



Creating and Sharing Values of Sustainable Living through Bridging Diverse Types of Knowledge and Skills

Local people and groups have the necessary wisdom and capabilities to address local sustainability challenges and contribute to global sustainability. Changing the ways in which they consume and produce can reduce greenhouse gas emissions, resource use, and waste generation. Local groups across the world also protect the natural environment, and plan and implement disaster management measures.

However, such people or groups are sometimes challenged when faced with local and global sustainability challenges. Further, local families and groups are often reluctant to change their modes of production and consumption due to tradition or convention, and even if new behaviours are introduced, sometimes only partially adopt them. In particular, for the very poor, adopting new ways of doing things and participating in collective actions can be seen as a burden or risk.

Therefore, it is essential to clearly demonstrate the benefits and promote 'learning by doing' to help participating families and individuals adopt new patterns while contributing to sustainability at local and global levels.

1 The following values can be presented to local participants and organisations.

- a. **Cost reduction in production and consumption:** The economic, social and environmental costs for households and communities in many developing countries are increasing due to factors such as climate change, population growth and the over-exploitation of natural resources. In most cases, certain changes in technologies and lifestyles can improve socio-economic wellbeing and enhance environmental integrity by facilitating cost reductions in production and consumption. A project in Malawi has proposed residential building designs that incorporate alternative building materials and the use of renewable energy technologies (for lighting and water heating) as a strategy to reduce the adverse environmental impacts of urbanisation.



Malawi

Mainstreaming alternative building materials and renewable energy technologies for sustainable housing and cities

Most houses in Malawi's cities are built using bricks from wood-fired kilns. Due to the simple process and technologies involved, bricks are not baked in factories but rather in the localities where red clay soil is available. It requires approximately 500 kg of firewood to produce 1,000 bricks, hence an average house of 50,000 bricks requires about 25 tons of firewood. This means house construction is amongst the major drivers of deforestation and associated loss of biodiversity and ecosystem services in Malawi.

The Malawi project focused on demonstrating the use of alternative building materials and identified stabilised soil bricks and cement blocks as viable alternative sustainable building materials for domestic house construction. Through the project, students and builders involved in the project developed the capacity to mould cement blocks, and the beneficiaries developed an understanding of the tools and competencies that the youth and entrepreneurs needed in order to start cement block moulding businesses as a means of creating local jobs and protecting the environment.

The project was also involved in other activities, such as helping schools and community-based organisations plant and manage trees. There is a need to stress the importance of afforestation and tree planting not only to policymakers but also students and community members, owing to Malawi's annual deforestation rate of 1.6%, one of the highest deforestation rates globally. The project's bottom-up approach to engage and teach community members about the benefits of caring for their trees and also of spreading awareness on the need to use alternative building materials was crucial to its success.

Additionally, the project sought pathways for local institutions and communities to secure incomes from the international carbon trading markets. An international consultant analysed the carbon offsetting potential of some of the project's activities, namely the use of alternative building materials and planting in communities and at schools, and helped the project in identifying buyers of the carbon credits.

In such manners, the project provides a clear demonstration of the links between sound environmental management (reducing resource use) and the creation of green jobs.



b. Livelihood diversification: Communal production activities in rural areas can help secure more resilient family livelihoods by diversifying products such as crops, livestock and other foodstuffs. In Colombia, ways to expand income sources beyond agriculture are being explored by introducing ecotourism. Activities in urban areas can also support people in making more resilient livelihoods by, for example, capacitating those working in vulnerable sectors such as waste management, recycling or construction.

c. Health and environmental improvement: Introducing new ways of consumption and production can often help reduce local environmental issues such as air and water pollution. In Chile, geothermal energy was used to produce high-quality firewood to help reduce air pollution. Hydroponic farming in geothermally heated greenhouses promotes healthier lifestyles among the local population. In other projects, including the one in Colombia, animal wastes are used to produce biogas, support local energy supply, and reduce water pollution.

Moreover, people can secure more resilient livelihoods and have some leeway to take an active role in collective actions. Projects such as these can help people secure more resilient livelihoods and take an active role in collective actions, such as protecting the local environment. The project in Peru is a good example of this.

d. Broader and more proactive engagement with diverse people: Young people, women and others who have not been involved in local productive and social activities can often play crucial roles in local initiatives. The Peruvian project involved mainly illiterate women, who played a leading role in training and introducing technologies. In the Colombian project, young people led the introduction of new technologies and created a form of online information exchange as a response to the COVID-19 pandemic.

