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RESEARCH ARTICLE

Pro-Poor Public-Private Partnerships (5P): Access to Affordable, Reliable, Sustainable and Modern Energy for Enhanced Rural Livelihoods

By Erick Ratajczak

Background: Pro-poor public-private partnerships (5P)

Traditional public-private partnerships (PPP) focus primarily on financial return and profits for the private sector. These types of projects are largely commercial and market driven. On the other hand, rural energy initiatives are often fully grant based with financial viability not a strong consideration as projects are framed to deliver a social good. However, public funds are often limited in most developing countries in the Asia-Pacific region, which slows down the development of energy access initiatives for rural communities. Recognizing the need for greater private investment to meet the persistent and large financing gap in the rural energy sector, ESCAP had worked together with the People-Centered Business and Economic Institute (IBEKA) in Cinta Mekar, Indonesia, on a Pro-Poor Public-Private Partnerships (5P) approach to widening energy access with locally available renewable energy resources. 5P aims to identify a blended financing approach where public sector funds are effectively leveraged to attract private sector funds. The 5P approach involves redefining the role of energy project stakeholders and focuses on community participation and ownership. In this context, a *pro-poor* approach to energy access places ***empowerment*** and ***socio-economic development*** at the centre of an energy project.

Building upon the pilot project in Cinta Mekar and with the financial support of the International Fund for Agriculture Development (IFAD), ESCAP has further piloted an integrated strategy for rural development by widening access to energy services through private sector investment in small-scale renewable energy-based electrification projects in Nepal and Lao People's Democratic Republic (PDR). The projects are located in three demonstrations sites, two in Nepal and one in Lao PDR. The first project, an 18kWp solar-PV microgrid developed in Baidi, Tanahun District, Nepal implemented by the Alternative Energy Promotion Centre (AEPC) was launched in October 2015. The system is jointly owned and operated by a private sector company, and the local community in partnership.[1]

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Energy as an enabling factor in enhanced rural livelihoods

Lack of affordable, reliable, sustainable and modern energy is a key barrier to the most basic development. For millions of people, not having access to modern energy services means not having access to efficient lights, water pumps and agro-processing equipment (affecting agricultural and economic productivity), and not being able to keep shops open in the evenings. This also results in fear of accidents after dark and, in many cases, ending the productive day at sunset. In 2015, countries committed themselves to the **2030 Agenda for Sustainable Development with 17 Sustainable Development Goals (SDGs).** SDG 7 focuses on access to affordable, reliable, sustainable and

[1] More information on the pilot projects is available upon request.

Box 1: Energy access in numbers

There are two indicators under SDG 7.1 "By 2030, ensure universal access to affordable, reliable and modern energy services":
(1) Proportion of population with access to **electricity**
(2) Proportion of population with access to **clean fuels and technology**.

Despite huge strides in electrification, large sections of the population are still unable to benefit from electricity. In the Asia-Pacific region, 426.1 million people remain without access to electricity. Many of these people are in rural, geographically isolated and poor communities. In these areas, where utility grid extension is often prohibitively expensive, decentralized energy solutions will play a vital role in providing access to modern and reliable energy services.

For clean fuels and technology, the numbers are even more shocking. In the Asia-Pacific region alone, almost 2.01 billion people still rely on unsustainable biomass for cooking and heating. Moreover, the rate of access per year is still too slow to meet the 2030 objective.

Data available from: Global Tracking Framework, 2017. Available from http://www.worldbank.org/en/topic/energy/publication/global-tracking-framework-2017.

modern energy for all, with targets addressing energy access, renewable energy and energy efficiency (see Box 1).

The 17 SDGs are interconnected and indivisible; energy, the focus of SDG 7, is not only a goal in itself, but an enabling factor for sustainable development across sectors.

