

Cabiokid, a successful experiment

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Cabiokid is a permaculture development site located in Cabaio, Nueva Ecija, on the island of Luzon, in the Philippines. Its name is a contraction of Cabaio, bio, and *bukid*, which means field in Filipino. Found 90 km north of Manila, its mission is to provide ideas and inspire creative solutions towards sustainable development. The Cabiokid Foundation offers regular trainings and tailor-made courses, using permaculture as the guiding framework and its 5.5 hectare property as example. All sorts of vegetables are growing in abundance on the farm, while birds are common residents and reptiles and mammals can easily be seen in the surrounding areas. However, it has not always been like that. Only four years ago, the farm looked pretty much the same as the neighbouring fields, where rice is the only crop.

The Cabiokid project started on farmland where mono-cropping and chemical farming techniques had been common practice for many years, and whose only asset was that it was irrigated rice land. The concept took shape with the support of an engineer

Preparing ourselves to turn Cabiokid into a successful permaculture site, we were particularly interested in acquiring the necessary skills and insights. We therefore considered a few key aspects as essential guidelines for achieving a sustainable and productive site in the fastest possible time, and without depending on external resources.

Paying attention to scale

When we started working on the fields, there were only five of us. And although we are now seven, a 5.5 hectare property is still very big to work on with this number of people. So, from the very beginning, we had to plan carefully how to use the available energy and resources that working intensively in the field would need. Since rice was the main crop, we needed to decrease our dependence on water from the irrigation system which we did not control. Since the nearby irrigation canal only brought water irregularly, we decided to add several water storage systems that would catch rainwater and drain off the excess water quickly. These were small water catchments dotting the landscape at several places throughout the farm, but well placed to serve their function as supply systems for the different zones.

With the subsoil gathered from digging the ponds we made the basis for various vegetable gardens, a forested area and an orchard. However, throughout this first phase of the farm development, we never stopped planting rice: the only difference was that we adapted our planting system to organic farming methods, and we stopped using any chemicals on the farm. We also shifted from sowing the rice to planting seedlings. Initially, these new approaches made our rice yields go down, but so did the costs. And although we reduced the size of land for rice production to only 2.5 hectares, we were still able to produce 90 sacks of rice. The big advantage was that, by keeping the scale of the rice production manageable while focusing on other crops, we were able to diversify the resources used and the sources of income on the farm.

Do not disturb unless strictly necessary

Another important point was to disturb the soil and the farm in general as little as possible, and only if really needed, or if time and effort could be devoted to improving the disturbed area. The first and foremost activity was the design of the whole farm according to permaculture principles, while considering the capacity of Cabiokid to provide the money needed for it. The budget was limited and we did not want to overstretch our expenses, especially as we wanted Cabiokid to be a replicable example for our neighbours and other farmers.

The design consisted of a simple drawing indicating the areas that needed to be set up. We had to make a few key choices. For example, digging the main and secondary ponds was considered to be a priority. The cost for the rent of machines was carefully calculated, and we opted for doing this when we concluded that farmers in the area were also capable of hiring such heavy equipment. The water made available as a result of having these ponds would allow for new possibilities for vegetable production on the farm, while the soil resulting from the digging would elevate other areas and thus prevent them from flooding. We left the other parcels undisturbed, waiting for the moment when we could free our labour and energy to focus on them.

Focus on the existing crops

The most important crop on our farm, as in the farm of all our neighbours, was and still is rice. As such, we made sure never to



Photo: Author

Making use of biodiversity- construction materials are also grown on the farm.

who had been farming in the past (and failed), an agronomist and a product developer, all of them frustrated with modern farming and the poor results of development work based on it. Five years ago, we decided to try turning the place into a more diversified and productive farm, and thus show that sustainable farming is not a myth, but a very realistic and achievable endeavour.

We realised that the right framework had to be applied from the start if we wanted to succeed and prove our point. We opted for permaculture, as a holistic approach to sustainable development which considers aspects such as economics, health, food production and politics as equally important in ensuring a productive system. Permaculture is a design system for human habitats which takes its knowledge and insights from nature and living things.

disturb the rice production cycle. Digging took place during the dry season (when the irrigation system was dry and no crops could be planted). The major earthworks were finished within a month, and by the start of the rainy season the farm was all set for planting rice on the remaining area. The rice production area was reduced from 4 to approximately 2.5 hectares, so we also paid great attention to the productivity of this area. By adopting rice intensification (SRI) planting techniques, we gradually recovered our total production. We still believe that total yields can be higher, but we have decided to work on that gradually.

