

Systematisation Agroecology Nicaragua

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Preface

In August 2016, the Coordination Office Nicaragua conducted a two-day workshop with the aim to systematise the successful introduction and promotion of agroecology in the SWISSAID country programme Nicaragua and to share this positive experience with other SWISSAID programmes. The participants of this workshop were the country representative and both programme managers as well as three experts from partner organisations in Nicaragua. It was facilitated by the programme manager of SWISSAID Switzerland. Minutes were taken by an external consultant and build the basis for the following summary of the systematisation results.

I. Introduction of Agroecology and Motivating Factors of Farming Families

The most important motivating factor of the farming families is seen in their food and income insecurity and the resulting need **to improve the existing production system by sustainably increasing the yield at unchanged or lower production costs.**

I.1) Selection

A comprehensive and participative situation analysis builds the basis for the introduction of the agroecological approach and for the selection of suitable villages and target groups. The following requirements are needed:

- The target group is organised or has the intention and potential to get organised.
- The socio-economic (poverty focus¹) and ecological² conditions of the region legitimate or facilitate an agroecological project.
- The benefitting families already have some experience with or knowledge of agroecological production methods and / or show a genuine interest in such methods.³

A sensitisation of the potential target group already takes place during the situation analysis. In a first step, the traditional, religious or political leaders of the pre-selected villages are informed about SWISSAID, the project idea and goal, the working methods and the conditions for a collaboration. Furthermore, they are included in a first analysis of the local problems and potentials. If this first step develops positively, the local leaders invite interested farmers in order to present SWISSAID and its agroecological project idea.

From the very beginning, the farmers are clearly informed that changing to an agroecological production system is not a short-term project with many «gifts», but a long-term process which needs to be supported and driven forward by the beneficiaries themselves. Collaboration is only taken up with families that have the possibilities (e.g. access to land, sufficient work force) and are willing to adapt their production methods.

A serious selection of the participating producers, based on clear and locally adapted ecological, social and economic criteria, is key for the success of the project.

¹ Suffering from poverty or extreme poverty; ownership of land (usually less than 7 ha); willingness to get organised.

² Low production yields and diversification, unsustainable production techniques (e.g. slash-and-burn, pesticides), soil and water are in a condition enabling agricultural production.

³ Additionally, formal selection criteria by SWISSAID need to be fulfilled, e.g. interested villages must be located in the intervention areas defined in the strategy.

I.2) Motivation

The following aspects of an agroecological approach enhance the motivation of the producers:

The farmers are recognised as valuable knowledge carriers

First, the problems and potential of each farm are analysed (baseline). Several participative methods can be used to do so, for instance sketching the current situation and the future vision of the farm, or scientific methods such as analysing the soil. Farmers realise what they already know, what they are already doing «well» and what they can improve.

At the beginning of the collaboration, if possible, the farmers get the possibility to meet with farmers' groups, pioneers or research and training centres which have already made positive experience with agroecological production methods.

Sharing achievements and progress – even very small ones – enhances the motivation and confidence of all stakeholders.

The existing production system serves as a starting point for change in small steps

Building on the situation analysis, simple agroecological methods are gradually introduced which do not pose great risks for the farmer families, but bring about easily visible improvements, such as the diversification of production or making compost and organic fertiliser. Many of these practices increase the resilience of the farming families to the negative impacts of climate change. Each step is based on the available knowledge and resources. Introducing external inputs (with the exception of new crops) is avoided wherever possible.

Watching quick changes also motivates farmers not integrated in the projects to do the same and to change their production methods.

The farmers enter into a dialogue at eyelevel with agroecological technicians

The role of the technicians is less one of presenting instantly ready solutions, but rather one of mediating between traditional and «modern» knowledge and supporting the producers in the development and implementation of their own solutions. This strengthens the confidence of the farmers to introduce innovative changes in their fields and their environment themselves.

