theory used as the basis for PIPA logic models for projects that foster experiential learning in 'territories' see Boru Douthwaite, 2007, and http://www.comminit.com/changetheories.html for others).

Contacts and Links

Boru Douthwaite, CPWF, b.douthwaite@cgiar.org, http://impactpathways.pbwiki.com

Tonya Schuetz, independent consultant, t.schuetz@cgiar.org

Sophie Alvarez, CIAT, Colombia, b.sophie.alvarez@gmail.com