
**Participatory Technology Development Working Paper 5**

# PARTICIPATORY TECHNOLOGY DEVELOPMENT IN CAMEROON: THE ROUTE AND MILESTONE IN THE PROCESS OF ITS INSTITUTIONALISATIOIN

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## SUMMARY

The four-year Phase II of the action-research programme "Indigenous Soil and Water Conservation in Africa (ISWC II) started in December 1996 and operates in the French-speaking countries Tunisia, Burkina Faso and Cameroon and in the English-speaking countries Ethiopia, Uganda, Tanzania, and Zimbabwe. It had received a budget-neutral extension from the funders (Netherlands Development Aid, DGIS) for the entire 2001.

This paper is written by Paul Tchawa[1], Félix Nkapemin[2] and Jean-Marie Diop[3] and is based on the Participatory Technology Development (PTD) experiences with the ISWC II project in Cameroon. The ISWC II project aimed to improve the effectiveness of both indigenous and modern Soil and Water Conservation (SWC) practices through a process of joint experimentation involving farmers, scientists and development agents.
The authors develop the informal and formal strategies used and their impacts in the process of the institutionalisation of the PTD approach in Cameroon.

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# 1. THE CONTEXT AND THE ACTORS

This paper is based on the Participatory Technology Development (PTD) experiences with the Indigenous Soil and Water Conservation Project, Phase II (ISWC II) in Cameroon. The ISWC II project aimed to improve the effectiveness of both indigenous and modern Soil and Water Conservation practices through a process of joint experimentation involving farmers, scientists and development agents.

## 1.1 An institutional framework that requires insertion of a PTD approach

The principles of Participatory Technology Development (PTD), which are related to identifying farmers' problems and seeking solutions to them, fit well into with the current institutional context in Cameroon. In fact, the National Programme for Management of the Environment (PNGE) states that: "The extension of appropriate farming techniques requires first the identification of the existing farming techniques in order to integrate the farmers' know-how. During a second step, the adaptability of those techniques will be assessed, and than the most appropriate techniques will be promoted."

PTD can play an important role in the systems of agricultural production, research and extension in Cameroon, because it starts with local knowledge and focuses on small-scale farmers. Referring to the food situation in Cameroon, Varlet (1993) wrote: "Analysis of the sources of available food shows an increase in imports (from 6 to 17%) and in production from large agro-industrial projects (from 7 to 15%), whereas the contribution of the traditional sector to food availability has decreased greatly (from 86 to 67%)." This points to the need for initiatives to boost food production by small-scale farmers. In response, international donors have tried to involve State organisations in their strategy (e.g. 4238 employees in the Rural Development Project in Western Province, with a budget of almost 24 billion FCFA (*ca* 32 million US dollars), whereas international non-governmental organisations (NGOs) have focused on organising local communities to tackle their problems. In general, evaluation of the large-scale projects has revealed that the results are disappointing compared to the investments made.

Looking back at the history of agricultural development endeavours in Cameroon, two important observations can be made:

- In the face of many failures over the years, development approaches have evolved considerably in a context where the State has made it clear that it lacks the means to support rural development.
- Despite the existence of national expertise and technical assistance, answers have not been found to the problems related to soil and water conservation. The core of this problem is to be sought not in the level of qualification of the actors but rather in the approach and tools they have been using. Analysis reveals that:
    - Past strategies did not always take farmers' knowledge into account;
    - There was little effective participation of farmers in diagnosing problems and seeking solutions;
    - The different actors trying to contribute to finding solutions have often been working in isolation from each other;
    - The size of the projects and the scale of intervention generally did not favour the real participation of farmers.

Today, new conducive elements for greater institutional openness have become apparent. For instance, the current government extension policy is to seek partners for collaboration in

development. The first indicators of this change to more favourable conditions for institutionalising a participatory approach to research and development is the shift in name from PNVA (National Programme for Agricultural Extension) to PNVRA (National Programme for Agricultural Extension and Research) and from IRA (Institute of Agronomic Research) to IRAD (Institute of Agronomic Research and Development). These changes indicate a growing willingness to link research and extension.

## 1.2 The setting of the initial PTD work in Cameroon

The farmer-innovation approach to PTD taken by the Indigenous Soil and Water Conservation (ISWC) programme is based on the assumption that local innovators have already made their own assessment of local problems and opportunities, even without being involved in PRA (Participatory Rural Appraisal) or similar exercises. Their innovations show what is possible to achieve when local resources and local creativity are combined. Their innovations are based on and lead to further informal experimentation. The local innovations and experiments indicate the type of questions that farmers are trying to answer in order to improve their livelihoods. Formal research and extension staff is encouraged by the ISWC programme to recognise these local innovations and to enter into PTD based on the questions arising out of these innovations.

The PTD work in Cameroon started three years ago in the "grassfields" of the Western highlands, one of the main areas of agro-pastoral production in the country. Initial work was done in the village of Babanki in the southeast part of the grassfields.

