

Sustainable Soil Management Programme

दिगो भू ब्यवस्थापन कार्यक्रम

SSM-P
एस एस एम पि

GPO Box 688, Kathmandu, Nepal
Tel.: (+977 1) 5543591, Fax: 5526890,
Email: ssm@helvetas.org.np
<http://www.helvetasnepal.org.np/SSMP.htm>

Farmer Profiles from the Mid-hills of Nepal

Publisher:

The Sustainable Soil Management Programme
SSM-P
Document No. 151

प्रकाशक:

दिगो भू ब्यवस्थापन कार्यक्रम
एस एस एम पि
डकुमेन्ट नं. १५१

Publishing date: April, 2009

प्रथम संस्करण : चैत्र, २०६५

संयुक्त
cooperation

◀ helvetas Nepal ▶

SSM-P is implemented in Collaboration with Government of Nepal and Civil Society Actors of Nepal.
It is financed by the Swiss Agency for Development and Cooperation (SDC).



The Sustainable Soil Management Project

Introduction

The SDC-funded Sustainable Soil Management Programme (SSMP), implemented by Helvetas-Intercooperation in the mid-hills of Nepal, commenced in 1999.

Nepal is one of the poorest countries in the world and the poverty is very largely concentrated in the rural areas of the mid-hills. With increasing population over the past decades, and exacerbated by the recent conflict, the problems of productivity decline in the bari areas (dryland, unirrigated) have accelerated. The conflict caused widespread disruption to development programmes, and to agriculture in particular, especially in the rural areas.

Many working household members left their homes, the infrastructure and social cohesion in many rural areas were wrecked, and agricultural production declined significantly. The most vulnerable groups continue to be the lowest social castes, indigenous people and women.



In order to combat this poverty and productivity decline, SSMP promotes proven and appropriate soil management technologies to mid-hill farming households with the aim of improving productivity, providing alternative cropping options, and increasing the opportunities for a cash income - and thereby enhancing livelihoods.

As a means of impact assessment, this is the first volume of farmer profiles describing the experiences of farmers who have worked with SSMP and its collaborating partners (CIs).

What does SSMP offer to the farmers?

The main technologies promoted by the programme are listed below, all of which must be economic, and socially and environmentally friendly.

- a) Improvement in the quality of farm yard manure (fym) in a 5 step programme:
 - i) maintenance of a well managed heap or pit properly protected from the sun using a protective cover, usually plastic, bamboo or foliage roof,
 - ii) protection from the rain, run-in and run-on water,
 - iii) proper drainage, collection, and storage of cattle urine through simple redesign to, or improvement of, the cattle shed,
 - iv) regular turning of the fym, and maintenance of the fym in a moist condition before carrying it to the field,
 - v) no exposure to the sun of the small fym heaps in the field prior to application - again covering is crucial.
- b) The use of cattle urine as a fertilizer, plant tonic and bio-pesticide.
- c) The combining of the above practices with inclusion of legumes, fodder, and forage plants into the rotation.
- d) The incorporation of vegetables and other cash crops into the cropping systems.

Adoption rates of up to 60% are recorded for farmers now using the basic fym improvement technologies (a above). Nearly all farmers interviewed at different times during the past 5 years are convinced that these practices result in higher yields, better quality produce, improved soil conditions (workability), in lower expenditures on chemical fertilizer, and in higher household incomes.

How does SSMP operate?

SSMP works through local NGOs and CBOs who compete for programme funds via a competitive grant system (CGS); proposals from these local organizations are evaluated by an independent technical committee, and contracts awarded on the basis of technical quality, gender and caste inclusion, and poverty and geographical remoteness of the target communities. SSMP has established a system of experienced lead farmers and lead farmers to support the farmer-to-farmer approach (FtF), a key vehicle for further dissemination, and a crucial element of a decentralized extension system, responsive to the farmers needs, and in reaching isolated communities who have little access to the government extension structures.

SSMP, which currently works in 10 districts of Nepal, is committed in all its endeavors to an inclusive work ethic, a focus on the poor and discriminated, and strives for equal access of men and women in its activities.

SSMP in the current mid-hills situation

Fertilizer prices have soared in the past two decades - the price of urea has increased over 300% in the past 22 years, and consumption has fallen dramatically according to Ministry of Agriculture data. In addition, fluctuating oil prices are seriously effecting the cost of transportation, and life in Nepal has been severely impacted by unrest, lack of fuel and electrical power, and poor and damaged infrastructure. These factors provide further economic and environmental justification for the promotion of SSM practices:

- a) the raw materials for fym and compost are available locally free of charge - there are no transportation or purchase costs,
- b) nitrogen is available free of cost in the urine of farm animals,
- c) urine can be used as an additional input to the fym and compost, as a plant nutrient tonic, and as a plant bio-pesticide, further reducing the need for expensive agro-chemical inputs,
- d) SSM practices improve the quality of compost and fym that is applied to the farm and thus makes best use of the available resources.

