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Lucubrate

Inside

Is there a General Key for Unlocking the Door to Sustainable Development for Rural Communities?

Knowledge and well-educated people.

Knowledge for development

Photo by: Karl Skaar

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Knowledge and well-educated people

I know many well-educated and highly skilled people, people with knowledge. Many with degrees from the University are following up their good and important work, as skilled people; they do fantastic and priceless work. These people contribute to the community and to make the society grow.

For decades, education and knowledge have been one of the most important pillars in the developing of the countries. The information and communications revolution and the changes brought to teaching and learning methods are strong contenders.



Photo by: Imago

Education as a fundamental driver

“Education is a fundamental driver of personal, national and global development”^[1].

Increasing the skills, knowledge, and qualifications of individual workers is critical to support to a country’s businesses and drive improvements in the productivity of the economy while fostering greater levels of workforce participation.

According to United Nation Educational, Scientific and Cultural Organisation (UNESCO), a sustainable development of a country can be achieved through learning: learning to be, learning to live, learning to do and learning to know. The path of learning only can be possible with education.

“All countries, regardless of their national wealth, stand to gain from more and better education. According to a recent OECD report, providing every child with access to education and the skills needed to participate fully in society would boost GDP by an average 28% per year in lower-income countries and 16% per year in high-income countries for the next 80 years.”^[2].

People with less education

I know many people with nearly no education and no formal skills. Many people without degrees from the University and Vocational skills do fantastic and priceless work in the society. Like Laban in Uganda. He is a bodaboda-man. Motorbike-taxi in Kampala. He transports people to and from work. This gives him his daily income. He uses his money for the family upkeep and pays school fee for his four kids. Recently he told me on Facebook that “the business is going well”.

I am sure if people like Laban have had the possibility to better education, they could contribute more, and the country



could develop faster.

Laban, the bodaboda-man

Photo: Karl Skaar

“Addressing the fact that an estimated 250 million children worldwide are not learning the basic skills they need to enter the labour market is more than a moral obligation. It amounts to an investment in sustainable growth and prosperity. For both countries and individuals, there is a direct and indisputable link between access to quality education and economic and social development.”^[2]

Transfer knowledge

One huge challenge is to transfer knowledge from countries that are well equipped with teachers, schools, and skills to countries that don't have that. We can use new solutions to contribute to good education and skills to more people.

“In the future, new information and communication technologies are expected to stimulate the expansion of educational opportunities and to improve educational quality at the national and global level, by offering a

variety of innovative learning channels. For example, the ability to use new technologies to build borderless networks among schools can offer opportunities for students in low-income countries to learn from teachers in advanced countries – and vice versa.”^[1]

The internet and the smartphones have given us the possibility to skill people independent of country borders. If the education and training are accessible online at an affordable cost, more people can achieve the needed competence.

[1] Lee Jong-Wha, Director, Asiatic Research Institute at Korea University in World Economic Forum, 16 Sep 2014

[2] Børge Brende, Minister of Foreign Affairs, Norway in World Economic Forum, 07 Jul 2015

Knowledge for development

Norwegian International Development Company AS (NIDECO AS) is a company that is specialized in providing Sustainable Energy products and solutions in developing countries. Founded in 2014, it is already represented in 9 African countries, and making progress. By being specialized towards developing countries and Africa in particular, NIDECO has the expertise and experience to help other companies with ambitions in Africa.

The vision of NIDECO is to contribute significantly to the use of Sustainable Energy in developing countries and thereby contributing positively to sustainable development, health and the combat of climate change.



Read more on the web:
<http://nideco.no/index.html>

Is there a General Key for Unlocking the Door to Sustainable Development for Rural Communities?

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(<http://nideco.no/>)

I'd like to think that there is a general key for unlocking Sustainable Development for rural communities, using renewable energy, training and developing market based value chains. Let me show you why I think so.

Sustainable Development is hampered today

The following challenges are quite common in rural communities:

1. Women and children in particular get health problems from indoor air pollution caused by traditional cooking (4 mill people die prematurely annually because of this, according to WHO).
2. Firewood is getting difficult to obtain near the community due to deforestation, forcing women in particular to walk long distances. It is risky for the women, and their families suffer.
3. Farmers lack fertilizers, resulting in small harvests, minimal income, and sometimes malnutrition for the family.
4. Families and businesses lack power and proper lighting, preventing access to information and use of efficient tools.

The above challenges may seem hard to resolve, but can in fact be resolved by renewable energy technologies, which is why they are also referred to as sustainable energy technologies.

