

Evaluation of the PAPA methodology to assess the impact of a plant genetic resources workshop¹

Discussion paper

R. Van Aaken and J. Watts

International Plant Genetic Resources Institute (IPGRI), Rome, Italy

Introduction

IPGRI and the German Foundation for International Development (DSE) jointly organized the workshop “Towards sustainable national plant genetic resource programmes: policy, planning and coordination issues”. Held in Zschortau, Germany, 10–18 May 2000, the training event was aimed at senior government and research officials in the field of plant genetic resources (PGR) from 15 West African countries.

Overall, the workshop was expected to lead to improved management in terms of equity, productivity and sustainability of the plant genetic resources of the countries represented in the workshop. The workshop would contribute to this by strengthening the capability of the participating national agricultural research systems to manage their genetic resources more effectively. In order to achieve this, the workshop would:

- increase awareness and knowledge among national PGR programme leaders about building supportive policies and carrying out effective planning of their programmes
- increase collaboration in support of PGR management among countries in the West and Central African region by enhancing networking activities.

Further details on the workshop and its precise programme, contents and activities can be found in the workshop report (DSE 2000) and proceedings (Engels *et al.* 2000).

During preparations, a decision was taken to evaluate the workshop in two separate ways. First, a regular but detailed survey at the end of the workshop was used to assess participants’ reactions. The results and conclusions are presented in the IPGRI discussion paper “Evaluating the Zschortau Workshop: process and findings” (Watts 2001) and are not discussed any further here. In the training evaluation model developed by Kirkpatrick (1998, see box), this assessment of participant reaction corresponds to the first level of evaluation (reaction) and, to a much lesser extent, to the second (learning). Second, a post-training impact evaluation method was used to assess the results of the workshop, the ability of the participants to implement ideas presented during the event, and the impact of that on the participants’ work and working environments. As will be shown, this corresponds to Kirkpatrick’s third level of evaluation (performance or behaviour) and to a certain extent to the fourth (impact or results).

Kirkpatrick’s levels of training evaluation

- Level 1: Reaction
- Level 2: Learning
- Level 3: Performance (behaviour)
- Level 4: Impact (results)

(After Kirkpatrick 1998; UNDP 1988)

This report presents the findings of the impact analysis. As this was IPGRI’s first experience with this specific evaluation method, the report also elaborates on the method itself, identifying its strengths, weaknesses, potential and limitations, in order to improve it

¹ Editor’s Note: A previous version of this paper was published as: Van Aaken, R. and J. Watts. 2001. Impact analysis of the Zschortau Workshop and evaluation of the PAPA methodology. Pp. 57–68 in *Towards sustainable national genetic resources programmes—policy, planning and coordination issues. Proceedings of the workshop held from May 10–18, 2000 in Zschortau, Germany* (J.M.M. Engels, R. Vodouhe and M. Grum, eds.). International Plant Genetic Resources Institute, Rome, Italy.

for possible broader application in the near future.

Methodology

In the 1970s, the US Office of Personnel's Research and Development Division designed the Participant Action Planning Approach (PAPA) as a tool for training participants to record their plans for future action based on the training they had received. Since 1994 the International Service for National Agricultural Research (ISNAR) has used this approach, in adapted form, to evaluate the impact of an increasing part of its training work (Odame *et al.* 1999; ISNAR 1997).

In brief, the PAPA methodology asks the participants of a workshop or other training event to formulate, write down and leave behind with organizers a list of actions they plan to take upon their return home. At a designated time after the training (6 months in this case), workshop organizers contact participants to find out which actions have been carried out. The PAPA methodology has five specific steps:

Step 1: Planning for PAPA

Before the event, workshop organizers, IPGRI's impact assessment and evaluation specialist and workshop moderators discussed specific activities, modules and materials needed for the PAPA exercise. The necessary forms and other tools were prepared based on available ISNAR materials (ISNAR 1997).