In rural communities across the region, there remains a heavy reliance on fossil fuel or traditional biomass powered applications (diesel, charcoal, fuelwood) and kerosene for energy needs. In fact, in Nepal, rural households can spend around 11 per cent of their monthly income on health-damaging and poor-quality energy sources, such as firewood, charcoal and, to an extent, kerosene. Moreover, households have reported spending 14 to 16 hours per month collecting wood and other biomass for cooking and heating. As an example, widening access to clean fuels and technologies, an often overlooked but important dimension within SDG 7, helps to reduce deadly indoor air pollution and can increase safety by eliminating kerosene lamps and other polluting fuel. This illustrates the clear connection to SDG 3 on good health and well-being, but also SDG 5 on gender equality, as women are often responsible for time-consuming collection of traditional biomass, which in turn limits the potential for other productive activities. With the introduction of the solar microgrid in Dubung, all households stopped kerosene use for lighting. As a result, the time children spent studying increased by an average of 10 hours per household,[2] contributing to SDG 4 on quality education. In fact, 125 of 169 targets within the 17 SDGs are linked to energy.[3] However, from the energy sector's perspective, SDG 7 is also reliant on other development sectors to enable sustainable development.

Productive end use of energy

The concept of access to energy tracked with a binary (access, no access) metric is the indicator adopted for SDG 7.1. However, measuring whether someone has energy access or not does not help us understand how access to energy impacts socioeconomic development. The development impact of energy services largely depends on other dimensions including availability, reliability, quality and affordability of the services.[4] In this connection, understanding the role of energy in rural livelihood enhancement requires a discussion on the application of productive end use of energy (PEU). For this article, PEU is understood as "agricultural, commercial and industrial activities involving energy services as a

[2] Data collected from household survey carried out in Baidi, December 2016.
[3] World Bank, State of Electricity Access Report (SEAR) 2017. Available from http://documents.worldbank.org/curated/en/364571494517675149/full-report.
[4] http://www.worldbank.org/en/topic/energy/publication/energy-access-redefined.

FROM CAPSA

Dear Palawija Readers,

We are pleased to present this August 2017 edition of *Palawija Forum*. This edition will raise the issue of a "holistic approach to enhanced rural livelihood." In 2015, countries adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). These goals should not be addressed in separate and isolated ways. Rather, it has been emphasized that SDGs represent universal, indivisible and interlinked development challenges, which require a holistic policy approach through broader partnership. A holistic and coordinated approach is needed to formulate and implement innovative win-win policy options, and position them in the comprehensive national development strategies and plans. Articles in this edition give some perspectives on how a holistic approach could be operationalized in various policies or projects to enhance rural livelihood.

The first article illustrates an ESCAP project on widening access to rural energy through Pro-Poor Public-Private Partnerships (5P). The 5P approach consider the importance of rural community empowerment and socioeconomic development to ensure the energy access can enhance rural livelihoods more effectively and more sustainable. This article also shows some cases of the application of productive end use of energy (PEU) in rural livelihood enhancement.

The second article is about the indicator for sustainable agriculture, which was discussed at the SDG interagency and expert working group. The article discussed the potential benefits of promoting sustainable agriculture to achieve other SDGs and the importance of integrating the multiple benefits into the measurement of sustainable agriculture to support a holistic approach in SDG implementation. This edition also shares a success story on a win-win micro-entrepreneur network for community health in Myanmar, and a review of the Sustainable Development Goal Index and Dashboards Report.

We hope you find the information provided in this forum useful, and we welcome any feedback and contributions to future issues.

CAPSA Palawija Team

direct input to the production of goods or provision of services."[5]

For example, organically grown opportunities emerge as a result of productive time beyond daylight hours. These activities are facilitated through reliable and modern lighting. During evening hours, handicrafts can be undertaken, to support income. In Baidi, for example, villagers use the light to weave traditional baskets to be sold at market during festival seasons. Another example can be found in poultry farming, night-time feeding, which requires a few hours of light at night, can generally increase the overall feed intake for chickens, reducing the period from hatching to market from 3 months to 2 months.[6] Overall, access to energy can trigger profound social and economic transformation by facilitating the introduction of new income generating potential, increasing economic productivity or adding value to production.[7]

Access to water is one of the most important factors for agricultural production and can, depending on the context, translate into higher yields as well as the potential for cropping multiple times in one year, including the introduction of high-value cash crops. In this connection, solar based-pumps can be a cost-effective and cleaner solution compared to prevalent fossil fuel powered pump. However, as solar pumps do not require fuel and have a lower operation cost compared to diesel, there can be a risk of unsustainable and excessive water withdrawal. This risk can be largely mitigated through a cross-sectoral approach in system implementation and planning,

[5] Definition from Productive Use of Energy (PRODUSE). Available from: www.produse.org.
[6] Based on interview with poultry farmers in Baidi.
[7] See a case study from IBEKA in separate box.