Strengthening the forest administration of indigenous territories in Amazonian reserves

Native communities have lived in the Amazon rainforest for centuries and have ancestral knowledge of natural reserves comprising large areas of forest biomass. Such knowledge can assist in efforts within Peruvian society toward mitigating climate change and preventing deforestation and forest degradation.

However, it is challenging for them to put their knowledge and skills to use toward such objectives. Most rural native communities in Peru, particularly those in remote areas in the Amazon rainforest, live below the poverty line, and often have insufficient access to basic utilities such as water and electricity and support from local or national governments. Increasing desertification due both to climate change and illegal logging activities devastates the ecosystem as well as livelihoods of these communities, placing them in a highly vulnerable situation. These vulnerable populations are faced with these issues daily and receive minimum public and societal support.

Engaging with indigenous communities such as these, who have extensive knowledge of managing ecosystems, not only improves their living conditions but also greatly contributes to strengthened efforts toward nature conservation and climate change mitigation (Hindou Oumarou, 2016).

The Fondo Verde project seeks to strengthen the technical capacities of indigenous communities to take the lead in forest monitoring and governance based on the concept of influencing local and national policies on climate change and forest management.



2 Closer evaluation and use of local knowledge and resources is vital to supporting sustainable ways of living.

- a. Underutilised resources:** Local societies often have diverse underutilised resources such as land, nature, and renewable energy sources. Local initiatives can identify, re-evaluate and utilise such resources to enable sustainable means of production and consumption. In Peru, the introduction of eco-stoves fuelled by biomass resources serves to exemplify how the combination of local resources with relatively inexpensive and easily controllable technologies introduced from outside the community can become a new resource supporting local life.

- b. Everyday activities and wisdom:** It is often possible to take advantage of the local knowledge embedded in everyday activities as a way to create valuable means of production and consumption. The production of dried fruit in Armenia is an example of how a local production activity can be refined and successfully turned into a saleable product. In Colombia, activities to reintroduce traditional cereals have provided an opportunity for a wide range of residents to put their knowledge to use towards local production.



Colombia

Recovery of crops through expert-local farmer collaboration

In many of the community-scale projects carried out, local valuable knowledge has been identified and utilised in the process of generating new ideas in collaboration with external experts. In a highland rural community in Colombia, experts from the Foundation for Sustainable Tropical Agricultural Production (UTA) heard Mr. Campo Elias Rodríguez, a farmer from San José de Miranda, comment: "We are the last generation who did not study but sow. Technology and education ended in the field." Such a comment from a local farmer, and also expert, points to both local and global challenges. Although broader and more diverse knowledge is available through generic forms of education, this education does not always serve local living in a meaningful way. To make knowledge serve local sustainable development, societies should pay more attention to how local individuals, families, or groups of people learn, test and apply knowledge in their real-world contexts.



Such perception of the challenges related to unsustainability among the local population inspired the community members and cooperating experts to initiate a project that led to the recovery of traditional wheat and rice, enabling them to reclaim their food sovereignty in integrated agro-ecological systems in Colombia.

Local experts from 21 families acquired and shared knowledge at joint training sessions entitled 'Sustainable Lifestyles Schools' alongside experts from other rural and urban communities. The participants tested and applied technologies for improving their day-to-day production and consumption. They set up Technology Baskets such as for skills for recovering the use of traditional crops, soil improvement and utilising renewable energy. The activity provided many families and communities a sense of hope, through the opportunity to identify and share the new ways of applying their traditional knowledge in order to strengthen the local production systems and local societies.

3

To create alternative patterns of local production and consumption, it is helpful to consider the related aspects such as conventional ways of living, from different angles, such as through combining different forms of wisdom or forming hybrid types of wisdom.

a. Resources and technologies: Application of technologies from outside, or re-evaluation of the situation from the perspective of outsiders, is often helpful when considering the possibilities of alternative ways of utilising local resources. Solar panels and water heaters or biomass stoves are typical examples of using simple technologies to take advantage of local resources. The reintroduction of traditional local cereals is another example where local wisdom is better utilised through evaluation from a different angle. The skills and ideas brought in by outsiders, scientists and technicians offer a high level of support, while people in localities should remain the key actors in local activities.