Step 2: In-training activities

This step has two components. At the beginning of the workshop, the IPGRI evaluation specialist introduced the PAPA approach and action plan concept. Participants were asked to keep track, throughout the workshop, of new ideas they might want to try back at work. At the end of the workshop they were asked to finalize an action plan, that is, a list of new workshop-related activities for implementation. One copy was kept by the participant, the other by the organizers.

Step 3: Follow-up activities

Six months after the workshop, a questionnaire and accompanying letter, in French or English, were sent to all participants who had finalized an action plan. Each action point was checked to determine whether it had already been taken up and, if so, how, with what result, and what problems had been encountered. If a planned action had not been taken, the participant was asked why and whether it could still be initiated. Participants were also asked about other actions which, although not identified earlier, they had nevertheless attempted as a result of the workshop.

Given the difficulties of distributing the questionnaire by regular mail, e-mail and fax, a reminder was sent, where necessary, after about 8 months. A year after the workshop, but before final data analysis, telephone calls were made to participants whose responses had not yet been received.

Step 4: Analysis and conclusions

About a year after the workshop, responses were collected, compiled and analyzed. The underlying idea throughout the analysis was to identify any extraordinary activities undertaken by participants as a result of the training received. This potential impact was then organized into four categories (Odame *et al.* 1999), each reflecting a different level of impact:

Category 1: Individual participant impact

Category 2: Team impact (i.e., on a group of individuals in the organization)

Category 3: Organizational impact (i.e., on the organization as a whole)

Category 4: Supra-organizational impact (i.e. at national or subregional level, also referred

to as institutional impact).

The Zschortau workshop and its contents aimed to have an impact at the third and fourth levels. Further details on the method of analysis are given in the results section below, where the different elements of the questionnaire are presented.

Step 5: Report

As an integral part of the analysis of the PAPA findings of the Zschortau workshop, the present report would be distributed to the workshop participants, moderators and other persons and organizations concerned.

Results of impact analysis

Of the 23 participants, 18 completed an action plan on the final day of the workshop and were sent the follow-up questionnaire half a year later. Ten responses (56%) were finally received, which is considered a high response rate for mailed questionnaires (Odame *et al.* 1999). These responses, covering 41 action points (an average of four per respondent), form the basis of this evaluation.

Table 1. Action points and their rates of initiation/implementation

Action points (reformulated and standardized)	Initiated	Not initiated	Total
Create, legislate on or revive national PGR committee	4*	1	5
Organize PGR workshop or reflection day	1	4	5
Fund-raising and acquisition	3*	0	3
Debrief on Zschortau workshop	1	1	2
Develop PGR in university curriculum	2*	0	2
Training programmes (organization or participation)	2*	0	2
Intellectual property, legal status and documents	2*	0	2
Conservation programme (sorghum)	2	0	2
Create public awareness on PGR	1	1	2
Prepare list of genetic resources	1	0	1
Regional collaboration on PGR programme (onion)	1	0	1
Enactment of laws on PGR	1	0	1
Conservation and participatory selection <i>ex situ</i>	1	0	1
Participation of communities in <i>in situ</i> conservation	1*	0	1
Collaboration between (government) structures	0	1	1
Regional collaboration on WIEWS	1	0	1
Carry out PGR needs assessment	0	1	1
Monitor and coordinate subregional cooperation	1	0	1
Establish gene bank and arboreta	0	1	1
Link PGR conservation to its use	0	1	1
Publish red list of endangered species	0	1	1
Collaboration with IPGRI on action plan	1	0	1
Identify actors in the field of PGR	1	0	1
Develop and plan ideas for projects	1	0	1
Increase staff productivity	1*	0	1
Total	29	12	41

*Response not planned during workshop but reported afterwards.