The sustainable soil management (SSM) practices that are promoted are thus increasingly relevant and important in the struggle for mid-hill food availability and livelihood sustainability.

The impacts of SSMP

Eight impact studies were undertaken in 2007 after 8 years of SSMP implementation. Highlights include:

- a) SSM technologies developed and extended to over 25,000 hill farmers per annum during Phase 2 have increased the soil nutrient reserve, have had a positive influence on agricultural productivity, and have enhanced household incomes;
- b) the three technologies which have been most adopted in the past three years are improved farmyard manure preparation and management, legume integration in the cropping cycle, and organic pest management;
- c) the introduction of the competitive grant system (CGS) and the farmer to farmer diffusion system (FtF) are cost effective extension mechanisms;
- d) operating the FtF system through lead farmers and experienced leader farmers leads to demand-led agricultural development in the rural areas, and is far more effective at reaching remote areas which otherwise remain relatively untouched by the government extension service;

- e) SSMP has had a significant impact on policy development in relation to greater use of locally available natural resources and improved fym production. The Agricultural Perspective Plan, reviewed in 2006, and the revised National Fertilizer Policy have both taken note of SSMP's achievements, the CGS has been adopted by other government and non-government projects and institutions, and the FtF extension system has been fully endorsed in the 10th Five Year Plan and the national extension strategy.

Soil analysis results from benchmark sites record some strong positive trends in terms of fertility improvement through the use of SSM practices - which have increased the levels of nitrogen in fym, and organic matter, nitrogen and phosphorus in the soil. The practices promoted by the programme are therefore having a measurable impact on carbon sequestration – and also on the emission of GHGs, through improved management of the fym, and utilization of cattle urine thus decreasing the need for fertilizer and pesticide.

Moreover, the introduction of SSM practices has had a direct role in improving the nutrition of many mid-hill households, in terms of both quantity and quality - as can be read in the following profiles. This improvement arises from both yield improvement and the much wider variety of vegetables that are grown. The SSMP package includes promotion of vegetable production, appropriate training, and a focus on those crops with a moderate to high market potential.

SSM techniques can also play a crucial role in ensuring the sustainability of the commercial vegetable production areas near the urban centres, especially those producing for Kathmandu, Kavre and Dhading district: in these areas, very large amounts of agrochemical, mostly fertilizer and pesticide, are used, and these are causing serious concerns in relation to the environment and health hazards. SSMP promotes sustainable cropping methods which are particularly appropriate to these intensively managed areas – improving general soil nutrient levels and physical structure through applications of fym, replacing the need for urea through the collection and application of cattle urine, and substituting some of the pesticides with biopesticides prepared from cattle urine and plants.

Measuring impact through the 50 farmer approach

The "50 farmer approach" has been introduced by SSMP in the past two years. Through this approach, it is planned to interview a total of 50 farmers who have adopted or adapted SSM practices in order to assess the impact that programme initiatives have had on their production practices, livelihoods and well-being.

This Volume 1 records some of the experiences and thoughts of 20 farmers after their several years working with SSMP and its collaborating partners. To date, over 20 detailed household interviews have been undertaken to assess the impact of sustainable soil management on household income, food sufficiency, children's education, family health, decision making and social status in the community.

These farmer profiles show that sustainable soil management has had a direct impact on the lives of these farmers - and it is these model farmers that are the basis of SSMP's efforts to extend the technologies through farmer-to-farmer extension (FtF). Many of them are Experienced Leader Farmers who are entrusted with extending the SSM technologies to the demand farmer groups of the remote areas, which the GoN service providers find it hard to reach.

In conclusion, the SSMP promotes simple but innovative mechanisms that provide technical and agronomic options to farmers in mid-hill districts. Where it has operated best, the programme also empowers civil society actors, especially women and disadvantaged groups, and provides sound technical solutions that impact beneficially on soil fertility and livelihoods.

(A list of terms and abbreviations is provided on the back cover).