as well as measures which promote water-use efficiency and technology deployment, such as micro-irrigation.[8] Farmers can add value to their crops before going to market through post-harvest processing. This includes milling, grinding, drying of products, such as maize, Job's tears or non-timber forest products (NTFP). Cold storage (refrigeration) prevents spoilage during and after processing of goods. In fact, approximately one-third of food produced for human consumption is lost or wasted globally, and in developing countries more than 40 per cent of this occurs at the post-harvest and processing stages.[9] The opportunities are also not limited to the agriculture sector and include opportunities for micro and small business establishment. Ideas proposed by community members to establish businesses in Baidi include a tailor, an ironing-shop, a motorcycle repair shop and a copy-point. Although the potential ideas are endless, the limits of the energy system need to be considered to ensure that benefits are spread out among households, and not a redistribution of wealth benefiting a few households.

Sustainability-led approaches to energy access

Communities have distinct social, economic, geographical and governance contexts, and thus we cannot assume each has the same energy requirement or will use energy in the same way. Energy systems need to ensure the needs of the end users are being met, without negative environmental impact. Ignoring the local context puts the sustainability of energy systems at risk.

Energy systems which underperform or fail in the long-term, not only hinder the potential of livelihood improvement but also reduce confidence in clean and renewable energy in rural communities. There are various reasons why energy systems do not produce the intended socioeconomic benefits; these include:

- Lack of community participation and preparation
- Technology selection based on kilowatts and not actual need
- Operation and maintenance of the system
- Financial viability of the energy system

Against this background, the 5P pilots emphasized the critical role of collecting the **right information** to make decisions and ensure the local community is equipped and empowered to harness the benefits of modern energy through **community mobilization**.

Meeting the needs of end users, requires understanding those needs through data and information collection and local engagement. For the 5P demonstrations sites, various assessments were undertaken in coordination with the local community and authorities. These included: (a) a socioeconomic survey to understand current household income expenditures and ability to pay for energy services; and (b) a feasibility/ environmental assessment study which aimed to identify the energy technology most suitable for the ecological context. In the majority of cases, both of these assessments are common practice in

Table 1. Examples of applications of decentralized renewable energy solutions

Energy Service	Livelihood Benefits	Potential Renewable Energy Service
Lighting	Study time, longer productive hours, safety, improved health care	Wind, solar-PV, hydro, biomass
TV, computer, Internet	Education, access to news and communication, more commercial service, entertainment	Wind, solar-PV, biomass, hydro
Battery charging	Services for end users (phone charging, portable lighting)	Wind, solar-PV, biomass, hydro
Irrigation	Better yields, higher value crops, greater reliability, growing during periods when the market prices are higher	Wind, solar-PV, biomass, hydro
Water pumping/purification	Improved sanitation and hygiene, increasing productivity, livestock watering	Wind, solar-PV, biomass, solar heat, geothermal
Grinding, milling and husking	Value added product from raw agricultural commodity, reduced time	Wind, PV solar, biomass, hydro
Drying	Better food preservation	Biomass, solar heat
Refrigeration	Avoiding early spoilage, local market development, selling chilled projects, improving health care	Wind, PV solar, biomass, hydro

Note: Adapted from AEEP and ARE, 2015.

[8] More information on solar-pumping can be found http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=2736.
[9] FAO, http://www.fao.org/docrep/014/mb060e/mb060e00.pdf.

developing energy projects; however, in order to have a comprehensive understanding of how energy services can enhance livelihoods a more holistic approach is necessary. For the 5P projects, this came in the form of a "Business Opportunities/Value-Chain Assessment". This assessment, broadly covered the following categories:

- **Productive end use potential**: Determine where sustainable energy could have the biggest impacts on income through market and value-chain assessment. For instance, identify whether there is demand for a certain product (agriculture, handicraft, livestock or NTFP) and the necessary inputs to bring the project to market.
- **Market assessment**: Understand the nature of the market structure and agricultural value chain to ensure that farmers are equipped with the information necessary to be equal partners. This also requires identifying who are the stakeholders in the sector, including government agencies, which can provide the necessary support for agricultural production.
- **Cash-crop identification**: In connection to the market assessment, identify potential cash crops that can be sold at market, including all the necessary inputs, such as access to seed and irrigation water.
- **SME potential**: Identify alternative energy use opportunities. Productive use of energy is not limited to agriculture and various opportunities for small business exist. However, in order to ensure equitable access, business planning is necessary.
- **Source finance (microfinance)**: Identify sources for financing (microfinancing). With limited surplus capital to buy the necessary technology, lack of access to financing is a key bottleneck in scaling-up income-generating activities.
- **Identify skill and capacity gaps**: Includes identifying potential operators and managers for the energy system, as well as entrepreneurs within the community.

