

Support to Organic Research and Extension

Pacific Organic Policy Toolkit
<http://www.organicpasifika.com/poetcom>

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Political justification

The potential for innovation on the basis of organic knowledge is considerable. So is the potential impact of organic innovation on public goods and services, as well as on markets. However, current spending on agriculture research and dissemination around the world often do not adequately reflect this potential.

Scientific research, as a source for innovation, is key to:

- increase the sustainability, productivity and competitiveness of organic farming systems worldwide;
- conversion, as the absence of organic solutions to certain local agronomic problems is one of the main bottlenecks for farmers to convert;
- recognition of the benefits of organic agriculture (both by consumers and by policy makers), which requires scientific evidence of the positive externalities associated with its production methods, and of its superiority in aspects such as nutritional value and health.

Therefore, investing public funds into organic research is primordial for the development of the organic sector, including in countries and regions where organic agriculture is newly emerging.

Research and innovation in organic agriculture also benefits the conventional sector, contributing to increase the overall sustainability of agriculture and food production. A classic example is new methods of biological control being used, not only in the organic system, but also in integrated pest management. This is why many governments increasingly recognize the innovative dynamism and potential of the organic sector and make it a priority area for agronomic and food research.

Research and extension services for organic farming should be strongly linked. This is the reason that the two topics are covered jointly in this section. Researchers should conduct applied research in the field with farmers to solve agronomic challenges in organic systems. Extension should also be capacitated to provide organic advice and disseminate the results of applied research to farmers. Ideally, extension services should be constructed so that, even to conventional farmers, they provide first organic solutions, and only if those don't work, they advise on conventional solutions (e.g. this approach is used in Bhutan).

A study done in France in 2010 comparing various regions with very different levels of public spending in organic extension, suggests a strong link between funds invested in organic extension and the number of conversions over the period 2001-2008. Another quantitative study, analyzing market and policy factors influencing the share of organic land in a dataset of 61 countries for the years 1990 and 2001,

found that the availability of organic advice by publicly funded extension personnel was one of the factors with the largest influence on organic farming adoption at the early stage of sector development, while national organic research activities become the most influential factor at later stages of development.

Suitable contexts

Government support to organic research and extension is suitable to all contexts: regardless of the stage of development of organic agriculture, the regulatory context, the culture of government intervention, and policy goals. Agronomic research and extension exists in all countries and there can be no effective and significant growth of the organic production if those support sectors only work on conventional agriculture techniques. It is also a type of policy support that does not require a lot of extra financial resources, but rather a shift of priorities, from conventional research and extension to progressively include organic issues and knowledge into the work of agronomists, researchers and extension agents.

Possible modalities of implementation

Assessing Needs: When planning for research and extension support to organic farmers, they should be asked to identify research needs. This information is commonly collected in surveys by NGOs in Europe and the United States, but it could also be collected directly by the agricultural ministries and/or universities.

For countries with few resources for agricultural research, there are some potential supplements to its organic research initiatives.

Pooling resources: Despite the important investments provided by the European Union, most of the funds earmarked to agricultural research are still managed by EU Member States, but they sometimes do so in the form of transnational cooperation, pooling national budgets together. Regional cooperation is an option for the Pacific Island countries, pooling resources and creating synergies to investigate solutions to challenges in particular crops or for particular environmental conditions for organic farming. For example, Fiji's Ministry of Agriculture and NARI in PNG have an MOU on general agricultural research cooperation and there could be an organic component of this or other research partnerships.

Research agendas and government funding can be set for projects carried out at University of the South Pacific. Here is an example relevant to organic agriculture, with objectives for both agriculture and biofuels:

USP: Environment, Sustainable Development and Climate Change

Sub-theme: Pacific Community Development

Project Team Leader: Dr Antoine De Ramon N'Yeurt

Team Members: Dr Sarah Hemstock, Mr Viliamu Iese, Dr Giada Migliore, Lagoon Ecology and Aquaculture, Dr David P. Chynoweth, Dept of Agricultural and Biological Engineering, University of Florida, SPC-CETC, South Pacific Elixis Inc, Organic Matters Foundation, PODenergy.