One farmer in Babanki village, when faced with a serious decline in soil fertility for cropping, started to develop a system of improving soil fertility by inviting graziers to keep their animals on his fields overnight. The farmer noticed the advantages of the technique and started to think of improving it. Now many farmers in Babanki have followed the farmer innovator's practice. This innovation, known as the "night-paddock manuring system", was new in the village (although known elsewhere) and was discovered by partners in the ISWC-Cameroon programme, who then entered into a process of PTD to help farmers find answers to questions they wanted to explore in connection with the innovation: namely, the most efficient way of paddocking livestock for manuring purposes in terms of both the number of animals and the length of time they should be kept in the paddocks. The crop planted on the manured plots is a *Morella* species locally called "hockberry" or "*dianma-dianma*", the leaves of which are used as a vegetable and are in high demand on town and city markets.

Several socio-economic factors facilitated the process of introducing a PTD approach in the Babanki area of North-West Province. These included:

- the strong tendency in the area for voluntary association and community development (often said to be a heritage from the British colonial times);
- the traditional institutional framework that promotes a spirit of agreement and mutual respect;
- a high coverage by rural development organizations.

## 1.3 Actors, their motivations and roles in the PTD process

One of the first steps in the ISWC-Cameroon programme consisted of identifying farmer innovations and farmer innovators. It was during this step, in 1998, that the partner organisations working with ISWC-Cameroon discovered the local innovation of night-paddock manuring and found it to be very relevant for wider application. Farmers were attracted to the ISWC programme because they realised that their priorities, knowledge and

skills were being taken account and because the programme's approach differed greatly from the external interventions they had experienced previously.

The motivation of the scientists was quite different. The country was in an economic crisis, and funds for research had been drastically reduced. Scientists who were approached by ISWC-Cameroon to take part in the programme recognised that this offered them an opportunity to escape inactivity, to embark on new paths in research and thus publication, and to apply their knowledge and skills to addressing farmers' priorities in a concrete way.

The NGOs regarded the PTD approach as challenging and very relevant for their work. They were attracted to an approach rooted in farmer innovation. They also expected that participation in the programme, particularly in training activities, would strengthen staff capacities and increase their renown and credibility in the field. This aspect of their motivation increased still further when they saw the interest of the mass media in covering the PTD activities.

Table 1 gives an overview of the main partners involved in the PTD process, their motivations and their roles.

**Table 1: Motivations and roles of partners in the PTD process in Cameroon**

| Partners | Motivations | Roles |
|---|---|---|
| KEKUFAG ( Kedjom Ketingoh Union Farmers Group) in Babanki | Appreciation of their knowledge; increase in yields | Mobilisation of farmers, monitoring and record keeping, spreading the approach |
| Kedjom Ketingoh Chiefdom | Village development | Institutional guarantee at local level |
| CIPCRE | Renown, strengthening the interventional capacity of its staff | Creating links between farmers and researchers, exchange visits |
| University of Dschang | New scope for research; possibility to publication | Proposing alternatives (add-on options) to farmers; analysis and documentation |
| IRAD Bambui | Escaping from inactivity; possibility to publish | Proposing alternatives (add-on options) to farmers; analysis and documentation |
| ISWC-Cameroon | Introducing the PTD approach that was working well elsewhere | Provision of facilitation, training and coaching additional means |

## 2. THE METHODOLOGIES OF INSTITUTIONALISING PTD IN CAMEROON

The institutionalisation of PTD in Cameroon was based from the start on a strategy of producing "success stories". It was only when concrete results were available to be displayed that ISWC-Cameroon approached the National Agricultural Extension and Research Project (PNVRA, the government body responsible for extension throughout the country). Therefore, contact with PNVRA did not commence until the second year of the ISWC programme. The PTD process through the farmer innovation approach was started with NGOs and farmer organisations.
In Babanki village for instance, the farmed-led experimentation (including evaluations sessions) with the innovation 'night-paddock manuring system' was used as an entry point for institutionalising PTD in government research and extension structures. The farmer-led experimentation was preceded by:

- Surveys, interviews and stakeholders meetings to analyse the innovations and to assess the perceptions of stakeholders;
- PTD training and coaching for researchers and extensionists.

Other methods used included:

- Engagement in participatory observation in meetings and in fields;
- Networking and lobbying with like-minded persons and key players in relevant institutions and structures to produce concrete results in the fields and then involve policy-makers in dialogue about the results;
- Regularly and annual meetings, workshops and conferences, exchange visits, use of mass media, visits to local donors, support to students, soliciting support to traditional leaders, exposure visits to islands of success and joint documentation and analysis of success stories.

These above activities can be split into informal and formal strategies.