Portrait of Laxmi Timilsina of Kavre District



Location : Ryalee village, Ward 9, Ryalee VDC

District : Kavre

Member of the Sagarmatha Bachat Samuha farmer's group

In collaboration with the Woman Awareness Centre Nepal (WACN)

From 2001, Mrs Timilsina participated for some 6 years in trainings on improved farmyard manure management, vegetable production and legume integration. She is an Experienced Leader Farmer and, to date, has trained more than 30 groups.

when we
wanted
to eat
vegetables
before we
had to sell
firewood in
Bhaktapur
and then
buy
cauliflower
or garlic
with the
money
earned

Introduction

Mrs Laxmi Timilsina, now a mother of 3 children, had no schooling in her younger days. She farms 7 ropani of land. Most of the land is rainfed and of low fertility status. Nowadays, she owns 1 buffalo, 1 cow and 8 goats. Before the support of SSMP, she cultivated maize, wheat and mustard on her bari (rainfed land). On the khet (irrigated land) she grew rice and potatoes. At that time, she and her family had food for only about 3 months of the year and had to buy rice and other staples. If they wanted to eat vegetables, they had to sell firewood in Bhaktapur in order to raise the money for buying green garlic, leafy vegetables or cauliflower. To maintain soil fertility, she used to apply about 3 bags of chemical fertilizer in addition to traditionally prepared farmyard manure.

Impact

Following trainings, the farmyard manure that Laxmi Timilsina now produces is in high demand by other farmers in her area. She currently sells one dhoko of improved farmyard manure at the price of NRs. 18 to 20, NRs. 5 more than for traditional farmyard manure. Each year, she earns about NRs.7,000 from farmyard manure sales. She has not applied any chemical fertilizer to her land for 5 years.

Close to her house on her own land, she started to grow different vegetables. Traders often buy her produce at her doorstep - this includes cabbage, cauliflower, tomato, leafy vegetables, potato, and coriander. Collecting urine and making organic pesticides became routine work. However, earlier in 2003, she was also selling her organic cauliflower at the rate of NRs. 50 per kg in Banepa, a nearby town - according to Laxmi, it is much tastier than the cauliflower she bought before. Initially, her husband was hesitant to sell vegetables in the market himself - but he has now overcome these fears and is happy to support his wife in all

aspects of vegetable production and marketing. The family made progress – as the years went by, her income more than doubled through the sale of fresh vegetables which resulted in her family having fewer debts with moneylenders, they purchased a buffalo, and had no problems in paying for the health and education costs of the children.

In 2008, she leased an extra 4 ropani of land from her neighbour, which gave her enough land to produce tomato, potato, cabbage, cauliflower, onion, garlic, beans and other leafy vegetables, as well as the staples of wheat and rice. In recent years, she has earned each year about NRs. 35,000 from vegetables, about NRs 40,000 from milk (she produces 12-14 litres per day in the wet season), and some NRs. 1,600 from her 3 peach trees, on top of the income made from her high quality fym. She is also making money from 5 plum and 6 orange trees. This level of income has now resulted in the family having no debts, and with the extra leased land, Laxmi's family are now food sufficient all the year round, and there is no need to buy rice.

In 2006, as recognition of her excellent work, she was selected as an SSMP Ambassador which she felt was a great honour.

"WACN is our mother who gave us new birth while SSMP is our grandmother " said Laxmi, who also feels that, due to her involvement with SSMP and their increased self sufficiency in terms of cash and food, her self confidence has increased and they are much more respected. Many farmers of her area now come and ask for her advice about what crops to grow and how to grow them.



The protected farmyard manure heap next to Laxmi Timilsina's house



Laxmi also prepares organic pesticide from cattle urine and various plants

Portrait of Jayanti Sapkota of Kavre District



Location : Ryalee village, Ward 1, Ryalee VDC

District : Kavre

Member of the Sagarmatha Nari Chetana Samuha farmer's group

In collaboration with Woman Awareness Centre Nepal (WACN) from 2001 to 2006.

Ms. Sapkota is now an Experienced Leader Farmer for vegetable production with sustainable soil management practices - she has provided trainings and established demonstrations in relation to improved farmyard manure management, compost production, urine collection, organic pest management, vegetable production, legume integration and fodder/forage development.

thanks to
the income
from
vegetable
production,
I can now
send my
kids to
boarding
school

Introduction

Mrs. Jayanti Sapkota, who progressed to Class 5 as a child, is now mother of 5 children. She manages a farm of 22 ropani, of which 8 ropani are rainfed agricultural land, and 2 are irrigated. The remainder is unproductive land, from which she collects fodder, fuelwood and timber. In addition, she is looking after a small stationary shop and several livestock - currently 1 buffalo, 2 cattle and 6 goats. Until recently, she had to manage this all alone as her husband had left for Malaysia in 2006. Her parents-in-law are old and the children are now all at boarding school. Before SSMP's interventions through WACN her family planted maize, wheat, mustard, and barley on the rainfed land, and rice and wheat on the irrigated land. They bought vegetables from other farmers.