Funding: FJ\$ 15,985

Duration: 2 years from Jan 2014 to Dec 2015

Overview of Project:

http://www.research.usp.ac.fj/wp-content/uploads/2013/08/shutterstock_135659039.jpg

Red Seaweed

This two years pilot project based in the Suva Lagoon with possible ramifications to Tuvalu and Vanuatu through co-funding proposes to explore the possibilities of developing for Pacific Island communities a low-cost highly effective seaweed and/or seagrass-derived agricultural fertilizer (in solid form and foliar spray) and a sustainable new source of renewable energy (biomethane) and that have the potential to develop the economy of local communities, create employment, reduce foods and fossil fuel imports, reduce greenhouse gas emissions, increase ocean species biodiversity, clean excess nutrients from sewage treatment plant discharges and cleaned up beaches fouled by seaweed.

Global Research Dissemination: Governments and research institutions can benefit from a globally available information service, [Organic eprints](#), which is coordinated by Denmark's International Centre for Research on Organic Food Systems (ICROFS). Organic eprints is a searchable, open-access archive for papers related to research in organic agriculture. While emphasising agronomic research, the archive also contains papers on social, economic, and market research. It also offers information on organisations, projects and facilities in the context of organic farming research. Pacific researchers should disseminate their research regionally, and share their research papers with Organic eprints for global dissemination.

Models for implementation: In some cases, the state advisory services offer tailor made provision for organic farmers, e.g. Bavaria (Germany). Chambers of agriculture are often required to have at least one organic adviser per regional/local office (e.g. in France, Turkey). Governments can also financially support organic farming associations or private organizations, to carry out organic advisory services (e.g. Switzerland with FiBL, Denmark with the Danish Farmers Association, Niue with the Niue Island Organic Farmers Association). The case of FiBL is interesting because it hosts research and extension in the same organization.

Ideally, special advisory programmes are designed for farmers aiming to convert their farms. Such services are provided at the national or regional government level in several European countries. Training and advice is offered in the form of phone or email help-lines, information packages, farm visits or demonstration farms.

The organic farmer field school model can also be very effective to provide training to organic farmers. The Tunisian Ministry of Agriculture has established organic

farmer field schools extensively after observing the dramatic progress for organic farming from this participatory learning method. Two other examples of organic field schools are described, both from Thailand.

Earth Net's main extension activity is the Farmer Field School. Participants who join this school collectively make decisions and manage a school plot that is representative for the area using new organic techniques. They observe regularly what is happening in the field through agro-ecoanalysis. They also practice a number of other techniques themselves, such as making compost, or herbal pesticides. In the end, although the farmers involved may not be farming their own field, they have gone through the whole crop cycle of farming the school field and practiced the techniques involved in its organic management. They finish the school with confidence about the techniques and results.

Khao Kwan Foundation (KKF) also uses the Farmer Field School as its main extension technique and the focus is on rice production. The course is divided into 3 modules to be conducted over 3 rice-cropping cycles. The first module focuses on pest management without synthetic chemical use, the second module focuses on soil fertility management without synthetic chemical use, and the third module focuses on learning effective rice seed selection and breeding techniques and thus removing the dependency on outside sources for quality rice seed appropriate to their conditions. Aside from working with the school plot, there is the requirement that each farmer adopts the techniques being taught on a portion of their land (at least 2 rai or about 1/3 hectare). This seems to be even stronger than the Earth Net technique as the farmer joins the class every week with fresh observations from his or her own land that can be discussed with the group. The problems encountered and these farmer plots themselves are also used for training and discussion with the group. The farmers also have latitude in their application on their trial plots: Although they must not use pesticides or herbicides (module 1), they can choose as to what pest management techniques to use, and if herbal preparations are used, make their own and choose when and in what concentration. This process encourages more farmer innovation and exchange.

FAO offers a [Technical Manual for Farmer Field Schools](#), which has been applied in organic field schools in East Africa.