### 2.1 The informal strategy

It is debatable whether it is favourable or not that the agency trying to promote a PTD approach in Cameroon was not a government structure. A "National Coordinator" had been selected by the international programme coordination (a consortium of Dutch and British organisations) and was given the responsibility to launch the programme in collaboration with both NGO and government research and extension services. In a country like Cameroon, where hierarchical, top-down approaches are still quite strong, one can imagine the difficulties faced by one individual seeking to work with national research and extension structures. This explains why priority was given initially to an informal approach and why concrete results were sought in the field before approaching national policymakers.

The ISWC-Cameroon programme was hosted by SNV (Netherlands Services Cooperation). The image and good reputation of SNV in Cameroon was an asset for the programme. The Memorandum of Understanding for collaboration with SNV gave the ISWC-Cameroon coordinator considerable flexibility and room to manoeuvre, as well as important moral support, in planning and implementing the PTD activities. This was based on the conviction that success in building up the programme in Cameroon would depend primarily on the involvement of like-minded persons rather than being a matter of institutional structures, at least initially.

### 2.1.1 The 'night-paddock manuring system' as an entry point to institutionalising PTD

The ISWC-Cameroon team quickly realised that farmer-led experimentation with the 'night-paddock manuring system' had several assets:

- The innovation had stimulated the development of follow-on innovations (see Tchawa 2000) and, in the process, had aroused the interest of a large number of farmers;
- The innovation was contributing to resolving a major problem in the region (conflicts between crop farmers and graziers) and, for this reason, had aroused the interest of local and regional administrators and policymakers;
- The Africa 2000 programme supported by a major donor (United Nations Development Programme, UNDP) had recognised the relevance of this innovation and was keen to promote its application elsewhere in the country;
- Farmers who had been exposed to the innovation during exchange visits were quick to apply it in their own villages;
- Soil fertility experiments with this system had led to rapid results (within nine months).

It was therefore felt that there would be considerable advantages in using the farmer-led experiments with the 'night-paddock manuring system' as an inspiring example of PTD. Nevertheless, it was necessary to develop strategies to reinforce the impact on the key organisations involved: SNV, IRAD and PNVRA.

### 2.1.2 Strategic approaches to key organisations

**SNV**. One participant invited to the PTD training in Bamenda (Diop 1998) was a technical assistant in agriculture working with an SNV-funded project in Ngie (North-West Cameroon). She found the PTD training to be very relevant for issues related to natural resource management and decided to put the PTD approach on the agenda of the annual meeting of SNV. She made people higher up in the organisation aware of the approach and wrote an article entitled "Beyond appraisals: Participatory Technology Development" for the internal newsletter of SNV. She argued that: "The principles of PTD are highly relevant for the SNV policy, and training on PTD may well improve the functioning of staff involved in agricultural development " (Pinners 1998).

**IRAD.** A similar approach was taken with IRAD. Initially, people at IRAD headquarters in Yaoundé showed little interest in the PTD approach. An approach was made towards an open-minded animal scientist working in the IRAD field research station in Bambui (near an area where many farmer innovators and innovations had been identified) and opportunity was sought to interest him in the PTD approach. A visit to a site of night-paddock manuring convinced him of the relevance of the innovation and of the farmer-innovator approach for developing locally appropriate technologies. This researcher then played the role of contact person with the IRAD research station of Bambui. Two researchers from this station took part in several PTD training sessions and, attracted by interesting research questions in their own disciplines, redesigned their research around the night-paddock manuring system.

**PNVRA.** The main objective of PNVRA is similar to that of ISWC programme: the diffusion of appropriate and efficient technologies to farmers. The ISWC experiences were used as examples to approach PNVRA in different ways:

- Identification of a contact person from PNVRA who was open-minded about participatory approaches in general and PTD in particular. This person explained the importance of the PTD process to his extension colleagues.
- Invitation of the contact person to the ISWC Francophone Regional Workshop on Farmer Innovation.

- At the regional workshop, in the presence of the PNVRA contact person, French-speaking partners in the ISWC programme operating elsewhere in Africa gave convincing testimonies about the relevance of the PTD approach for their research and extension activities.
- Advocacy about PTD was made throughout Cameroon by Dr Antoine Mvondo Ze, a well-known professor of agronomy at the University of Dschang; he arranged that ISWC-Cameroon be presented to policymakers in the Ministry of Agriculture (MoA); thereafter, many MoA policymakers were invited regularly as official guests at key workshops of ISWC.

## 2.2 The formal strategy

The above-mentioned interaction with PNVRA gradually moved into a more formal phase with relevant milestones.

### 2.2.1 The PTD training workshop for the PNVRA extension staff

Before the PTD training, the terms of references were formulated and the responsibilities of PNVRA and ISWC-Cameroon were shared (also in financial terms). The main training objectives were:

- to present the PTD methodology in theory and field practice;
- to share the extension experiences of PNVRA;
- to seek possibilities to integrate the PTD methodology into the PNVRA approach.