Action points and rate of initiation/implementation

Table 1 shows the 41 individual action points proposed by the respondents and whether participants tried to put them into practice or were unable to initiate them. Seven of the initiated actions were not planned as such during the workshop but were reported during the follow-up survey as an impact of the workshop. The PAPA methodology specifically requests this information in the follow-up questionnaire.

Approximately 70% of the planned actions were taken up in the period between the workshop and the survey. This figure can be considered a key indicator in the evaluation of the performance or behaviour of the participants, level 3 in the Kirkpatrick model. Given the

constraints many of the participants faced when trying to implement their action points, the achieved overall rate represents a very acceptable performance.

Level of impact

The action points were grouped into the four impact categories mentioned earlier. The assignment of action points to categories is based on the judgement of the analyst. Information in the responses was often very limited, and some action points aimed for impact at various levels. In the latter case, the highest level of potential impact was decisive for the categorization. Table 2 presents the distribution of action items by level of impact. It also shows which items of each category were or were not initiated. For each category, examples of specific planned action points are also shown.

Table 2. Action points by level of impact and their rate of initiation

	Impact level	Examples of action points	Initiated	Not initiated	Total
Category 1	Individual impact	Participate in training programme Consolidation of research programme	2	0	2
Category 2	Team impact	Organize training programme Debrief on workshop	3	1	4
Category 3	Organizational impact	Plan and develop projects Organize internal PGR workshop Develop PGR in university curriculum Fund raising	8	3	11
Category 4	Supra-organizational impact	Create national PGR committee Organize broad PGR workshop Collaboration between government structures Various subregional collaborations Create public awareness on PGR Identification of all actors in field of PGR	16	8	24
Total			29	12	41

Of the proposed action points, 27% aimed to have an impact on the participant's organization and 59% were foreseen to have an even wider impact at the national or subregional level. This corresponds to the objectives and fields of attention of the workshop, concentrating on policy, planning and coordination issues in the management of national and subregional PGR structures. Most of the participants succeeded in keeping this broad perspective when drafting their action plans, rather than focussing on interventions with only an individual or team-level impact.

Overall, 71% of action points were initiated. The initiation rate for actions varied by impact category as follows: 100% of those aimed at having an impact on individuals, 75% of team actions, 73% of organizational actions, and 67% of supra-organizational impacts. This would indicate that it is easier to initiate an activity closer to home than one with a national or subregional scope of impact. Obstacles to implementation are discussed later in this section.

Overall impact

The impact figures, based on participants' own assessments, show that of the 29 action points they initiated only two had a negative impact. The rest had either a positive impact (11 items) or a still unknown/mixed impact (15 items). Impacts considered negative were the failure of a participant to gain support to attend a training programme and the failure to secure requested financial support. It should be noted, however, that these figures refer only to initial results of the concerned action points. For many of them, it was still too early to determine the final impact.

Impact on different levels of the system

In the questionnaire, participants were asked to describe the effects of actions on themselves, on others or on the organization as 'positive', 'negative' or 'mixed or not yet known'. The categories 'positive' and 'negative' describe actions whose impact, in the participants' view, has already been clear and unambiguous. Responses from many participants did not allow a clear distinction to be made between 'mixed' impacts (both positive and negative elements) and those impacts 'not yet known' (or not yet obvious); thus, those two types were combined into one category. Table 3 breaks down the participants' assessments according to the four categories of impact level.

Table 3. Impact of action points by category of impact level

		Action point impact			
		Positive	Mixed/ unknown	Negative	Total
Category 1	Individual impact	1	0	1	2
Category 2	Team impact	1	2	0	3
Category 3	Organizational impact	5	2	1	8
Category 4	Supra-organizational impact	5	11	0	16
Total		12	15	2	29

On the one hand, Table 2 suggests little difference in the difficulty involved in initiating actions with potential organizational impact versus those with supra-organizational impact. On the other hand, from Table 3 it appears that actions at the organizational level have a higher rate of positive impact than those at the supra-organizational level (5 of 8 versus 5 of 16 respectively). With the necessary caution imposed by the limited number of responses, it seems to be more difficult to achieve a clear-cut positive impact at national or subregional level than within one's own organization, as might be expected.