Furthermore, lack of community engagement is another key risk to energy system sustainability. Human capital is a critical asset, and energy can be positioned as a tool of empowerment. For example, the outflow of young, enthusiastic and skilled young people from the community to settle in urban areas or abroad deprives a community of potential innovative new business and affects the relative energy demand of the system. However, energy is not enough, as there is a need to address fundamental living conditions in the community. This includes, access to proper hygiene and sanitation, access to health care, and provision of skills training and education.

A "win-win" approach with sustainable energy

The ability to pay for modern energy services in rural communities is a key challenge for decentralized systems. Tariff rates for decentralized energy services are often considerably higher than national grid tariff rates, while the population being served are likely to be situated at the lower levels of income scales. Moreover, it is a paradox that higher-income households tend to pay a smaller portion of household income on energy than their lower-income neighbours. Therefore, building the capacity of consumers to establish new productive end uses has the dual benefit of increasing incomes as well as creating the demand for electricity.

From the end user's side, affordability of services increases with new income generating activities, and as reliable and modern electricity becomes an integral component of everyday livelihood activities, the overall commitment to maintaining an operational system over the long-term is increased. From an energy provider's perspective, basic household consumption is not enough to ensure a financially self-sustaining energy system. In Baidi, the energy demand is largely household consumption, albeit that a few small businesses, such as a cold storage shop have emerged. Thus, the demand for energy, or peak-load, averages around 9-10 kW. For an 18kWp system, the current demand does not maximize potential revenues. Thus, integration of productive energy-use activities is needed to reduce financial risks on the part of both consumers and the power service provider.

Photo 1. The first shop in Baidi Village, Nepal with commercial refrigeration, powered by an 18kWp solar microgrid.

Conclusion and way forward

Governments need to create a policy framework to facilitate more cross-sectoral cooperation between development stakeholders, in particular the private

sector, on sustainable energy development at community level. Often done on an ad hoc, project-to-project basis, a more institutionalized approach is necessary in order to reduce transaction costs and more efficiently coordinate the use of limited financial resources. This requires long-term and stable policy, ensuring that both off- and on-grid electrification is well planned and not in conflict. Potential outcomes, including rural development, increased agricultural productivity and poverty reduction serve broader development interests beyond energy production and consumption. Therefore, opportunities exist to collaborate across sectors on a common project that serves multi-stakeholder interests. Communicating the benefits of collaboration, as well as the lost opportunities or risks of operating in silos is an important step to ensuring that energy access can enhance rural livelihoods.

Ultimately, access to modern and reliable energy services is not a panacea to the challenges rural communities face. However, with a holistic understanding of the needs of local communities and a multitude of inputs, such as infrastructure, knowledge and access to financing, there is potential for profound development impact.

For more information on Pro-Poor Public-Private Partnerships (5P) please contact ESCAP Energy Division at: escap-energy@un.org.

(List of references can be made available upon request)

Cinta Mekar Pro-Poor Public-Private Partnerships (5P)

Cinta Mekar 5P Project is a project implemented by IBEKA and UNESCAP in 2003-2004 to build a 120 kW microhydropower plant, connected to the grid and generating income from electricity sales to PLN (national electricity utility). The goal is to demonstrate a new model, where the private sector is involved in an investment utilizing natural resources in partnership with the local community, generating income for both.

The community's share of income from the power plant operation is managed by a cooperative, named *Koperasi Mekarsari*. It has improved access to education, health care and finance, as well as contributing to infrastructure and public facility development, with the poorest members of the community prioritized. While providing those benefits to the poorest, the cooperative is facing a growing challenge to benefit more of the community, due to limited resources and available income they presently have. The cooperative strongly believes that the current programme needs to be further maintained. One strategy involves creating new enterprises that utilize existing community products to earn income and create jobs in the village. An existing product with high potential is banana. From Cinta Mekar alone, two truckloads (about 4 tons) of bananas are transported every week; a mix of Cavendish bananas and various types of lesser economic value. The cooperative decided to process low economic value bananas into banana flour. In the future, they plan to expand the range of raw materials to rice, sweet potato, taro, etc.