The training workshop in Bamenda was a milestone in the formal collaboration between PNVRA and ISWC-Cameroon. The workshop was prepared, funded and facilitated by both partners. During the field study, the workshop participants had the opportunity to discover and assess the strategies of development and the spread of the indigenous technologies identified.

### 2.2.2 Participation of PNVRA coordinator in ISWC Annual Meeting in Tunisia

The invitation of PNVRA to the ISWC Annual Meeting was highly strategic. It was the time for defining the scope of the next third phase of the programme and for specifying the expected roles of PNVRA within it. Two main decisions pertaining to institutionalisation of PTD were made at the Tunisia meeting:

- The MoA will be the implementing agency in the next phase of the programme and the functional responsibility will be given to PNVRA;
- The national proposal for the next phase will be coordinated jointly by PNVRA and ISWC-Cameroon.

The PNVRA coordinator's mission report to the MoA lauded the PTD approach and the collaboration between PNVRA and ISWC-Cameroon. The key steps towards institutionalising the PTD approach within the national extension service are shown in Figure 1.

### 2.2.3 Other activities aimed at institutionalising PTD

Other activities carried out with the aim of institutionalising PTD, above all in the government extension service, include:

- PRA and PTD training and implementing the farmer-led experiments;
- Workshops, exchange visits, visits to local donors, work meetings, conferences etc
- Use of mass media (radio, television, newsletters, posters etc)
- Organisation of the Francophone Regional Workshop in Cameroon
- Soliciting support from traditional leaders

- Providing support to students preparing their theses with ISWC-Cameroon.

**PRA and PTD training.** Staff and partners of ISWC-Cameroon participated in the PTD training sessions organised by the programme. The partners included both researchers and extensionists. In addition, other participants from mainstream structures and NGOs were given the opportunity to attend. These people were chosen because they were open-minded about participatory approaches or because of the expected positive role they or their institutions could play in promoting PTD methodology and institutionalising the PTD process. The PRA and PTD training proved to be a valuable tool for creating a paradigm shift in the attitudes of the participants. The PRA and PTD trainings always ended with a joint planning on PTD activities and was followed up by contacts with the trainees in their organisations.

**Contacts with international organisations.** For lobbying purposes, visits were made to international organisations and major NGOs. The UNDP for instance showed an encouraging openness toward the farmer-innovator approach to PTD.

**Use of mass media.** Effective use has been made of mass media in promoting PTD. For more than a year, a series of 30 radio broadcasts was facilitated in both French and English (ten minutes each) on national radio. These include interviews with farmer innovators and coverage of ISWC workshops and exchange visits. In addition a bilingual (French/English) newsletter was produced *('Paysan Innovateur'/Peasant Innovator)* and both versions were widely distributed in the country. The ISWC project also contributed to the national distribution of both the English and French issues of the international *ILEIA Newsletter* on Grassroots Innovations / "Innovations Paysannes", which included an article on the Cameroon experience. The rural radio stations were also used for promoting PTD in local languages.

**The Francophone Regional Workshop.** The main objective of the Francophone Regional Workshop on Farmer Innovation (Tchawa & Diop 2000), was to permit exchange of experiences between the three French-speaking countries involved in the ISWC programme (Burkina Faso, Tunisia, Cameroon). The fact that ISWC-Cameroon organised this regional workshop offered a good opportunity to show national policymakers the importance of farmer innovation for rural development. During the workshop, several farmers set up displays about their innovations and explained them to the participants, including policymakers and the media. This market of local innovations gave a big boost to the farmer-innovation approach to PTD.

**Soliciting support from traditional leaders.** Solid relations had been built with traditional leaders who, in return, give appreciable support to the project. For instance, the Chief of Babanki gave logistical support to organising the planning of experiments on the night-paddock manuring system and mobilising the whole village to make a huge ceremony for participants in the Francophone Regional Workshop. These relations are significant, especially in view of the current policy of the Government of Cameroon to put responsibility for development activities into the hands of rural communities.

**Giving support to students.** The support given to university students preparing their theses with the programme has also been important for promoting PTD. Their lecturers and ISWC-Cameroon supervised four students' theses jointly. This is the first small step toward integrating the PTD approach into the curricula of educational organisations and services.

**Monitoring and improvement in the approach.** Farmers, the ISWC field agent and NGO staff members monitored the farmer-led experiments in Babanki and the PTD approach itself. During their evaluation sessions, research scientists generally joined them. This process has played an important role in the institutionalisation of PTD. Firstly, the involvement of the scientists in assessing the experiments helped to convince them about the approach, and

some of them are now including it in their research methodology. One scientist in Bambui for instance is seeking to base his doctoral thesis on the participatory research on night-paddock manuring. Secondly, the monitoring and evaluation reports were made available to PNVRA staff and convinced some of them to include farmers' innovations in the extension programme. Thirdly, the farmers who keep records in their notebooks usually show these when staff from extension headquarters come to visit them; this makes extension managers aware of farmers' capacities to implement and record experiments. Also the reports of the ISWC-Cameroon programme include analyses of and comments on the farmers' records and indicate the efficiency of some of the locally improved technologies.