The farmers' responsibility is enhanced

From the very beginning, SWISSAID encourages the benefitting farmers and the elected board of their local organisations to assume responsibility for the implementation of their project. A high degree of responsibility is also expected from the promoters experimenting on their plots and passing on their knowledge.

Farmer families eat healthier

Farmer families are usually aware of the negative health impacts of chemical fertiliser and pesticides. They have a strong interest in consuming healthy food and are sensitised from the beginning that a diversified production of several foodstuffs makes a healthier nutrition possible.

Food security is increased

By means of a selective diversification, crops are introduced that are adapted to the ecological situation and that add to a better nutrition situation and/or have market potential. For instance, cultivating plants with a short production cycle (e.g. vegetable) can quite quickly improve the food situation. Care must be taken to ensure that when introducing new crops, farmer families also learn how these crops can be processed.

It is recommended to cultivate produce which can be harvested, consumed and sold at different points of time. It is also important to not rely on one single crop (e.g. cocoa) and one market (e.g. international fair trade) only. Furthermore, farmers should be able to reproduce the newly introduced crops or to organise the supply of the seeds by themselves.

Farmer families earn more

Agroecology must not only be ecological, it also needs to be economically sustainable. By increasing the productivity and using the land more intensively, higher yields are made and more produce are cultivated (diversification). This means that a bigger amount of different produce can be sold on the

market or that less food needs to be bought. Moreover, costs for buying external means of production (such as fertiliser, pesticides, seeds) decrease continuously. All this has positive effects on the household income.

I.3) Participation of Women and Youth

At the beginning, it is rather difficult to get women and youth engaged, and men need to be sensitised in order for them to support the integration of their wives and children in the project. Mobility and time constraints of women must be taken into account when organising workshops. For women farmers, it is important to have the possibility to exchange with other women farmers and to recognise that they are not alone with their “challenges”. In order to motivate more youth, special activities are promoted arousing their particular interest (e.g. discussions about sexual health, sports, music and cultural events).

From the beginning, women (and youth) are specifically motivated to assume the role of promoters and to implement their own experiments on their plot of land. The presence of women promoters improves the confidence and motivation of other women in the project. Potential leaders among the women are identified and motivated to take on leadership responsibilities. Both men and women, but also youth, enjoy occasions in which they are among their equals and can talk and behave freely and without restrictions.

II. Food Security and Marketing

Securing a sufficient and healthy nutrition through a diversified, agroecological production system has top priority. **A market-oriented diversification only is not sustainable** as prices can be very volatile. Our target groups are usually poor farmer families growing a few crops in monoculture and that are therefore fully exposed to price developments on the local markets.

Although all farmers have at least some experience in marketing their products, they lack confidence and a marketing strategy highlighting the advantage of organic food. While publicity of competitors for conventional products is very present, what is mostly missing on the consumer side is the awareness of the added value of agroecologically produced food. Moreover, there are big bureaucratic and technical obstacles (or costs) for the regulatory approval of processed products.

Consequently, many farmers sell their food at a bad price on the local markets or to intermediaries. **Analysing the weaknesses, market chances for agroecological producers could be improved with selective measures** (e.g. creation of storage capacities, running a market stand).

In many areas, access to water all year offers a big marketing potential, for instance through irrigated vegetable production during the dry season.

Experience shows that **farmers should not solely be motivated to change to agroecological production because of better price expectations** as price developments on the markets can hardly be foreseen.

Often local events such as farmer markets, sales exhibitions or fairs are crucial for marketing and easily accessible for the producers. They encourage the cooperation among the farmers in a village or neighbours for reducing the marketing costs (transportation, vendors, fee for the market stand etc.). In turn, local markets benefit from producers who offer their produce on a regular basis.

An external organic certification is too complicated and too expensive for most of the benefitting farmers. Instead, alternatives should be sought which are based on a participatory certification (PGS) and a trusting relationship between producers and consumers. Especially on local markets, this is relatively easy to achieve as there is an immediate social control. Creating a «brand» or a label is a promising concept.