Impact

In 2004 (2060), after training which included nursery management, Mrs. Sapkota planted several tree tomatoes, a perennial high value crop and developed in her own nursery, just next to her house. She also began growing different vegetables on her own land including cauliflower, cabbage, onion, garlic, rayo and legumes – all supported by ssm practices. Although the cropping pattern has become much more diverse and intensive as the years went by, she was able to cut down on fertilizer costs while harvesting similar or even higher yields. Maize yields have increased to the extent that she is now able to sell maize. Vegetables were once a dream to her family but now vegetable traders come to her doorstep to buy her produce and she has increased her income by more than 100% since her first involvement with WACN.

She now earns annually about NRs 45,000 from vegetables, and about NRs 20,000 from milk sales on top of her earnings of about NRs 20,000 from her stationary shop. In addition, her husband returned from Malaysia recently, and

he earns some extra money from a small bakery cafe in Kathmandu.

Her income now covers her family's home expenses, the costs of her children's education at boarding school (NRs 1500/child/month), and she has started accumulating funds in a saving and credit cooperative scheme.

In addition to the striking improvement in her income, Mrs Sapkota states that the soil quality of her farm has improved greatly since she started applying SSM practices - the formerly heavy and compact soil has become more friable and easier to till. Moreover, on the unproductive land she has planted different fodder grasses and bushes leading to increase productivity of her milking animals and less time spent in fodder collection.

Ms. Sapkota is now an Experienced Leader Farmer providing training to many other farmers in farmyard manure management and vegetable production.



Tree tomatoes cultivated by Mrs Jayanti Sapkota



Jayanti Sapkota in front of her mustard crop and tree tomatoes - an innovative intercrop system for higher income

Portrait of Keshav Koirala of Kavre District



Location : Kalika village, Ward 5, Chalal VDC

District : Kavre

Member of the Sri Kalika Nari Chetana Saving and Credit Cooperative

In collaboration with the Women Awareness Centre Nepal (WACN)

Mr Keshav Koirala is an Experienced Leader Farmer and has participated in trainings and demonstrations on improved farmyard manure management, urine collection, vegetable production, legume integration, compost preparation and planting of fodder grasses.

not only
me, also my
neighbours
have started
to apply
sustainable
soil
management
practices
- because
they really
make a
difference!

Introduction

Keshav Koirala, who only had the opportunity to attend school until Class 2, is a father of 4, and lives from the produce of his farm. In total he cultivates 6 ropani of rainfed land and he has about 15 ropani of unproductive land where he produces firewood, timber and some cardamom. On the agricultural land, he used to grow wheat, maize, and some millet and mustard. He always used traditional farmyard manure, prepared, managed and applied as his forefathers did – previously he had one cow, one buffalo and about 5 goats; currently he has 2 cattle and 3 goats. He estimated that during those days his family was only about 3 months food sufficient and for the remaining months they had to buy food from the market - both vegetables as well as staples, mainly rice, as he had no access to irrigated land. Vegetables were a special treat for his family.

Impact

Since 2000, Mr. Koirala has been involved in the agricultural activities of WACN, supported by SSMP. Today he is an Experienced Leader Farmer, and says he has drastically changed his agricultural production system since his first involvement with WACN and adoption of SSM practices. He is now growing many different kinds of vegetables – for example, chilli, garlic, onion, cabbage, cauliflower and other leafy vegetables - and he is able to sell the surplus in the market. He now also has some orange trees, an additional source of income.

He still has to buy rice as he still lacks access to irrigated agricultural land, but he does not see this as a major problem or worry as he is able to earn enough money from his vegetable sales.

Since he adopted the new SSM practices, his income has doubled and his family is now food sufficient. Through improved farmyard manure management, the

application of compost and liquid manure from collected urine, he is able to maintain or even increase the fertility of his land despite the fact that he has reduced the use of mineral fertilizer. This has helped him to boost his profits and increase the household budget.

He now earns annually about NRs 30,000 from the vegetables and cardamom, NRs 15,000 from milk sales, and NRs 8,000 from orange sales.

As an Experienced Leader Farmer, he has, to date, trained about 100 groups in SSM practices and vegetable production. Recently he has expanded the cardamom plot on his unproductive land – he used to dry the cardamom in the sun. However, with the support of WACN and the District Agricultural Development Office, a cardamom drying oven was established in the vicinity, and now he is able to dry it more efficiently and produce a better quality end-product.



Keshav Koirala's residence in Chhal VDC of Kavrepalanchowk district



Part of Keshav Koirala's cardamom crop which earns him around NRs 10,000 each year

Portrait of Mukunda and Indra Chalise of Surkhet District



Location : Khorke village, Ward 4, Birendranagar N.P. VDC

District : Surkhet

Member of the Lagansil Krishi Samuha farmer's group

In collaboration with Environment Development Society (EDS).