The participatory assessment of the PTD process revealed some difficulties encountered in the approach, and improvements were made. Some of the difficulties and solutions are shown in Table 2. For example, one problem was the feeling of farmer experimenters that the community was marginalizing them. During a field visit, the experimenters reported that some members of their Union (KEKUFAG) had complained that only the innovators (experimenters) were benefiting from the PTD process: the innovators had received materials for the experiments and were keeping the knowledge for themselves. The experimenting farmers did not feel at ease and asked the Coordinator to organise a meeting of experimenters and KEKUFAG representatives in order to clarify the situation. During this meeting, the misunderstanding could be explained: the experimenting farmers and NGO staff had not invited some people from the Union to take part in the different stages of implementing the PTD in the field. It was decided that, in regular village meetings, the experimenting farmers and ISWC partners would inform the Union about the evolution of the PTD work in Babanki. The President of the Union then said that the whole village trusted their experimenters, because these had been chosen openly in the presence of the Union.

**Table 2: Difficulties encountered and improvements made in PTD experiments**

| Difficulty | Improvement | Comments |
|---|---|---|
| Farmers do not understand their role in the experiments | Going back a step in the iterative PTD process<br>Using resource flow maps | This was done with the support of the external adviser to ISWC-Cameroon |
| Farmer experimenters complain that they feel marginalised by their community | Information meetings in the village | Farmer experimenters were the first to notice that their involvement in PTD experiments was leading to their marginalisation |
| Researchers complain that the PTD type of research does not favour their professional advancement | Meeting with researchers and display of journals, newsletters etc in which PTD findings can be published | |
| Lack of availability (due to overwork) of field workers in partner NGOs | Recruitment of an ISWC field agent for monitoring in the field and dissemination of the information | Farmers particularly appreciated this initiative, as it led to better monitoring and circulation of information |
| The 'empowerment' of farmers in the PTD process leads to distrust on the part of certain NGOs | Organisation of meetings for clarification and discussions about the creation of farmer- innovator networks | Farmers explained that some NGOs insist on being the 'obligatory path' between farmers and outsiders; they claim that they know their needs and can express them without an intermediary. |

## 3. THE IMPACT OF THE STRATEGIES TO INSTITUTIONALISE PTD

The impact of the strategies to institutionalise PTD within government agencies and NGOs in Cameroon can be seen at two levels:

- in Babanki, where the experiments on night-paddock manuring are being carried out;
- at national level.

### 3.1 The impact of the PTD process in Babanki

The night-paddock manuring system has brought great benefits for both the crop farmers and the graziers. The crop farmers have built up good relationships with the graziers. Doctoral research has been started on conflicts between graziers and crop farmers. Initial data reveal that, particularly in Tubah Subdivision, there has been a marked decrease in frequency of land dispute. Positive changes could be also seen during the exchange visit during which crop farmers and graziers in Babanki joined forces to welcome visiting crop farmers and graziers from Mbiame. The graziers of Babanki explained to their colleagues from Mbiame that it is possible to live in peace with crop farmers. When Babanki farmers ask graziers to provide cattle to manure the land, the latter are ready to do so and the farmers pay the graziers an acceptable fee for this service. These statements and this behaviour are evidence that farmer-grazier relations in Babanki are now better improved.
The community of Babanki gives recognition to the farmer experimenters in their midst. Look-and-learn visits for farmers from outside the community are organised regularly at the sites of farmer-led experimentation. The farmer experimenters are the experts who explain the techniques to the visitors. Recently, two farmers involved in the night-paddock manuring experiments in Babanki were named as local farmer trainers by the SNV-funded project at Ngie, which wants to scale up the innovation. The farmers are paid for their services through a contract with CIPCRE.

Because the results of the PTD experiments are bringing answers to the problems raised by the farmers at the beginning of the process, the farmers' confidence is increasing. The innovation is spreading quickly, as was documented in a student's thesis completed in 2001. The main reason why the irrigation network in Babanki has been extended is because farmers in the newly connected area want to practise night-paddock manuring for dry-season production of *Morella*. The farmers involved feel that the programme has improved their capacity to experiment and, thus, to innovate. Also their self-help capacity appears to have been stimulated: the farmers are mobilising themselves to reorganise the marketing of *Morella* leaves now that production have been boosted by the night-paddock manuring system. With the support of wealthy people from Babanki living in the capital city, Yaoundé, the farmer innovators have set up an association for the "fair trade" of *Morella*. They claim that the middle-women were taking an unduly large margin for their services; the innovators want to control the marketing themselves. ISWC-Cameroon supported this initiative and now Babanki farmers send 20 bags of *Morella* to Yaoundé twice a week in the growing season.

### 3.2 The impact at national level

The creation of networks of farmer innovators is a sign that farmers are assuming ownership of the PTD process. So far three farmer innovator networks have been formed.