Successful joint marketing (by means of cooperatives, producers' associations etc.) needs a minimum standard for the quantity available, quality, consistency and organisation of the production. If the

production and economic conditions as well as the motivation and capabilities are given, the producers need – at least in the beginning – logistic and technical support. Decisive factors for market success are the (constant) quality of the products as well as the setting of sales prices on the basis of the actual production costs.

A formal organisation – e.g. a cooperative or a producer association – guarantees the continuation of joint-marketing even after the project has ended, albeit often with less intensity.

III. Technical Training: Content and Programme

First, together with the farmer family and by means of simple tools, a situation analysis for the farm is made. Special attention is paid to the soil fertility, the degree of diversification as well as the expenditures and income generated by the production. Based on this analysis, the producers define their priorities and possible solutions.

Measures for stabilising the soil and preventing soil erosion are right at the start of the process for restoring a fertile soil. As a general rule, biomass or nutrients in the soil «used» for the production should be put back into the soil through organic fertiliser, compost and organic material.

There is no formula and no fixed order for using the different agroecological techniques. Instead, solutions are developed based on agroecological principles, local environmental conditions and the resources available on the farm. At the very beginning already, diversification and development of agroforestry systems can be started. Apart from the soil, crops too are strengthened by organic means such as soil covering, supplying of manure or liquid organic fertiliser.

During the conversion process, the farmer families need to be technically accompanied and motivated to implement an integral approach. It must be borne in mind that some techniques are very labour-intensive and cannot be implemented by all families.

Usually, the conversion to agroecological production takes place in several steps. As a first step, the producers learn how to work with less chemical inputs and how to use them more effectively. Increasingly, external (chemical) substances are then exchanged through organic fertiliser and substances. The network of farmers promoting agroecological production techniques has a decisive role in this conversion process. **The promoters serve as a model and offer the farmer families direct support in situ.** The PCAC programme has established a profile with the most important characteristics (commitment, willingness to work, initiative, leadership etc.) and technical abilities a promotor should have. The selection of promotors and trainings is based on this profile.

Each promotor is in charge of about 10 farmers, primarily coming from their own village. The promotors work on a voluntary basis and are compensated for transportation costs, if need be. Moreover, they are entitled to participate in specific trainings (including board, lodging and transportation), are invited to exchange meetings with promotors of other regions and receive inputs (e.g. seedlings, tools etc.) for «experiments» they can conduct on their own plot of land. It is not recommended to pay money to the promotors (e.g. a per diem).

Many farmers would like to see concrete figures proving the advantages of an agroecological production system. Joint reflections on existing and future production costs and revenues serve as a basis for deciding about the way to go and the desired complexity of an agroecological production system.

The technicians therefore need a lot of creativity for the elaboration of practical exercises, dynamics and educational examples (e.g. measuring the weight of organic material on a plot) stimulating the farmers to reflect on what they have learned. The agroecological concept does not need to be fully understood from the beginning. For reasons of simplicity, terms such as “environment-friendly production» can be used.

The role of the technicians is to act as **facilitators strengthening the self-esteem of the farmers and motivating them to develop innovative and adapted solutions based on local knowledge and by experimenting on their own plot of land.**

The technician needs to be clear that he/she does not solve problems, but supports the farmers in developing their own approaches adapted to their needs and the local conditions.

He/she needs to constantly stimulate a learning and joint reflection process in which little by little new knowledge (theory) is introduced that can immediately be applied and verified on the plots (practice). **The farmers learn by actually applying the new techniques on their own farm.**

It is important that the producers (get to) know someone who has already successfully introduced new techniques and has achieved good results. Should no one be available nearby (e.g. an agroecological promotor), an exchange meeting in another region can be organised or visualised by means of a video.