Furthermore, there does not appear to be any correlation between respondents' scope of authority or positions in the organizational hierarchy and the impact level at which their action points were aimed. Nor does there seem to be a correlation between their positions and the impact rate achieved.

Results achieved

Participants were asked to describe the results of the actions they undertook. The number of results differs from the number of action points because some respondents indicated that the action achieved more than one result. And in some cases the question was not answered by the respondent. The most frequently cited result was increased awareness about PGR and its importance. The second most cited result was increased cooperation among various stakeholders and collaborators. Table 4 summarizes their responses.

Table 4. Results achieved

Result	Frequency of response
Increased awareness	7
Increased cooperation	4
Action planning/priority setting	3
Increased motivation or enthusiasm among scientists	3
Funding proposal developed	3
Plant varieties adopted or distributed	2
Increased knowledge	1
Increased support for the research institution	1

How results were achieved

Respondents were asked how they implemented action items. The most frequently used method or approach was to convene a workshop or prepare a proposal or report. The next most important means was interaction with people on a personal level, either through telephone calls, letters or meetings. Table 5 shows the frequency of the various

means employed. Again, the numbers do not correspond to the actual number of action items because either the question was not answered or more than one means was used.

Table 5. Means of implementation employed

Means of implementation	Frequency of response
Workshop convened	7
Report or document prepared	7
One-on-one contact made	5
Research conducted	4
Curriculum or lesson plans developed	2
Media event carried out	1
Survey conducted	1
Memo sent	1

Problems during action point implementation

Participants were queried about problems they faced in carrying out their action points. They were also asked to comment on the reasons for any lack of follow-up on action points. Table 6 lists the constraints encountered.

Lack of funds and lack of suitable opportunities are the primary constraints cited by respondents for action points not implemented. Once action points are initiated, however, various other constraints such as lack of equipment and logistical means become as important as lack of funding and opportunity. However, many such constraints can be reduced to the main problem, namely lack of funds. This problem is discussed further in the conclusions section.

Table 6. Constraints cited in implementation of action points

Constraints	Action points implemented	Action points not implemented	Total
Funding	11	9	20
Logistics and equipment	8	0	8
No proper moment or opportunity	0	4	4
Time constraints	4	0	4
Lack of available information and documentation	2	1	3
Lack of teaching aids	3	0	3
Government incomprehension of PGR's importance	3	0	3
Ineffective organizational structures	0	2	2
Difficult communication and infrastructure	2	0	2
Staffing, training and other human resource development problems	2	0	2
Administrative delays	2	0	2
Large number of undefined actors in PGR	1	0	1
Political atmosphere	0	1	1
Rivalry between and within organizations	1	0	1
Unclear situation regarding intellectual rights	1	0	1
Total	40	17	57

Table 7. Constraints by level of impact

Constraint	Individual impact	Team impact	Organizational impact	Supra-organizational impact
Funding	2	1	7	10
Logistics and equipment	1	2	2	3

No proper moment or opportunity	0	1	1	2
Time constraints and availability	0	1	1	2
Lack of available information and documentation	0	1	2	0
Lack of teaching aids	0	0	3	0
Government incomprehension of PGR's importance	0	0	0	3
Ineffective organizational structures	0	0	0	2
Difficult communication and infrastructure	1	0	1	0
Staffing, training and other human resource development problems	1	0	0	1
Administrative delays	0	0	1	1
Large number of undefined actors in PGR	0	0	0	1
Political atmosphere	0	1	0	0
Rivalry between and within organizations	0	0	0	1
Unclear situation regarding intellectual rights	0	0	1	0

Table 7 presents constraints on implementation according to the four impact categories. For three categories, funding again emerges as the most frequently cited constraint. However, at the level of supra-organizational impact, various other constraints are clearly at work, as would be expected of actions involving others outside the organization.