The traditional way

During a visit to rural Liberia a few years back, I was introduced to the main income source for a village – “cane juice” - alcohol made from sugar cane, in what they called “the mill”. Having observed their current practices, I could not help thinking that a few changes in their practice could make a huge difference in the energy situation for that village (which currently did not have access to modern energy sources).

Their practice was to squeeze the juice from the sugar cane by using an old machine. Having squeezed out the juice, they threw the straws (bagasse) away in heaps. Then, when they wanted to get rid of the heaps, they set fire to them. Later in

The machine for crushing - notice e.g. the entrance for the sugar cane in the machine



The distillation area with fire for heating up the fermented juice. Notice the firewood burning



Walking up to the mill across burned heaps of bagasse

the process, when heating the fermented juice to make the alcohol, they used firewood that was sometimes hard to find nearby.

Using bagasse as fuel and converting the diesel engine to run on alcohol

The observations induced some thoughts. Firstly, that by throwing the bagasse away and setting fire to it; they wasted a lot of energy. Actually, 2/3 of the plant energy is in the bagasse. If they instead had chopped the bagasse and dried the chips, they could have used those chips as fuel instead of (or in addition to) the firewood, and thereby saving themselves the trouble of finding firewood as well as saving the forest. In addition, while heating the fermented juice, they could e.g. produce power from the heat via a combined heat and power unit (CHP). Even further, by converting the diesel machine to run on alcohol, they could use their own alcohol as fuel and thereby save both money and the environment.

Using the Waste for producing cooking gas, power and fertilizer

Similarly, wastes of different kind were lying around in the village and in the bushes around the village, and there were no toilets. If that waste instead had been used in a biogas plant, they could have got rid of wastes that attract flies and cause health problems. In addition, the smokeless biogas could be used for cooking instead of open fire, thereby avoiding health problems caused by smoke.

Alternatively, it could be used for producing power via a generator. Finally, the biorest (the digested biomass) could be used as fertilizer on the fields, improving agricultural and other produce, and preventing deforestation due to depletion of the fields and clearing of new forest areas.

Using other local resources

Communities have different natural resources. In addition to bio resources, most communities could also utilize solar energy, either to produce power or to produce hot water, which both could be valuable supplements to the described bio energy.

Developing the value chains

Technically the above should be possible, but there are plenty of examples that show that the best intentions fail unless the value chains around the technical equipment are in place too. Being in place means e.g. that related spareparts and services have to be available when needed. To ensure this, value chains should be managed on a commercial basis - as someone's livelihood. Only by providing the necessary spareparts and doing the related services, his or her livelihood will be sustained. Like others in the village have their livelihood on growing the rice and the sugar canes, this business could be the 'Sustainable Energy Business' (SE business) in the village. This means that the value chains around the technical equipment need to be developed.

Building the market

A business requires not only someone to offer products and services, but also informed customers with purchase power. In a village where knowledge of renewable energy and money is limited, it would be necessary to increase the knowledge and purchase power of people. That could be done by training in sustainable energy, and in parallel introduce services related to the SE business, where the villagers are paid for services to the SE business, and vice versa. Typically, paying villagers for collecting waste and making fuel chips, while charging them for cooking gas, power and fertilizers. After a period the villagers would become informed customers with purchase power - hence a market would develop.

Conclusion

By using the natural resources in the community to produce fuel, cooking gas, power and fertilizers, and developing the market based value chains around the technical equipment, I'd like to think that this is a general key for unlocking the door to Sustainable Development in rural communities.

Photos by: Hans Martin

The world is changing all around us. A skilled population is the key to a country's sustainable development and stability. We know that obtaining a quality education is the foundation to improving people's lives and sustainable development. To contribute to skill people over the next ten years and beyond, we must look ahead, understand the trends and forces that will shape our business in the future and move swiftly to prepare for what has to come. We must get ready for tomorrow today. We will make it possible for youth and young adults all over the world to gain skills they can use in the labour market or to create their own jobs. We will make it possible for every person to have lifelong learning opportunities to acquire the knowledge and skills they need to fulfil their aspirations and contribute to their societies.

The Lucubrate project started in 2017 by NKB. The aim for the project is to become one of the world leader in knowledge transfer independent of the country you live in. The Lucubrate Magazine is a part of the Lucubrate project.

We recognize the creative power that comes from encouraging collaboration and innovation among a team of knowledgeable experts. This unique energy is our greatest competitive advantage in the world marketplace.

- Our purpose is to bring Quality Education and Skills Everywhere.
- Our mission is to support education for building skills to all kind of businesses to create possibilities for jobs and make a lasting difference to people's lives. Globally. 24/7.
- To be the world leader in knowledge transfer across all borders.

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