The processing facility utilizes an existing building near the power plant, and uses the electricity from the power plant to minimize the cost. The renovation and equipments was funded by a corporate social responsibility programme of Lundin Oil & Gas BV. The capacity-building training was held in cooperation with the Center for Appropriate Technology Development of the Indonesian Institute of Science (*Balai Besar Teknologi Tepat Guna*, BBTTG-LIPI), which also agreed to buy some of the product for their own research purposes. Currently, the biggest challenge for the cooperative's banana flour enterprise is marketing. The main target market was producers of baby and healthy foods that require the product to be certified organic; this needs further effort, both technically and financially. Alternatively, the cooperative is also trying to develop products from banana flour (e.g. cake, noodles, etc.). As the production is based on an irregular market, the cooperative and IBEKA are still looking for a market with better potential.

Source: Adi Laksono, IBEKA

Photo 2. The banana flour production training in cooperation with BBTTG-LIPI Subang (May 2013)

Enhanced Rural Livelihoods as a Benefit of Promoting Sustainable Agriculture: Summary and Analysis of the Discussions on the Indicators for Sustainable Agriculture

SHORT ARTICLE

By Nobue Amanuma

Background

Sustainable agriculture produces multiple benefits. Beyond its primary role in providing food and nutrition, sustainable agriculture enhances rural livelihoods, moderates climate impacts, conserves land and natural resources, processes organic waste, preserves ecosystems, and maintains landscape and cultural traditions. Many of these benefits are interlinked and together reinforce sustainability and resilience of agriculture. Among the 17 Sustainable Development Goals (SDGs), which are indivisible and integrated, sustainable agriculture is highlighted in SDG 2.4.[1] In the efforts to achieve the 2030 Agenda for Sustainable Development and the SDGs in an efficient manner, it is important to note the potential benefits of promoting sustainable agriculture and how they may contribute to the attainment of other SDGs. At the same time, it is important to integrate the multiple benefits into the measurement of sustainable agriculture, so that the indicator supports a holistic approach to the implementation of the SDGs.

Currently, an indicator for sustainable agriculture (SDG 2.4.1) is being developed for effective follow-up and review. Having participated in the process to develop the methodology of the indicator, the author analyses whether the proposed indicator and discussions at the FAO Expert Meeting for SDG indicator 2.4.1 held in April 2017[2] reflect the multiple benefits of sustainable agriculture.

Summary of discussions on the indicator for sustainable agriculture at the FAO expert meeting

This Expert Meeting gathered statisticians and technical experts to provide guidance and support on the methodological work being conducted for SDG indicator 2.4.1, which is defined as "percentage of land area under productive and sustainable agriculture". Building on the previous process, the following formula was used to define the indicator:

Per cent of land under productive and sustainable agriculture = Area under productive and sustainable agriculture / Agricultural area

Since the denominator, agricultural area,[3] is an established indicator with time series data, the discussion focused on the numerator "area under productive and sustainable agriculture". Key questions included: Which economic, social and environmental subindicators would constitute "the area under productive and sustainable agriculture"? Where should the thresholds for sustainability for each subindicator be? How can the subindicators be combined to compute the indicator? From what level and how should the data for the subindicators be collected and calculated?

Subindicators

As a common tool to measure the progress against SDG 2.4, the indicator should be practical, simple, affordable and relevant to both developed and developing countries. These principles limited the desirable number of subindicators to approximately 10. In discussing the subindicators for sustainable agriculture, the participants were also encouraged to keep in mind the principles that are part of broader concepts such as resource efficiency, conservation of ecosystems, protection and improvement of rural livelihoods and social well-being, enhancement of resilience and improvement of governance. The following subindicators were initially proposed for consideration (see Table 1).

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[1] "By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality."

[2] Key materials are available at http://www.fao.org/sustainability/news/expert-meeting-sdg-indicator/en/.

[3] Agricultural area = arable land + permanent crops + permanent meadows and pastures.