b. Channels to turn actions into values: In many projects, the benefits created through activities are locally consumed or sold in local or community markets to generate even more significant economic gains. The project in Malawi is more ambitious and seeks to link community-based tree planting activities with an international credit scheme to secure stable financial support for future activities. Networking with external organisations such as national-scale NGOs or expert groups is desirable for achieving broader value creation, such as through sales at external markets or seeking support from domestic or international schemes. In other words, aspects such as economic gain or other forms of value created need to be relayed within different national and global contexts when seeking broader opportunities for leveraging support, profile, funds or other benefits”].

c. Assessment, learning and monitoring perspectives: It is also important to evaluate the value gained from an activity from more than one perspective. The multifaceted benefits of local initiatives such as environmental and health gains, income generation and cost savings, and broader and more active participation of people can be assessed, learned from and shared by formal evaluation processes, such as through assessment of personal sentiment of local people, in order to gauge the efficacy of a certain project. For example, a project in Malaysia involved families, schools and food service sectors with the aim of jointly implementing actions to reduce food waste over a one-month period. Results from the participating students, households and factory employees were: 135.28 kg/day reduction in eight schools, 20.65 kg/day in 32 households and 63 kg/day in 27 food service providers, respectively. They noted that such

achievements also help reduce costs for schools, companies and households while meeting the objectives of food waste reduction in the country.

Armenia

Assessment by university students, farmers and other stakeholders of the environmental and economic aspects of a joint solar energy pilot

In evaluating farmers' needs and designing climate-friendly response actions, the project partners actively involved various stakeholders in considering the various factors that could impact the lives and wellbeing of the Solak community. The university students established a warm rapport with all stakeholders, particularly the farmers, who readily opened up and shared their feelings. The insights gained greatly assisted in arriving at a productive balance between environmental and economic gains, which was the most challenging part of the pilot implementation. While there was general agreement on the major need to use solar energy to irrigate arable non-watered lands located on a slope, different groups of stakeholders prioritized different needs. The farmers required water for irrigation but questioned the flat fee for the service regardless of use of solar energy; representatives from the local Water User Association (WUA) argued that a flat fee could not be avoided; the mayor and administrators questioned the economic value and immediate benefits of the project for the community; and the solar energy companies had reservations related to the technical status of the WUA pumping station. To reach a consensus, the project partners undertook numerous visits to Solak, organized stakeholder discussions and conducted technical evaluations. The community water pumping station was found to be in a very poor condition due to the lack of maintenance since its construction several decades ago. Following lengthy negotiations, the stakeholders agreed that the station should be made into a model working environment. The WUA invested in basic renovation of the pumping station and Solak community administration improved the state of the community land around it. Then, the project partners installed pumping equipment and solar panels, which have since been utilized with tangible and lasting benefits to the community stakeholders, and have positively impacted their daily lives. Farmers now have access to monitoring data since they jointly monitor the irrigation systems with the WUA. Moreover, while the government is developing a national programme to modernise irrigation systems, the community, based on its experience, is now able to apply for public funding schemes to scale-up their actions.



In short, local initiatives for sustainable living combine the wisdom, skills, resources and technologies from both local and external sources to create and share benefits that enable responsible living and reliable livelihoods for all in a community. However, the potential values or benefits of projects such as these are not instantaneously or automatically realised among participating communities, and require earnest efforts by the local actors themselves as regards learning, testing, application and evaluation in order to realise desired patterns of living aligned with local contexts.

The following points should be kept in mind in planning, implementing and supporting similar initiatives:

1 Activities should involve demonstration of the possible financial benefits to households as well as benefits in daily life. Identification and demonstration of such benefits assist in engaging local people with initiatives at the local level, although securing a profit is not the sole focus of such initiatives. It is also desirable to explore how to ensure these benefits are shared and that related decisions are made by those who are often disadvantaged in such communities as well as families.

2 Wisdom, technologies and resources have greater impact when combined. Local initiatives can seek to explore and elicit different points of view in order to revisit the status quo and re-evaluate possible alternatives to conventional production and consumption patterns. To this end, exchanges and experimentation are key actions throughout the process, driven by and including local people and supported by and contributed to by people from outside the community.

3 Profit/income generation can be considered for self-sustainable initiatives: At all stages of an initiative, it is worth considering the creation of viable, self-sustainable models of profit-making or income generation to support the activities. These include, for example, introducing products to markets, obtaining grants, and accessing credit schemes.

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