Mr. Chalise participated in trainings on sustainable soil management, legume integration, vegetable cultivation and other, and he and his wife now practice improved farmyard manure management, urine collection, vegetable cultivation and organic pest management. Mr. Chalise is an Experienced Leader Farmer and Mrs. Chalise is the president of the farmer's group.

to produce
more
vegetables
for the local
market we
bought an
additional
2 ropani of
land

Introduction

Mukunda and Indra Chalise originally farmed 3 katha (2 ropani) of agricultural land before the interventions of EDS, a local partner of SSMP. On this land they used to grow predominantly rice, maize, wheat and a few vegetables for home consumption. The produce from their land was already sufficient for them and their three children, and there was no need for them to buy anything in the market. They owned 2 oxen for ploughing and 1 buffalo for milk, which they occasionally sold.

For the last 8 years, Mr. Chalise has also run a mill and he is well known in his area for his bees. All their children go to school, while he himself graduated from Class 12 and his wife passed SLC (Class 10).

Impact

Nowadays they own 1 buffalo and 1 ox, and they have been practising ssm activities from 2004. The Chalises are a major vegetable producer in the area, and traders come from Birendranagar Municipality to buy their produce on-farm, thus there is no need to go to the market. Their main products from the rainfed land are cauliflower, cabbage, tomato, beans, peas, cucumber, and other fresh vegetables, grown both in-season and off-season and within a strict crop rotation. They produce many of their seedlings under a plastic tunnel, and continue to grow rice and wheat on their khet land, about 30% of their total landholding.

In order to expand their production, they bought an additional 3 katha of land (2 ropani). To maintain soil fertility they apply improved farmyard manure and cattle urine. The urine is applied to their land through a 4 inch plastic pipe, which is connected to the cowshed. These interventions have not only had a good impact on the soil of their land - more friable soil, easier to till and increased yield -

but have also improved the family's household budget and their daily diet.

Their income has improved many times over in recent years, and the additional money has been used for buying the additional land, for paying for their children's boarding school, for daily expenses, and to accumulate some savings. Some of the money made was also used to construct a new home, and Mukunda estimates he makes a profit of approx NRs 100,000 annually from income through sales of vegetables and honey. He produces about two quintals (200 kg) of honey per year.

Their neighbours are very interested in their activities and often come to see and learn. Some of the neighbours have started with improved farmyard manure management even though they do not have any livestock - they buy manure from others and manage it as they have learnt from Mukunda Chalise.

In recognition of his excellent work, Mukunda Chalise was honoured by SSMP in 2006 when he was selected as an SSMP Ambassador.



A pipe from the cattle shed to the field for the transport of cattle and buffalo urine



A fine crop of potato and cauliflower, and a covered fym heap, in front of the Chalise's yellow home

Portrait of Iman Singh Basnet of Surkhet District



Location: Charkune village, Ward 1, Latikoili VDC

District: Surkhet

Member of the Shivashakti Krishi Samuha farmer's group

In collaboration with Dalit Pidid Mahila Kalyan Samaj (DPMKS)

Mr Basnet undertook many trainings and demonstrations, farmer led experiments were conducted on his fields, and his cow stable served as a demonstration for cattle shed improvement and urine collection. He learned about the use of organic pesticides and he is now a Local Resource Person for vegetable production.

urine applied
through drip
irrigation,
my own
innovation,
resulted
in the
doubling of
the yield of
bittergourd
in 2006

Introduction

Iman Singh Basnet, a Class 11 pass, is in his 30s and a father of 3, all of whom go to school. He lives with his parents, his brother's family, and his wife and children. They used to farm 15 katha (10 ropani) of land, all with access to irrigation. He used to have one buffalo, 2 oxen, 2 cows and about 4 goats. He mainly used to grow rice and wheat on his land with some vegetables for home consumption, in total enough for his family. During those days he used to sell rice and wheat, but still had to buy vegetables. About 3 years ago he acquired a mill, which is now looked after by his father. He also sells some milk whenever possible. Since buying some extra land recently, they nowadays own and farm 20 katha land (about 13 ropani).

Impact

In 2001, Mr. Basnet was on his way to Malaysia, but was not able to get a visa. After returning to his home in Latikoili, he started with the commercial cultivation of vegetables with technical support and assistance from DPMKS.

On a little bit less than half of his land, he continues to grow wheat and rice. On the remaining land, he now cultivates many different types of vegetables including beans, cauliflower, cabbage, potato from true potato seed, tomato, chilli, brinjal and different types of leafy greens.