Relevance of action points to workshop objectives and content

The authors reviewed how relevant each action point was to the workshop objectives and contents stated in the workshop programme, working on the assumption that only action points closely linked to these can be considered a good indication of the workshop's impact. Most actions were found to be highly relevant to the workshop objectives and content. Overall, then, the workshop could be judged as having had a positive impact in terms of objective achievement. Only 5 of 41 actions were not relevant at all and thus were not likely to have been a direct impact of the workshop. Table 8 shows the classification of action points into three relevance categories.

Table 8. Relevance of action points by category of impact level

		Relevance			Total
		High	Partial	None	
Category 1	Individual impact	0	0	1	1
Category 2	Team impact	1	2	1	4
Category 3	Organizational impact	6	4	1	11
Category 4	Supra-organizational impact	21	2	2	25
Total		28	8	5	41

Feelings on implementation of action points

Participants were also asked how they felt about what happened when they tried to implement points in their action plans. Twenty-five responses revealed positive feelings, and in four cases, feelings were mixed. None of the participants felt negative about what happened.

Continuation of action point implementation

Among the 29 action points initiated, there was only one instance in which a respondent indicated an unwillingness to continue with the action.

For the 11 planned actions that had not yet been taken up, all respondents said they believed the action could still take place if certain conditions were met and if the identified constraints were resolved. Moreover, all respondents were still interested in trying to implement these action points.

Conclusions

On the workshop results

It is evident that the workshop was greatly appreciated by the participants and taken very seriously by them. The large number of planned actions that have been carried out, or at least attempted, is a clear indication of the participants' commitment. Their own assessment is that results were achieved mostly in the areas of increased awareness and increased cooperation. Priority setting and action planning, the initiation of fund-raising, and increased motivation and enthusiasm among scientists were other important results cited by respondents.

Most of the action points were relevant to the workshop objectives and content. The one most frequently proposed related to the establishment or revival of national PGR committees or coordinating bodies. Public-awareness raising, conservation projects and training or education were also frequently proposed as action topics. Policy and law, regional networking, project planning and assessment of PGR were less frequently identified by participants as items for follow-up action. Given that the workshop was specifically aimed at making improvements in two of these areas—policy and regional networking—the survey results indicate possible weaknesses in how the workshop agenda addressed these topic areas. Table 9 shows the distribution of actions points by theme.

Table 9. Thematic groupings of action items

Theme	Number initiated	Not initiated	Total
National coordination	7	6	13
Public awareness	5	2	7
Conservation projects	3	2	5
Training or education	4	0	4
Policy and laws	3	0	3
Regional networking	3	0	3
Project planning	2	0	2
Assessment of PGR	1	2	3
Other	1	1	2
Total	29	12	41

According to the judgement of the analyst, a small number of action points (5 of 41) had little or no relevance to the workshop objectives or contents. This situation can be avoided in the future by ensuring that workshops have well-defined, action-oriented objectives and that the workshop content is well targeted towards achieving those objectives. The workshop participants were a diverse group, consisting of scientists, ministerial policy-makers and national and regional PGR coordinators. This was probably a contributing factor in those cases where actions did not relate well to workshop objectives, since several participants were not in jobs that enabled them to have a strong influence on national programme development. Better-targeted selection of participants might, for future workshops, reduce even more the number of actions not relevant to training objectives.

Many action items did not materialize due to unforeseen constraints, mainly lack of funding. In the future, constraints on the implementation of action points should be

discussed among participants up front and means of overcoming foreseen constraints integrated into the action plan itself.

On the PAPA methodology and its further use

Despite certain limitations and problems related to the mailing and reception of the questionnaires, the results and experiences gained with this first PAPA evaluation at IPGRI are very positive and promising. PAPA has proven to be a useful and effective tool in evaluating the impact of training sessions and workshops. A lot has been learned and this can be used to improve the method for possible future use.