Pitfalls and challenges in extension services

The challenge of vocational training provision is always: is it going to really meet the needs of the farmers? In order to rationalize resources invested in vocational training, it can be effective to first conduct a need assessment of future trainees. NOGAMU, the Uganda organic umbrella association, had an exemplary process in this regard, whereby they started in 2006 with a countrywide survey of organic farmers to determine their knowledge gap in organic production. Among others, the survey was aimed at assessing farmers' understanding of organic pest and disease management, weed, soil fertility and post-harvest management in an organic

production system. The outcome helped NOGAMU to design specific training programs to attend to the most pressing problems of farmers, and also to determine research priorities to offer new solutions in the future. However, the design of training where a combination of those needs identified and also market requirements considerations is recommended. For the market considerations part, NOGAMU consulted with organic marketers regarding the training areas to be focused.

Another challenge, particularly with large-scale vocational training programs, is the availability of a sufficient number of qualified organic trainers who also speak the local languages. Often, before such large-scale training program is initiated, one needs to implement a national Training of Trainers program.

Examples of Support for Research and Extension

Switzerland is one of the, if not THE world leader in organic agriculture research, thanks to its substantial funding of the organic research institute [FiBL](#), which was established in 1974. Additionally to FiBL (which is a private research institute, but operating mainly through public funds), 3 federal research centres have been involved in organic farming for many years. Advisory services are tightly linked to research: the advisory service of FiBL has coordinated organic extension provision at the national level since 1977, but receives financial support from the regional government. Additionally, the federal government funds specialized organic advisers within the general agricultural advisory service.

The United States government has invested nearly US\$ 261 million over the period 2009-2015 in organic research. The main federal program for organic research now is the Organic Research and Extension Initiative (OREI). US\$ 20 million is available annually for targeted organic agriculture research and extension program. This includes agronomic/economic/markets research and development of guidance tools for organic operators.

The Philippines is one of the most active Asian countries in terms of organic research, the Bureau of Agricultural Research (BAR) organizes an Organic Agriculture Research, Development and Extension Network, which includes other government agencies. The Government has established a National Organic Research and Development Program, starting with the Cordilera Organic Agriculture Development Centre ([COARDC](#)) at Benguet State University, launched in 2010. COARDC envisions to be the premier Centre for organic agriculture in Asia.

Cuba: when the trade relationship with the former USSR was severed in 1990, pesticide imports dropped by more than 60 percent and fertilizers by 77 percent. Pushed by economic necessity and in response to the crisis of agricultural inputs, Cuba adopted organic agriculture as part of its official agricultural policy. The Ministry of Agriculture and the Cuban Association of Organic Agriculture took far-reaching steps to promote organic agriculture systems and establish research

programmes that laid the foundations for food self-sufficiency (mainly fruits and vegetables) through organic management. Among sophisticated experiments are bio-fertilizers, bio-pesticides and the use of fermentation and tissue culture. Investments have been made to increase knowledge and technology for organic agriculture, through higher education curricula, with a view to create a new generation of agronomists.

1 In May 2015 a delegation from the Pacific Island nations visited Cuba to learn about innovation in organic agriculture techniques. The delegation included five farmers from Fiji and the Solomon Islands and POETCom's coordinator. Practices of particular interest included worm composting (vermi-composting), micro-irrigation and farm-based laboratories that produce biological pest controls. The delegation was particularly shown the organic urban farming techniques used at the Higher School of Urban and Suburban Agriculture and the Alejandro de Humboldt Fundamental Tropical Agriculture Research Institute of the Ministry of Agriculture. POETCom has started a project to transfer low-cost, proven organic farming practices from Cuba to the Pacific Island nations. Government extension services could assist with dissemination of this information.

Examples of Organic Research and Extension in Pacific Islands

Niue Island: The Niue Island Organic Farmers Association (NIOFA) and Department of Agriculture, Forestry and Fisheries (DAFF) cooperate to provide organic advisory services and maintain a demonstration farm. DAFF provides office space for NIOFA.

Cook Islands: The Ministry of Agriculture is directly providing training on organic crop production. It also coordinates trainings with the Cook Islands Organic Association.

Vanuatu: The Vanuatu Agricultural Research and Training Centre has conducted research on organic methods for cocoa production.

Papua New Guinea: The National Agricultural Research Institute (NARI) conducts some research on natural pesticides made from local resources.