He regularly uses improved fym, urine and organic pesticides on his farm. Thanks to the reduced amount of mineral fertilizer he now uses – he has gradually reduced the amount of fertilizer over the years, and now he estimates that he uses 25% less urea than he did before - the soil has become easier to work, more friable and the yield has increased. Before he used only to apply urea, but now he adds a little DAP and potash, adding to a more balanced nutrient input.

While they never had to buy vegetables, even before SSMP came to his village, they now began to sell different vegetables and they are always available for the home kitchen. As a result, the family income has increased significantly. Mr Basnet indicated a benefit of about NRs. 70,000 in 2006, which he then felt was very good. In 2008, however, he earned about NRs. 150,000 from vegetables and seedling sales, and further income came from milk and goat sales (NRs. 45,000), and from running the mill (about NRs. 10,000). Due to his good income, he has paid off his loans taken out for establishing the mill, and can easily manage the cost of his children's school boarding fees and all his daily expenses. In addition, he recently purchased a small pump to deliver irrigation water to his farmland.

In terms of SSM practices, he used to cover his farmyard manure with a mat, but has recently planted a vine in order to get grapes in addition to the shade for the manure. He now has one buffalo, four oxen, one cow and four goats. He improved the cow shed and started collecting urine, and in 2006 he started to apply urine by means of drip irrigation, which resulted in double the yield in the case of bitter gourd.

He now says: "if we drop sweat in our own field, there is no need to go to other countries for earning a good income".



The drum containing water and filtered cattle urine



A seed bed for potato from true potato seed on the farm land of Iman Singh Basnet



Iman Basnet's drip irrigation system providing water and nutrients from cattle urine to his bittergourd crop

Portrait of Aase Chowdhury of Surkhet District



Location : Patalganga village, Ward 6, Latikoili VDC
District : Surkhet

Member of the Ganeshjal Krishi Samuha farmer's group

In collaboration with DPMKS for the last 4 years

Mr Chowdhury participated in trainings on improved farmyard manure management, compost making, vegetable production, and organic pest management.

the sale of
vegetables
produced
with
sustainable
soil
management
has
supported
my children's
higher
education

Introduction

Aase Choudhury only owns about two katha (just over 1 ropani) of land but cultivates another 30 katha (20 ropani) as a tenant under the sharecropping system through which he provides 50% of the main crop (rice) to the landowner. For the ploughing he has two oxen, and for milk he owns two cows. Occasionally, he fattens a pig for meat purpose. He only used to grow the staples of rice and wheat. Due to his cultivation as a tenant, his family was always food sufficient in terms of the staples, and he produced a few vegetables for home consumption in a small kitchen garden. Though he and his wife never went to school, both his children have been educated to university level, his daughter currently studying at bachelor level, his son now a 2nd year Masters student.

Impact

When SSMP began work in Latikoili area in 2002, Mr. Chowdhury began vegetable production on a semi-commercial scale on his 2 katha of land. He now grows beans and other legumes, potato, cabbage, cauliflower, chilly, brinjal, leafy vegetables and other vegetables, in-season, and off-season. While in earlier days, vegetables were not always on the menu, his family now eat vegetables regularly and sell a surplus on the market. As he does not have access to channel irrigation, he applies water with the help of a treddle pump, the purchase of which was supported by SIMI Nepal – the water is collected in a pond during the rainy season.

Farmyard manure has been used for many generations, but the way it is managed and applied in the field has changed since SSMP and DPMK started activities in the VDC. He believes that these interventions have helped to make the soil more friable, and has resulted in a yield increase. At the same time, his expenses for mineral fertilizer has been cut considerably – and this reduction in fertilizer use has not impacted the yields at all. He believes the reduced use of chemical fertilizer

has helped a lot in improving the soil quality on his farm – his soil is now more friable, easier to dig and with a better water-holding capacity as it does not dry out so quickly.

Mr. Chowdhury indicated that his income has increased well over 100% in the last few years through fresh vegetable sales. This increase supported not only the daily expenses at home, but also eased the burden of school fees and ensured his daughter's education would not be interrupted. In recent years, he has earned annually about NRs 20,000 from surplus vegetables sales, and he earns a further NRs. 20,000 from occasional labouring work.

Equally valuable, he thinks, is that in the past 6 years, he has earned not only money but more respect from his community, friends and neighbours - now he is popular as a successful farmer, a father of two successful children and a respected member of the local Chowdhury Society.



Above and below - the 2 khatta of land where Aase Chowdhury cultivates vegetables for the local market



Portrait of Bhim Dutta Karki of Surkhet District



Location : Kandakhet village, Ward 8, Bidyapur VDC

District : Surkhet

Member of the Bhairav Bakhra Palan Samuha farmer's group

In collaboration with the Beautiful Nepal Association (BNA).