Table 1. The list of proposed subindicators by dimension

Dimension	Subindicators
Economic	Labour productivity
	Land productivity
	Farm income/profitability
Social	Decent work
	Household poverty
	Household/farm resilience
Environmental	Soil
	Water use
	Water quality
	Land-use change
	Biodiversity
	Energy use
	GHG emission

The participants considered these subindicators in groups and came up with a new list of proposed subindicators (see Table 2), which was further discussed.

Table 2. The list of proposed subindicators by dimension after group discussions (not final)

Dimension	Subindicators
Economic	Net farm income
	Average labour productivity
	Access to credit finance and insurance
Social	Access to knowledge and education
	Access to land and security of tenure
	Gender equality (in interhousehold decision-making)
	Decent work (wages)
	Occupational/health safety
	Age profile of farm operators/workers
	Income diversification
Environmental	Soil health
	Water use
	Water quality
	Field burning
	Biodiversity
	Energy use
	GHG emission

Thresholds

The participants also discussed the threshold for each subindicator to determine what is sustainable and what is not. It was challenging to define thresholds that were universal, meaningful and based on established, recognized and scientifically sound standards for some subindicators, in particular social and some environmental subindicators. Rather than setting thresholds, it was suggested that showing change over time in terms of the size of change and the direction of change (e.g. positive or negative) may be more important for some subindicators.

Flexibility and use of the indicator

The discussions highlighted the existing differences in styles, sizes and practices of agriculture among the countries. An important challenge in developing the indicator was to ensure intercountry comparability and, at the same time, give flexibility to respective countries to establish their own targets and thresholds. It was suggested that the long list of subindicators be provided to countries for consideration and that only some of the subindicators be used for the indicator of SDG 2.4.1 for intercountry comparison and global reporting.

Reflection of the discussions in relation to multiple benefits of sustainable agriculture

The discussion recognized the multidimensional role of agriculture. The discussion started by examining economic, social, environmental and resiliency-related subindicators, to which governance was also added. The discussion recognized the multiple aspects of rural livelihoods, such as income, decent work, access to land and security of tenure. Income diversification and access to credit finance and insurance were included as proposed subindicators for resiliency of rural livelihoods. Health and education are key aspects of multidimensional poverty, which is more widely spread in rural areas than urban areas in many countries in Asia and the Pacific; proposed subindicators included both of these aspects.

However, multidimensional “benefits” of sustainable agriculture were not the focus of the discussion. Rather, the focus was where thematic problems lie in making agriculture sustainable and how to capture these problems in subindicators. Therefore, the proposed

subindicators constitute minimum building blocks of sustainable agriculture. As a result, the subindicators omitted some important benefits of sustainable agriculture, such as maintenance of cultural traditions, landscape and enhanced ecosystem services.

While it would have been ideal if the indicator could capture all of these benefits of sustainable agriculture, some of the benefits that were left out were difficult to measure. In addition, it was difficult to capture all of them in light of the aim to create an indicator that is simple (which means a limited number of subindicators), affordable, practical and relevant to all countries. While the benefits of sustainable agriculture can vary and are not universal among and within countries, the problems that prevent sustainable agriculture were common to many places. Therefore, it was more practical to identify what prevents sustainability and turn it into subindicators.

Implications for policymakers[4]

The indicator for sustainable agriculture will be useful in measuring the respective governments' progress against SDG 2.4 in the context of intercountry comparison. The subindicators will be particularly useful in identifying where the problems lie. However, if policymakers rely solely on the proposed subindicators, they may miss out important opportunities to promote benefits associated with sustainable agriculture. As the subindicators are thematically organized, policymakers may be inclined to tackle different thematic areas independently to address problems that prevent sustainable agriculture.

However, promotion of sustainable agriculture requires a holistic and integrated approach because the aspects highlighted by subindicators are interlinked. Identification of how they are related and where the leverage points may be can promote synergies among the themes that these subindicators represent.

Policymakers need to be aware of the limitations of the indicators. For example, since the indicator is the area under productive sustainable agriculture, distribution and location of farms under sustainable agriculture are not captured. Because these factors can be important to achieving some benefits, such as landslide and flood prevention, a landscape approach to sustainable land use will be an important concept to integrate in the strategies to promote sustainable agriculture. Also, the indicator does not capture the level of sustainability, because as long as a farm exceeds all of the thresholds, it is considered sustainable.