Plan for immediate, short and long term changes

Starting with a farm plan and area design, we were able to estimate and plan for any potential losses or changes in terms of production. We planned to plant new crops and generate increased income gradually, alongside other changes that would take place. For immediate sources of income, we grew some vegetables, beans and fish, all of which were possible with the amount of water available and the new ponds. With a short-term perspective, we included fast growing trees, bamboo, fruits and vegetables, thinking of the necessary farm structures and the animal components. For the long-term, we thought of a sustainable lowland agro-forestry situation, with a healthy balance between food crops and the natural resources, all serving as potential inputs for livelihood opportunities. All these activities were planned in accordance to the capacities of Cabiokid. Still, these plans are not static, so any possible change in the design and work plan are discussed when necessary. Adjustments are made according to the developments taking place in and around the site.

Another important aspect in our plans was that we had to invest in our own human and material resources, since these were both limited. So just like with the food crops, we also considered the future of the farm. While we were spending money for the construction works and the (natural) resources needed to build them, we purposefully looked for those species which could be useful in the future. Cabiokid now boasts several bamboo stands, palm trees which can be used for roofing and firewood, and native hard wood species that will soon serve for building and construction materials. While the main focus of Cabiokid remains on the food crops, these other species provide valuable resources without demanding extra time or labour.

Looking further into the future, we are interested in more than the constant production of one or a few crops. We have expressed interest in becoming a support centre for a government seedling production programme aiming to reforest denuded areas. Following a site evaluation and a memorandum of agreement with the national government, the farm recently acquired three Philippine brown deer, and will start breeding them. The positive reactions received from scientists and authorities encouraged us even more, and we are planning to breed other endemic animals in the near future as well. From the start, Cabiokid made a well considered choice to prioritise endemic plant and animal resources and make these its long-term goal. This was one of the reasons why we established the farm in such a way that income and production would start almost immediately.

Cabiokid today...

Positive results were visible much sooner than we ever expected. At present, after only five years, we are reaping many unexpected benefits. The orchard area is now producing abundant forage for goats and the native deer, which are completely self-reliant in food. The tree belt area which was planted with passion-fruit vines along with several pioneer tree

species has already given lot of fruits. The pioneer trees are more than one foot thick, and many of them are taller than 12 metres (which is even more surprising if we think that these trees come from seeds which we collected ourselves from selected mother trees in different areas). The prolific growth of cooking banana varieties under the trees prevents fires, and have been providing a good starch crop throughout the summer time. In all, such abundance of food has allowed Cabiokid to increase its animal stock.

Walking under a dense canopy in less than 4 years is a rewarding experience. Nowadays, Cabiokid supplies more than double its fuel needs. We already started constructing benches and sheds with the wood of pioneer species; trees which grew from seeds that we picked ourselves. By putting new life in the exhausted farm lands we reap more than we ever dreamt of. There is so much food available at the farm that it is impossible to compare our total yields with those of the neighbouring farms, most of which seem to die completely for 4 months or more during the dry season. It is now Cabiokid's task to regulate the entrance to the farm, as the abundance of food attracts interest from people and animals alike.

... a possibility for others to replicate

Many neighbours come to look at the houses and structures we built with local and renewable species. We share all such technologies and the needed plants and seeds with interested individuals. By promoting the use of local resources, Cabiokid also links up with local craftsmen to make and construct furniture and small housing units. Interest in Cabiokid increased even more when we started to introduce wildlife in the farm. The local people became more interested and took a second look at common hunting activities.

We believe that in essence, this system could be replicated by farmers in Nueva Ecija. While the principles of permaculture are easy for most farmers to comprehend, it is putting them into practice which often proves to be a stumbling block. Farmers may experience difficulties linked to the knowledge needed to manage a polyculture system, where different crops, plants and animals will need different levels of care and maintenance. The long-term solutions offered by a farming system such as the one developed in Cabiokid are frequently put aside because of immediate needs and pressing financial concerns. In many cases, farmers are not proprietors, but share the land with siblings and are only given control for a number of years. Having to vacate the land after a few years gives them little incentive to develop it from a long-term perspective. There is, at the same time, a persistent lack of financial and technical support from the government towards organic and sustainable agriculture.

Nevertheless, Cabiokid is primarily the result of a change of heart and attitude towards agriculture. In contrast to conventional farming, we started by collecting diverse seeds of native trees and plants wherever we could find them, and thus did not spend money on seedlings or other plant species. We made sure to keep a careful eye on the ecosystems where these plant resources were growing in order to ensure that the plants would not become invasive in their new home. We recycled all possible containers as seed boxes or potting containers. This, together with a careful planning, has been the key to success, already also seen in many other farms in the island of Luzon. ■

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