Mr. Karki was given a goat as part of the ultra-poor programme of SSMP. In addition he participated in trainings on sustainable soil management and vegetable promotion; in 2007, he participated in a veterinary training where he learned all about livestock management and health.

his
neighbour
upon arrival
of PMU
staff in
Bidyapur 8:
Agh! - you
are going to
see the goat
producer of
this area!

Introduction

Bhim Dutta Karki, a father of 6 small and teenage children, has worked many years of his life in India as a daily labourer. He has two ropani of land. Although it is very stony and the soils are marginal, he manages to grow some rice, wheat, maize and chick peas, but only sufficient to provide food for the family for about half the year. Previously, they did not produce any vegetables on their land and did not buy any either - they just did not eat any vegetables, only rice and lentils. Market access is also difficult as his house is located about 2 hours walk from the gravel road head - scope for commercial fresh vegetable production is therefore limited. He used to work as an occasional labourer whenever the opportunity arose.

Impact

Mr. Karki is known in his area for his success with goat rearing. The first goat was given to him 3 years ago; up to 2007, he sold 4 goats at a total income of NRs. 10,000 - 5 goats had died, but in 2007 he had 14 goats. He was determined to increase the number of goats in order to improve his income. Fodder is not an issue in his area as his house is located just below the ridge, where he has access to abundant resources. However, in order to reduce the workload for himself and his wife, he planned to plant some fodder grasses and shrubs on the less productive areas around his house. The workload related to fodder collection mainly fell on his wives' shoulders when he was out of the house to work as a labourer - this was much more often in the past.

By 2009, he had expanded to own 2 bulls, 2 cows and 1 calf, along with 38 goats. These days, he earns annually about NRs.50,000 by selling goats which covers all his costs for staple food for the whole family.

While rearing goats, he faces the problem of a high mortality rate due to fetal death (abortion), paralysis, internal parasite, black quarter, anthrax and other causes that he cannot define. However, the total cost of preventing or treating these diseases amounts to only NRs.200- 400 per animal which he feels is not too much. In spite of the difficulties and costs, he remains determined to further expand both the animal shed area and the number of goats.

From the dung of his cattle and goats, Mr. Karki now produces improved farmyard manure which has helped him to diversify his crop production - he now produces cauliflower, onion, radish, tomato, potato and other vegetables for home consumption on the 2 ropani of land near his house. Although production has increased, his family is not yet food sufficient in all aspects from their own land, so there is still the need for Mr. Karki to search for occasional jobs. His trial in selling tomatoes in the local market failed due to the low price obtained and the high transportation costs.

Despite all the difficulties, he is pleased with the improvements in his life - he is now busy in his village as an animal health social worker after participating in the veterinary training, he is more respected, and his standing in the wider community has risen.



Some of Bhim Dutta Karki's goats



Bhim Karki's home and goat sheds, and the plentiful fodder resources



Bhim Karki - happy with his goats

Portrait of Bhakta Kumari Shrestha of Sindhupalchok District



Location : Sikre village, Ward 8, Attarpur VDC

District : Sindhupalchok

Member of the Laligurans Tarkari Utpadan Samuha farmer group.

In collaboration with Tuki Association Sunkosi (TASK).

Ms. Shrestha worked with TASK for 8 years, 6 of which were supported by SSMP. She participated in a number of sustainable soil management and vegetable production trainings and conducted farmer led experiments and demonstrations. Now she also provides services as an Experienced Leader Farmer and teaches what she has learned to other farmers.

with the
exception
of broadleaf
mustard, we
never used
to eat fresh
vegetables
before -
now we
have a wide
selection,
not only for
us but also
to sell in the
market

Introduction

Bhakta Kumari Shrestha, in her 20s, lives alone with her parents, both over 60, and cultivates 5 ropani of rainfed agricultural land. They own 2 buffalos and about 8 goats. For many years, they have grown maize, wheat, millet and some potato. They also used to have a small kitchen garden where they grew some leafy vegetables for home consumption, but their diet was short of other vegetables. The staple crops that they produced provided for less than 9 months of their needs, and they had to purchase basic needs for the remaining period. Some income was provided through the sale of milk and goats. Frequently, they had to take out a loan from local money lenders when they experienced a health problem or need for other major expenditure.

Impact

After the implementation of TASK and SSMP activities in her VDC, Bhakta Kumari began to grow an array of different vegetables, applying improved farmyard manure and urine as a liquid fertilizer. She currently produces cauliflower, cabbage, radish, peas and potatoes for home consumption and sale, and beans and black gram for the kitchen. This means that the family is now food self sufficient from the produce of their land, although they still have to buy rice as they have no access to irrigated land where rice can be produced.