To address the limitations of the proposed indicator, policymakers need to take a holistic approach to identify relevant and important benefits that they would like to achieve by promoting sustainable agriculture in their respective countries. Enhanced rural livelihoods should be considered one of the major benefits. They should also find systems to achieve these benefits and, if appropriate, consider adding their own unique subindicators to promote multiple benefits.should be considered one of the major benefits.

(List of references can be made available upon request)

[4] The implications are discussed based on the opinions and proposals shared at the expert meeting. The final design of the indicator may be different.

SUCCESS STORY

The Win-Win Network in Myanmar

By Henriette Ceyrac

Myanmar is one of the poorest countries in Asia and is ranked 145 out of 188 countries in the Human Development Index list. Of Myanmar's population, 65 per cent still live in rural areas, where casual labour and small-scale farming are the most common form of primary livelihood. Livelihoods are conditional on seasons and vulnerable to climate change-related conditions and extreme weather. At the same time, long-term chronic underfunding of the public sector has left Myanmar with a weak health system, a heavy burden of disease, and high maternal and child mortality rates.

For the past 10 years, Living Goods has operated in East Africa, creating and supporting networks of microentrepreneurs who go door to door to provide support to pregnant mothers, diagnose and treat sick children, educate families about healthy practices and sell health-focused products, such as modern contraceptives, diarrhea treatments and nutritious porridges. By combining best practices from business and community health, the Living Goods model reduces child deaths by 27 per cent for less than two dollars per person per year. In 2014, Living Goods formed a partnership with PSI, a major international health NGO, to adapt this model in Myanmar. PSI has more than 20 years' experience operating in Myanmar, tackling reproductive health, maternal and child health, nutrition and non-communicable diseases by delivering education, services and products through networks of providers, volunteers and drop-in centres. Living Goods, with expertise gained from operationalizing their model in Uganda and Kenya, provides technical support to PSI Myanmar on the design and implementation of the network.

The Win-Win network launched in 2015 in the Irrawaddy delta and has since grown to 169 trained agents over three townships – 88 per cent of which are women. Win-Win sales agents are independent microentrepreneurs, who earn a motivating income—on their own schedule—by earning a margin on the products they sell to their own communities. They are not paid employees; they are empowered microentrepreneurs improving the health of their neighbours. Their product basket of goods includes general medicines, water purifying powder, fortified rice, contraceptives, rehydration salts, household durables such as improved cook stoves and solar lamps, and high-sales rotation hygiene products. By working a few hours a day, most agents are already generating $70 per month in sales and clearing 14 per cent in profit. This is particularly valuable to women who often must juggle the competing demands of family, work and household.

PSI Myanmar acts as wholesaler to the entrepreneurs, retaining a small margin on product sales to cover the costs of recruiting, marketing, training and managing the network. The project is currently recovering 50 per cent of total costs—including the cost of all commodities—and this is expected to increase to 90 per cent by end 2018.

A detailed agent screening and selection process combined with highly practical training are critical success factors that lead to rapid skills development and immediate income generation, as well as high levels of community acceptance. Agent selection follows consultation with the local community and an assessment of prior business skills, health experience and interest in serving the community. Most of the agents have some prior selling experience and are ready to work three to four hours per day, each covering about 50 households in their community. They receive initial training on health products, durable goods (solar and clean cook stoves) and practical business skills. Agents are also trained to provide health education sessions that drive healthy behaviours in the community, while increasing their sales. Upon completion of the training, they are provided with a free “business starter kit”. Agents purchase an initial product basket with a mix of health and other products. The product mix and prices are constantly adjusted to respond to local demand and changing market conditions.

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The agents are given clear and simple sales objectives and receive monthly personalized coaching from the Win-Win field staff. Best-performing agents are recognized and receive certificates at monthly reconciliation and coaching meetings.

By 2020, Win-Win hopes to grow from 169 agents across three townships to 700 agents across seven townships. While expanding, more assessments will be conducted to increase the health and livelihood impact of the network, and identify paths to national scale. Separate pilots will be conducted to test the integration of mobile technology, malaria testing and treatment, and an exploration of the role of Win-Win type-agents in the new Universal Health Coverage system that PSI is designing in partnership with the Myanmar Ministry of Health. To succeed, Win-Win needs support from funders to fuel its longer-term expansion and from the Myanmar government to deepen its impact. The project is open to collaboration from partners who want to join forces to improve community health and livelihoods in Myanmar.