IV. Organisations and Networks

IV.1) Local Organisations

The process of conversion to agroecological production must be supported by local organisations. Promoting a few individual farms only is inefficient and not very promising. Ideally, an organisational structure among the beneficiaries is already in place, for instance a farmers' organisation or a cooperative. If they can identify with agroecology, other local organisations in the village, too, can act as carriers of the transformation process, for instance water committees, religious associations or grassroots farmers' groups. If no such organisation exists, a simple local organisational structure is created, stimulating, promoting and accompanying the process.

Example: The regional farmer-to-farmer programme (Programa Campesino a Campesino PCAC) of the Unión Nacional de Agricultores y Ganaderos de Nicaragua UNAG is organised as follows: At village level, the participants of the programme elect a board (5-6 people) consisting of men, women and youth. This board coordinates the activities of the programme in the village. Furthermore, additional commissions are created for important issues such as seeds, loan funds, marketing etc. Two to three people are delegated to attend the meetings of all village groups that are participating in the programme (regional level).

The delegates elect and control a board which is in charge of implementing the whole regional programme or the project funded by SWISSAID.

Ideally, the project is supported by a local NGO or a national farmers' organisation which directly works with the organised farmers.

From the very beginning, sources of income for the local organisations are explored to generate a certain momentum (e.g. loan fund, membership fee or economic activities).

IV.2) National Networks

Besides PCAC-UNAG, there are other national networks like the *Grupo de Promoción de la Agricultura Ecológica GPAE* and the *Movimiento de Productores y Productoras Orgánicos y Agroecológicos de Nicaragua MAONIC* which advocate for the interests of agroecological producers at national level and which offer services (training, marketing, ecological inputs etc.) for their members.

Moreover, these organisations are members of the *Alianza Semillas de Identidad (Alliance for the Promotion of Local Seeds)* which tries to influence the national agricultural policies together with consumer association and other networks. These national networks build some sort of protection screen for agroecological production and facilitate the exchange of experience and knowledge.⁴

Whenever possible, activities are coordinated with other organisation (international and local NGOs, social, religious organisations, lobby associations etc.) to avoid duplication. Collaboration is also sought with state institutions (Institute for Agricultural Engineering, Ministry of Education, Ministry

⁴ At Central American and Latin American level, too, regular exchange with different agroecological networks (e.g. MAELA (IFOAM)) is in place.

of Environment etc.), universities and technical research institutions and especially with the decentralised governments. Churches, schools or the local media (radio, newspaper, television) are other important actors that can convey a message to the local people.

In the mid- or long-term, the aim is that the national government commits to the promotion of agroecology and develops and implements concrete ideas in this area.⁵

V. Access to local Seeds

V.1) Carrier of Culture, Knowledge and Diversity

Seed is of great significance in agroecology and has a special value for most farmer families. While longstanding propaganda has been asserting that certified seed was superior and governments and international organisations keep distributing hybrid seed, many farmer families have kept their local seed varieties and grown them for their own consumption. Local seed is an important element in peasant culture and of the traditional knowledge. It is also important when it comes to promoting the self-esteem of farmers and building up resistance against the introduction of genetically modified seed.

Agroecology does not only encompass the diversity of crops, but also a genetical diversity. Not only do different varieties enable the farmers to adapt better to ecological conditions and climatic fluctuations, they also help them respond to their particular nutritional needs. Quickly growing varieties, for instance, depend less on the amount and number of intervals of rain and can be consumed faster, yet yields are usually lower.

Self-sufficiency of farmer families through a diversity of seeds adapted to local conditions increases their resilience and independence and decreases the cost of production.

In the first place, farmers need to become aware that local seed has a value. Again and again, farmers have had bad experiences with certified seed or with seed of poor quality that was distributed by promotion programmes of the government but is in fact inappropriate for the prevailing ecological conditions.

Seed fairs where farmers from different regions can present their own seed varieties and exchange with others have proved to be a successful means for increasing the farmers' interest in and appreciation of local seeds.