Besides being an effective evaluation tool, the PAPA method has an important positive secondary effect that should not be underestimated. By preparing action-oriented plans and putting them on paper, participants are stimulated to analyze their daily activities against the framework of a specific training event or workshop. They are encouraged to think about possible interventions and behavioural changes, to discuss them with colleagues, and to take back a list of explicit points of action that might otherwise not have emerged (Pretty *et al.* 1995).

The personal action plan approach has a strong element of self-assessment. This participatory aspect has the important advantage that every conclusion drawn or action plan made is the participant's own. The acceptance and internalization of conclusions from self-assessments, and the follow-up of activities subsequently planned through strongly-participatory action-planning methods, have proven to be superior to those resulting from standard external evaluation and planning methods (Pretty *et al.* 1995; Lusthaus *et al.* 1999).

The PAPA methodology is definitely a proper and suitable tool for future application within IPGRI. But its implications and limitations should not be taken lightly. Only if certain questions can be answered in the affirmative and important preconditions met should the PAPA methodology be used in a training event or workshop. For example:

- Are there enough human resources and time to prepare, perform, follow up and analyze the PAPA exercise? The follow-up and analysis are particularly elaborate and time consuming. They require planning to ensure that adequate resources are available.
- Are the workshop objectives, contents, methodology and participants suitable for PAPA and *vice versa*? As PAPA measures behavioural changes and how well certain concepts are put into practice, it seems especially appropriate for training that targets the development or transfer of precise practices and their subsequent implementation. Not every workshop aims to do this. In general, then, the method might be somewhat easier to apply to more technical or skill-development oriented training events that clearly aim at a behavioural change than to workshops where expectations for follow-up are less well defined. In the latter case, participants will have a hard time coming up with explicit and relevant action points, and the organizer will have an even much harder time analyzing the follow-up data.
- Can and will the PAPA exercise be well embedded in the workshop or training programme? It demands significant time for discussions and individual work, as well as daily attention and feedback from the moderator. Moreover, if behavioural change is sought, this should be clearly reflected in training objectives. In other words, the action planning and follow-up work should be explicitly stated in the workshop objectives and be addressed at various points in the agenda.
- Is the PAPA method what you really need? When preparing for a training event, determine whether your expectations and objectives can be fully met by the PAPA method. But also consider whether the method might be too broad or detailed for the intended application. For example, if you simply want to evaluate a package of training materials to improve it for next year's training, an evaluation of the participants' reactions and suggestions plus a comparative entry/exit level test will be

far more appropriate and effective. Some good handbooks and reference materials on participatory action planning and training evaluation (Pretty *et al.* 1995; Donaldson and Scannel 1986; Williams *et al.* 1994) can help with this.

- How about costs and benefits? As already noted, both follow-up and analysis of questionnaires are time consuming. Very small groups of trainees may not justify the required expenditure of time. And if there is a risk that the training event topic will be irrelevant in a year or taken off the agenda, then any plan to invest in a PAPA exercise should be seriously reconsidered. The same caution applies if the analysis is likely to be seen as an obligation, or if the evaluation report is destined to do nothing other than fill up desk drawers and shelf space.

A key question not answered by the PAPA methodology is this: to what extent are the implementation of action points and the impact on various levels and actors the specific and demonstrable result of the Zschortau workshop. In other words, the PAPA analysis does not clearly reveal the workshop's contribution toward any change. Many action points cited are countries' responsibilities according to the Global Plan of Action on the Conservation and Sustainable Utilisation of Plant Genetic Resources for Food and Agriculture, and the Leipzig Declaration affirming government-level commitment to implementing the Plan in the context of national efforts to strengthen world food security (FAO 1996). Thus, it is extremely difficult to distinguish between activities that would have taken place anyway and the specific contributions of the workshop. This issue may be especially relevant to those actions not planned during the workshop but added later on during the survey and stated to be a result of the training.