A year and a half after joining Win-Win, Ma Aye Aye Aung runs the biggest grocery shop in Ywar Ma village, Magway Division and is regularly awarded as a top-performing agent. She is able to send all of her seven children to school, and has invested in the onion farm where her husband works.

CAPSA-MARDI Successfully Organized a Regional Workshop on ICT Application for Resilient Agriculture

NEWS AND ACTIVITIES

ESCAP's Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA-UNESCAP), in collaboration with the Malaysian Agricultural Research and Development Institute (MARDI), organized the Regional Training Workshop on Transfer of Agricultural Technology with Specific Focus on "Application of ICT for Resilient Agriculture" from 18 to 20 July 2017.

Preceded by a one-day Technical Workshop on Distributional Effects of Disasters and Climate Change on Food Security in ASEAN, which was organized by the Economic Research Institute for ASEAN and East Asia (ERIA) held on 17 July 2017, the CAPSA-MARDI Regional Training Workshop was attended by over 50 international and domestic participants including government officials from 12 Asia-Pacific countries.

Full article: http://uncapsa.org/?q=CAPSA-MARDI-Regional-Workshop

REPORT REVIEW

Sustainable Development Goal Index and Dashboards Report Illustrates How Achieving the Goals is a Global Responsibility

By Calin Brown

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As a complement to the official United Nations Sustainable Development Goals Indicators and the voluntary country-led review process, the Sustainable Development Solutions Network (SDSN) and Bertelsmann Stiftung jointly began issuing the Sustainable Development Goal Index and Dashboards in 2016. The purpose of the report is to raise awareness about where countries stand in terms of progress on the Sustainable Development Goals (SDGs).

This July, the SDSN and Bertelsmann Stiftung released the 2017 edition of the SDG Index and Dashboards.[1] In general, countries still lag in their progress toward achieving SDG 2 (improved nutrition and sustainable agriculture) and clear indicator gaps remain – the sole indicator for sustainable agriculture is measurements of nitrogen-use efficiency. According to the 2017 report, several OECD[2] countries are rated "red" on SDG 2 progress because their agricultural systems are unsustainable. While East and South Asia outperform many other developing regions on progress on the SDGs, the region continues to face challenges in SDG 2, SDG 3 (health) and SDG 4 (education).

A focus in this report is the impact of "spillover" effects. International spillover effects occur when one country's actions generate benefits or impose costs on another country that are not reflected in market prices. Negative effects tend to flow from rich to poor countries. A few spillover effects connected to agriculture and which illustrate SDG 2's relationship with other SDGs are listed below:

Spillover 1 – Groundwater depletion embodied in trade: Trade in food, timber, industrial commodities, and so forth, entails the use of water. Agriculture is by far the main water user, with irrigated agriculture accounting for 70 per cent of water withdrawals and a high share of water consumption. Water availability varies among countries, so the result is that in countries, such as India and Iran where aquifers are heavily overexploited, importing groundwater depletion would have terrible effects, including lower crop yields.

Spillover 2 – Biodiversity loss embedded in trade: The main link between biodiversity loss and trade is the production of agricultural goods. The report states that "Excluding invasive species, agriculture and forestry account for 31 per cent of biodiversity loss (Ramankutty *et al*., 2008), and about 30 per cent of this biodiversity loss is attributed to international trade in food, fiber, bioenergy, and timber (Lenzen *et al*., 2012b)." Consumers in high-income countries cause threats to species through demand for agricultural products that are produced in countries with lower per capita incomes. Past research has demonstrated that a few crops stand out as having high impacts on biodiversity, including sugar cane, palm oil, rubber and coffee.

Spillover 3 – Pollution from developed countries: Trade and development trajectories in developed countries can all have spillover effects on other countries; for example, fossil fuel emissions that cause rises in temperature. Rising temperatures, changing precipitation patterns, and the intensity and frequency of extreme weather events can adversely affect agricultural production systems, which in turn constrains the achievement of "zero hunger" and nutritional objectives under SDG 2.

The spillover effect highlighted in this report demonstrates how achieving SDG 2 is not an isolated effort, and instead is interlinked with a broad range of development efforts made by all countries.

[1] The SDG Index and Dashboards 2017 are available at sdgindex.org.
[2] The Organisation for Economic Co-operation and Development.

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