Including the farmer families in the establishment of an inventory of still available, local seed varieties captures their curiosity and motivation. Such an inventory preserves the genetic diversity. If only few varieties are left, extinct varieties and/or other local varieties from other regions can be incorporated or tested. Inventoried seed varieties then need to be reproduced (e.g. on specially provided plots) and their strengths and weaknesses must be analysed (characterisation).

V.2) Decentralised Seed Banks

For the safe storage of their own seed, farmer families need material inputs (such as storage containers) and training, notably on how traditional knowledge already available can be accumulated and applied.

A proven strategy for preserving, reproducing and promoting local seed is creating decentralised rural seed banks which usually provide about 20 – 50 families with seed. It is the producers themselves who should take the initiative to create a seed bank and who should be responsible for it to become operational. Establishing a decentralised seed bank is usually the logical consequence of increasing demand in local seed. Usually, seed banks not meeting a genuine need are operational for a short period of time only.

⁵ In Nicaragua there is already a law on agroecology in place, but which has not been implemented yet.

V.3) Improvement and Breeding of local Seeds

In the process of promoting local seed, it is recommended to start breeding improved local seed at a rather early point of time. Very simple methods already, for instance selecting the “right” plants, quickly lead to an increased seed quality. Techniques like crossing different varieties with the aim to transmit the best characteristics of each variety to a new one are more challenging, though interested farmers are perfectly able to learn even this technique.

VI: Political Lobbying

VI.1) Local Level

Exchange meetings between regions and farmers’ groups is a proven means to promote the producers’ enthusiasm for agroecological production techniques and experiments. Strengthening local farmers’ organisations also has a positive effect on lobbying at local / regional level. Organisations are supported in formulating priorities and political agendas which do not «only» cover agroecological production, but also other important issues for rural development, for instance extension of access roads or provision of basic services (electricity, water, health and educational institutions). As a result, farmer organisations become agents of local change and receive more weight and recognition in local politics.⁶

SWISSAID should ensure that the local leaders themselves assume responsibility for political lobbying and that they are provided with the necessary information and knowledge (e.g. concerning the legal framework or danger of GMOs). By means of campaigns in the media and using informal networks, agroecological promoters can increase their publicity and their potential for political influence.

VI.2) National Level

A successful agroecological production at local level always needs to be the starting point for all networking and collaboration. Without any solid results at the grassroots level or local organisations identifying with agroecology, national lobbying and influencing of policies and decision makers is not going to work.

A project aiming at converting to or promoting agroecological production methods should be defined by the farmers’ organisations and reflect the real needs of the benefitting farmer families. Establishing agroecology will only be successful if the farmers are convinced and include the concept in their own «agenda» for improving their food security and income situation. Thanks to the propagation of agroecological production, the SWISSAID partners become «visible» at local as well as at national level, and their expertise is increasingly getting acknowledged.⁷

Health is a politically strong argument for promoting agroecology and fighting against GMOs.

It would be interesting to have data on health costs provoked by the treatment of people with long-term contaminations or damages (cancer, kidney disease etc.) caused by agrochemical products. Members of the ministry of health are also invited to all public agroecology promotion events.

⁶ Additionally, in Nicaragua, a successful strategy has been the legal assistance for interested decentralised governments in declaring their territory as GMO-free area.

⁷ In Nicaragua, the seed lobby coordinates 5 national networks and is very effective. On the one side, it implements jointly planned lobbying activities and sensitisation campaigns at local level. On the other side, it uses the local experience and approaches as well as the mobilisation potential of member organisations for lobbying at national level.

Increasingly, Social Media (e.g. Youtube, What'sApp) are being used for quickly being able to mobilise for lobbying activities or for making such activities available to a broad public (also retroactively).⁸

VII. Knowledge Management

VII.1) Visibility and Documentation of local Knowledge

In order to make traditional knowledge available, the technicians not only need to play an active role, they also need to identify and document interesting practices by inquiring, observing and searching.