Farmers formulated their first ideas for innovator networks during workshops and field visits. The farmers became aware that – in order to sustain the approach – they needed to organise themselves into structures for sharing ideas, defending their common interests and

organising joint sale of their products. They asked ISWC-Cameroon to facilitate the process of building up the networks. This was done in collaboration with official structures.

The programme started in Haut-Nkam by asking some key farmers to seek other innovators in their area and to invite them to a first meeting. The farmers set up an Executive Committee and gave it the task of continuing discussions with other farmers in order to propose rules (statutes). A two-day workshop was organised and during which some cases of networks were presented. Farmers discussed these examples and decided on the form of organisation they wanted. After this workshop, further functioning of the network was supported by contributions from the farmers themselves. The first activity of the network was an exchange visit among the members in order to discuss their different innovations in the field. They then started to organise themselves to collect and to sell their products. Later, the members contacted the local administration in order to legalise their network. During monthly meetings, the network discusses technologies, marketing, input availability, new innovators, training needs, contacts with NGOs and possible joint initiatives.

The network in North-West Province was formed in a similar way. Then the farmers in Bamboutos Province followed the example of these two other networks. Thus, the innovator networks were created as a result of the growing self-confidence and spirit of self-help among the farmers involved in the PTD process.

Direct contacts have been established between the three networks of farmer innovators, and representatives from each network will be invited to the workshop to formulate the next phase of the farmer-innovation programme.

The dynamism of the farmer-innovator networks is evident in their increasing initiatives to negotiate collaboration with research scientists, instead of waiting (as they used to do) for scientists to find solutions and bring them to the farmers. Members of the farmer-innovator networks also refer to the buffer role that they can play in countering the top-down approach that is still taken by many development NGOs. In general, the innovator networks want to choose themselves the NGO with which they will collaborate, rather than being chosen as collaborators by an NGO; they explained that some NGOs use farmers simply to justify the NGO projects.

SNV has not yet integrated the PTD approach into its own strategy for rural development. However, as mentioned above, the SNV-funded project at Ngie in North-West Cameroon has asked two farmer innovators collaborating with ISWC-Cameroon to facilitate training sessions for farmers in the Ngie area. This is a sign that SNV recognises the strength of the PTD approach in building farmers' capacities. At a later stage, after SNV has assessed the involvement of the farmer innovators in the Ngie project, there is a good chance that the decision-makers in SNV will propose the approach to other projects of rural development or natural resource management, such as the one in Mayao Oulo (Far North).

The National Extension Service PNVRA has recognised the relevance of including indigenous innovations in the "basket" of technologies offered to farmers. The PNVRA and ISWC-Cameroon made the outcome of the training in Bamenda known to all regional directors of PNVRA. Later on, after the mid-term review of PNVRA, the regional directors of PNVRA were officially requested to reorient their strategies by giving more attention to local innovations and including them in the extension programme.

This recognition given to farmer innovators, which started during the PTD training for PNVRA staff, represents a major change in PNVRA policy with respect to the type of technologies to extend. The formal research system is no longer considered to be the sole source of information for extension. Farmer innovation is now considered to be another relevant source of appropriate technologies.

After the PTD training for PNVRA staff, terms of reference were drawn up for collaboration between PNVRA and ISWC-Cameroon. The PNVRA coordinator assigned national-level working groups on extension content and research-extension linkages to include indigenous innovations among the technologies to be disseminated. The assignment entails the following steps:

1. Make an overview of useful indigenous solutions identified by the ISWC-Cameroon programme.
2. Select relevant indigenous solutions in the process of deepening the problem diagnosis planned for 2001 by PNVRA.
3. Identify the farmers who developed these indigenous solutions.
4. Together with these farmers and local extension agents, map the spread of these indigenous solutions and trace the history of their development.
5. Assess the impact of these indigenous solutions on agricultural production.
6. Choose pilot topics from the indigenous solutions (one topic per Province) and explore these topics in the field in a PTD process.

For the first time in Cameroon, a group of farmer innovators was invited to the Research-Extension Linkages Workshop organised by PNVRA and IFAD (International Fund for Agricultural Development), a donor of PNVRA. An important output of the workshop was the recognition of farmers as reliable sources of appropriate technologies for extension. This promises to have a positive influence on agricultural policy in Cameroon. The PNVRA coordinator recently declared that, in future, farmers' representatives will attend the PNVRA planning workshops at national level.

The Governor of North-West Province has invited the ISWC-Cameroon coordinator to serve as a resource person in a meeting to plan development of the Province and to facilitate the session on "Participation and Partnership in Local Development". Three farmer innovators of the ISWC programme have received awards from the Provincial Agro-pastoral Committee in West Cameroon; this is a committee under the MoA that acts at provincial level to give awards to the best farmers selected according to certain criteria. These are indications that decision-makers at provincial level have a positive perception of the PTD approach to development.