Kirkpatrick (1998) offers some suggestions for evaluating training results or impacts that were not included in the PAPA approach as it was applied to the Zschortau workshop. If more substantial proof is needed, impact level training evaluation should include:

- use of a control group
- measurement of both before and after situations
- repeated measurement at appropriate times.

However, Kirkpatrick (1998) and others (Mayne 1999; Horton and Mackay 1999) remind us of three points related to impact assessment that need to be considered before undertaking this kind of analysis. First, it is important to consider the costs and benefits of the evaluation and to recognize that sometimes it is more practical to be satisfied with evidence of impact rather than to try to prove impact beyond a shadow of a doubt. Second, in some cases it may be impossible, due to the myriad factors involved, to prove the extent to which a training event contributes to an outcome—even if the evaluation study is carefully designed. Finally, the claiming of impact by one group may be seen as usurping the credit due to other collaborators, in this case the workshop participants who, undeniably, are responsible for most of the impact to date.

References

- DSE. 2000. Towards sustainable national plant genetic resource programmes: policy, planning and coordination issues (workshop report). German Foundation for International Development and the International Plant Genetic Resources Institute, Rome, Italy.
- Donaldson, L. and E.E. Scannell. 1986. Human resource development. The new trainer's guide (2nd edn). Addison-Wesley Publications, Reading, MA.
- Engels, J.M.M., R. Vodouhe and M. Grum (eds.). 2000. Towards sustainable national genetic resources programmes—policy, planning and coordination issues. Proceedings of the workshop held from May 10–18, 2000 in Zschortau, Germany. International Plant Genetic Resources Institute, Rome, Italy.
- FAO. 1996. The conservation and sustainable utilization of plant genetic resources for food and agriculture—the global plan of action & the state of the world report. Food and Agriculture Organization, Rome, Italy.
- Horton, D. and R. Mackay. 1999. Evaluation in developing countries: an introduction. *Knowledge*,

- Technology and Policy* 11(4): 5–12.
- ISNAR. 1997. The Participant Action Plan Approach (PAPA): a method to evaluate and assess the impact of training. ISNAR Training Unit, The Hague, The Netherlands.
- Kirkpatrick, D.L. 1998. Evaluating training programs: the four levels (2nd edn). Berrett-Koehler Publishers, Inc., San Francisco, CA.
- Lusthaus, C., M.H. Adrien, G. Anderson and F. Carden. 1999. Enhancing organizational performance: a toolbox for self-assessment. International Development Research Centre, Ottawa, Canada.
- Mayne, J. 1999. Addressing attribution through contribution analysis: using performance measures sensibly. Discussion paper prepared for the Office of the Auditor General of Canada, Ottawa, Canada.
- Odame, H.H., Z.P. França and R.K. Obura. 1999. Impact evaluation of training: a participant based approach. Paper presented to the African Evaluation Association Annual Meeting, September 13–17, 1999, in Nairobi, Kenya.
- Pretty, J.N., I. Guijt, J. Thompson and I. Scoones. 1995. Participatory learning & action; a trainer's guide. IIED Participatory Methodology Series. International Institute for Environment and Development, London, UK.
- UNDP. 1988. Guide to evaluating training. Asia and Pacific Programme for Development Training and Communication Planning, RB#500.
- Watts, J.L. 2001. Evaluating the Zschortau Workshop: process and preliminary findings. Pp. 78–85 in *Towards sustainable national genetic resources programmes—policy, planning and coordination issues*. Proceedings of the workshop held from May 10–18, 2000 in Zschortau, Germany (J.M.M. Engels, R. Vodouhe and M. Grum, eds.). International Plant Genetic Resources Institute, Rome, Italy.
- Williams, S., J. Seed and A. Mwau. 1994. The Oxfam gender training manual. Oxfam, Oxford, UK.