A big challenge is the documentation and systematisation of existing knowledge. Several techniques can be used, e.g. photos, interviews on the local radio, markets for exchanging products, seed and knowledge, exchange meetings with farmers from other regions, expert discussions, workshops or cultural events such as creating theatre or playing music together.

Documenting and spreading local knowledge motivates other farmers to share their own knowledge. For the dissemination of local knowledge, different channels can be used such as radio, assemblies, exchange meetings among producers and promoters and of local leaders such as the priest who can share important findings through his sermons (e.g. harmfulness of slash-and-burn).

VII.2) Experiments and Research

In agroecology, experimenting on own's own plot is an important method for further developing knowledge. The farmer tries out a new technique, a new crop or a new method in order to achieve a special goal (e.g. less pest infestation), usually by combining traditional knowledge and newer findings and experience. The experiments should not be too complex or include too many variables.

What is important is the method used: The experiment must be planned, implemented, observed and evaluated by the producer him/herself. If needed, he or she can get help from a technician. The results of the experiments must be shared with other farmers.

Seeing a successful experiment on a plot with one's own eyes and hearing from the producer directly how he/she managed it all is especially convincing and stimulating for most farmers. This kind of exchange meetings can best be organised on so called «reference farms» of promoters and pioneers. Visiting farmers should less be motivating to copy what they have seen, but rather to experiment themselves on their own plots and adapt everything to their own conditions. **Agroecological practices cannot be copied, but only adopted, adapted and developed further.**

It is a challenge that most technicians working for the state are trained in conventional production methods («Green Revolution») only and are not (yet) familiar with agroecology. What is important is that a relationship of trust between producers and technicians can develop. Technicians should know the farm as a whole, or the whole production system of the family, respectively. Since agroecology is constantly evolving, agroecological technicians must be willing to continuously learn new things and to document and share their knowledge.

Farmer field schools (Escuelas de campo) or field trials are further methods where technical guidance and clearly set objectives are provided to the farmers for experiments which usually take a whole production cycle and include several practical working sessions. This kind of field research is often attractive to postgraduates or professors of agricultural universities and can be used for fruitful collaborations. It is decisive that the participants later repeat what they have learnt on their own plots and – if necessary - receive support by a technician or promoter.

When it comes to their exchanging with agroecological producers, research institutes and universities often have little knowledge on agroecology and act as learners rather than advisors. However, they can be important partners for specific expertise and for the scientific collection and evaluation

⁸ In Latin America, Via Campesina, Movimiento Agroecológico de America Latina (MAELA-IFOAM) and Sociedad Científica Latinoamericana de Agroecología (SOCLA) are strategic partners at international level that are regularly used for lobbying purposes at national level (e.g. at international congresses or in trainings on agroecology).

of data from the field trials. An even closer collaboration is desirable, provided the scientists accept the agroecological approach and methods.

VII.3) Networks of Promotors

The topics to be included in the training of promotors are determined according to the needs of the participating farmers and the ecological conditions in the area of intervention. The promotors also learn methods for the planning and implementation of trainings. For all important agroecological training topics, the promotors use simple leaflets of 3 to 4 pages summarizing the most important aspects. These leaflets also include local knowledge and serve the promotors as an orientation for the implementation of the trainings.

Before each training, the current level of knowledge of the participants should be determined and the trainings should then be adapted accordingly.

If promotors identify with agroecology and are personally committed, they contribute to maintaining and further developing agroecological production systems even if the cooperation with SWISSAID has ended.⁹

SWISSAID, December 2016, Daniel Ott Fröhlicher, Programme Manager Nicaragua and Chad

⁹ Every year, UNAG organises 3 – 4 panels on peasant knowledge exchange (Foro de Intercambio Campesino FINCA) in which one delegated producer and one technician of all regional PCAC programmes participate.