## 4. CONCLUSIONS

Through the concepts and principles of the PTD approach, it is recognized that the information for the agricultural development is not in the hands of the outsiders only (researchers, extensionists, etc.) but in the hands of all the actors involved including farmers. Through these concepts and principles, farmers are considered as knowledgeable actors who experiment and innovate. Through these PTD concepts and principles also it is recognized the effectiveness of combining the indigenous and modern practices through a process of joint experimentation involving farmers, scientists, developments agents, etc. Hence the institutionalization of the PTD will consist in mainstreaming, through appropriate methods, these concepts and principles in different institutions and structures (for instance, Research, Education and Extension) in order to be understood, accepted, adapted and directly applied.

These PTD experiences with the ISWC II in Cameroon have shown a diversity of development actors who had been actively involved in informal and formal activities that have yielded relevant impacts in situ and at national level. This is a sign of acceptance of the PTD approach in Cameroon.

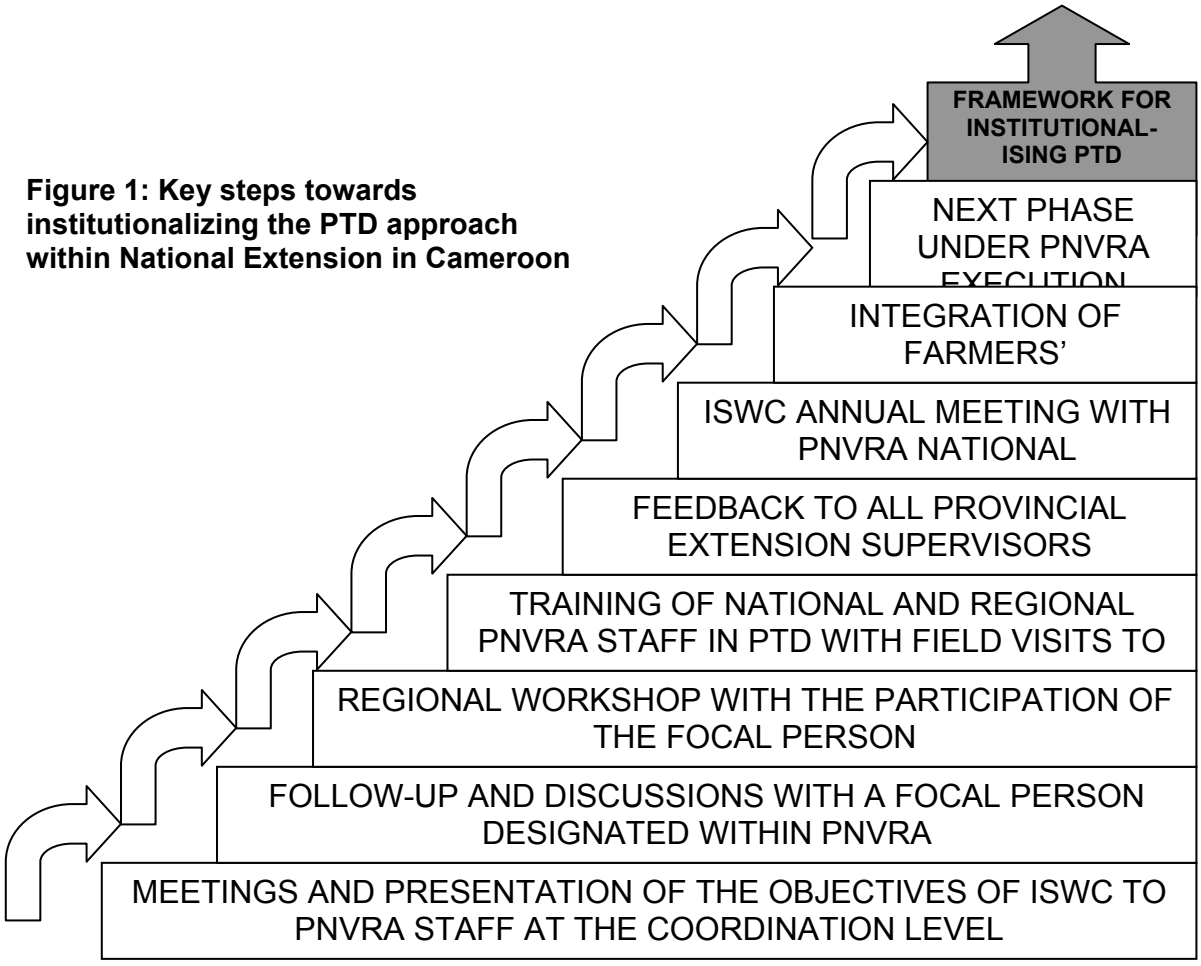
Through the former approaches like Training & Visits, the researchers had the main tasks of devising technologies that were promoted passively by the extensionists to farmers. The extensionists also used to consider the researchers as the sole source of knowledge. The PTD experiences have shown changes in Research and Extension systems. The involvement of the scientists in implementing and assessing the experiments helped to convince them about the PTD approach and some of them are now including the PTD concepts and principles in their research methodology. More attention is given to local innovations by the extensionists that were involved in the farmer innovation approach and they include them in the extension programme. They no longer consider the formal research system to be the sole source of information for extension. Farmer innovation is now considered to be another relevant source of appropriate technologies.

The PTD experiences with the ISWC II have shown the relevance of the learning approach in PTD for all the actors involved. In fact they have shown the Extension as a learning experience for participants, rather than extension as a one-way flow from extensionist to farmer.

The PTD experiences with ISWC II have clearly shown that extension officers and policy-makers have learned about specific farmers' innovations and have learned also to appreciate development of knowledge by farmers.

Although the institutionalisation of the PTD started with the students who made their theses in the ISWC programme, a major remaining challenge is to integrate in depth the farmer-innovation approach to PTD into the curricula of the institutions of higher education. That will be one the objectives of next third phase of the ISWC-Cameroon programme within the larger regional programme called "Promoting Farmer Innovation in Africa".

**Figure 1: Key steps towards institutionalizing the PTD approach within National Extension in Cameroon**



## 5. REFERENCES


Murwira K. et al. (2001) : Mainstreaming participatory approaches to SWC in Zimbabwe. In Farmer Innovation in Africa. A Source of Inspiration for Agricultural Development. Earthscan Publications Ltd, London. pp 300-309.

Diop J-M. (1998) : Programme des techniques traditionnelles de CES en Afrique : Phase II. Formation en Développement Participatif de Technologies et appui général au projet CES II – Cameroun, septembre-octobre 1998. ETC Ecoculture, Leusden, The Netherlands, 22 p.

Diop J-M. (1999):

- Programme des techniques traditionnelles de CES en Afrique : Phase II. Rapport de mission d'appui au projet CES II-Cameroun, mars 1999. ETC Ecoculture, Leusden, The Netherlands, 12 p.

- Programme des techniques traditionnelles de CES en Afrique : Phase II. Rapport de mission d'appui au projet CES II - Cameroun, septembre 1999. ETC Ecoculture, Leusden, The Netherlands, 15 p.

Diop J-M. (200): Programme des techniques traditionnelles de CES en Afrique : Phase II. Rapport de mission d'appui au projet CES II-Cameroun, mars-avril 2000. ETC Ecoculture, Leusden, The Netherlands, 13 p.

Gündel S. et al (2001): Scaling-up strategies for research in natural resources management. – a comparative review. Chatham, UK: Natural Resources Institutes. 60 p.

Haile M. (2000): Lobbying for policy support to local innovation. In ILEIA Newsletter 16 (2), pp 23-24.

Kibwana O.T., Haile M. et al (2001): Clapping with two hands: bringing together local and outside knowledge for innovation in land husbandry in Tanzania and Ethiopia – a comparative case study. In The Journal of Agricultural Education and Extension, vol. 7 (3), pp 133-142

Nasr N. (2001): Impact of the farmer innovation approach on the attitudes of stakeholders in agricultural development in Tunisia. In Farmer Innovation in Africa. A Source of Inspiration for Agricultural Development. Earthscan Publications Ltd, London. pp 325-330.

Pinners E. (2000) : Beyond appraisals: Participatory Technology Development. *Splash* 2: pp 3–5.

Scoones I. Et al (1996): Sustaining the soil: indigenous soil and water conservation in Africa. London: Earthscan/IIED.

Tchawa P. (1999): How the night paddock manuring system was introduced in Cameroon. In Peasant Innovator. Bulletin trimestriel de liaison du programme CES II, septembre-octobre 1999. pp 6-7.

Tchawa P & Diop J-M. (2000) : Rapport de l'Atelier Régional Francophone de Programme CES II, Bamenda, Cameroun, 29 novembre-2 décembre 1999. CES II – Cameroun, 105 p.

Tchawa P. (2001): Chains of innovation by farmers in Cameroon. In Farmer Innovation in Africa. A Source of Inspiration for Agricultural Development. Earthscan Publications Ltd, London. pp 104- 109.

Tchawa P., Kamga P. et al. (2001) : Participatory Technology Development on soil fertility improvement in Cameroon. In Farmer Innovation in Africa. A Source of Inspiration for Agricultural Development. Earthscan Publications Ltd, London. pp 221-233.

Varlet F. 1993. Dynamique de l'alimentation au Cameroun (Présentation et interprétation des données quantitatives disponibles pour la période des données quantitatives disponibles pour la période 1970-1992). Montpellier, France, Document de travail n°1, CIRAD-SA.

Veldhuizen L., Waters-Bayers A. And de Zeeuw H. (1997): Developing Technology with Farmers: a trainer's guide for participatory learning. London:ZED Books / Leusden: ETC Foundation.