Bhakta Kumari also started to apply organic pesticides which she considers as effective against aphids, but less so against larger pests. The main household income now comes from the sale of fresh vegetables, although milk and goat sales also provide useful earnings.

In addition, income is also now generated from her services as an Experienced Leader Farmer. This additional income has helped the family in covering daily

expenses, the increasing health care costs for her elderly parents, and to pay back the loans borrowed in previous years. Nowadays, they are even able to give loans to others and save some money in a local saving and credit scheme, established by TASK. Bhakta Kumari says that the changes in her life are not unique - they can be observed in most of the houses in her neighbourhood due to the improved farming practices introduced in recent years.

*Mrs Kumari's fym heap
protected from direct sunlight
by a crop of mustard*



Bhakta Kumari Shrestha's fine pea crop

Portrait of Indra Bahadur Sarki of Sindhupalchok District



Location : Bhadure village, Ward 5, Sipapokhari VDC

District : Sindhupalchok

Member of the No 10 Digo Bhu Bevastapan Samuha farmer group

In collaboration with Community Development and Environment Conservation Forum (CDECF).

Mr. Sarki, a group farmer, has participated in SSMP activities since 2001, taking part in farmer led experiments, demonstrations and trainings related to sustainable soil management and vegetable production. His group was also supported with a small pipe irrigation scheme.

I bought
another
buffalo to
get more
milk and to
get more
farmyard
manure and
urine

Introduction

Indra Bahadur Sarki, now 38, and his wife belong to the Dalit community and have 3 children (2 sons and a young daughter). They cultivate 10 ropani of agricultural land - they used to grow wheat, maize and millet on the rainfed area, and rice on the irrigated land. The food produced on their farm was not enough for the whole year, so that Indra Bahadur had to find off-farm work as a carpenter; he has also worked in Kathmandu as a porter. He only produced vegetables on a very small scale, not enough even for their own household requirements. They used to own 3 buffalo and 6 goats, and they always used to make a little money now and again from the sale of milk. While the parents did not have the chance to go to school, all 3 children now attend school, both sons in the 9th grade and the daughter in the 6th grade.

Impact

After training, Indra Bahadur began adopting SSM practices in 2002, and has seen a steady improvement in his life ever since. He now produces enough vegetables to sell to traders. On the rainfed land, both in-season and off-season, he grows cucumbers, chillis (including akbare), cowpea, bittergourd, pumpkin, capsicum, tomatoes (in and out of a polyhouse), beans, peas, cauliflower, cabbage, and wheat on a small area. He provides supplementary irrigation through a pipe system.

On his irrigated land he still grows the staples for his family, but he has to buy some rice as he does not have access to enough irrigated land.

After taking up SSM activities, Indra Bahadur began improving his farmyard manure, has incorporated legumes into his cropping cycle, and collects cattle urine. This has resulted in a considerable reduction in his use of mineral fertilizer - previously, he used to apply 4 bags of urea to his land every year, now it has

reduced to one bag only. He still uses urea, and now some DAP, but he states that since 2002, the soil has become more friable due to the lower urea applications and yields have increased over the years due to better management. He also realized the multiple benefits of having several livestock so a few years ago he decided to buy another buffalo. Certainly there is the direct benefit of milk sales, but the increased availability of farmyard manure and urine also influenced his decision. Currently, he owns 2 buffaloes, 1 cow and 5 goats.

There is no need to buy vegetables anymore. Earlier, he used to buy vegetables but now he earns annually NRs 50,000 from selling vegetables - his income has increased by 75% over the last few years. In 2008, Indra Bahadur estimates that the input costs for the vegetable production on his farm was NRs. 5,000. In addition to the income from vegetables, he also earns about NRs 40,000 per year from sales of milk from his cow and buffaloes. Now, he is even able to save NRs.5,000 each month at the local cooperative savings and credit scheme (sahakari).

With this additional income, he has been able to purchase an extra 4 ropani of unproductive land from which they collect fodder and fuel wood, to educate his children, and to increase the family's food sufficiency to 12 months.



Above and below - the impressive vegetable plots of Indra Bahadur



Portrait of Makar Bahadur Tamang of Sindhupalchok District



Location : Sildhunga village, Ward 5, Jethal VDC

District : Sindhupalchok

Member of Taja Tarkari Utpadan Samuha farmer group

In collaboration with Tuki Association Sunkosi (TASK) for 3 years until 2006.

Mr. Tamang participated in SSMP activities related to urine collection, vegetable production, legume integration, compost and farmyard manure improvement.

I will never
go back to
the Middle
East. I
can make
a better
living here
by producing
cauliflower
and potato

Introduction

Makar Bahadur Tamang had just returned from Saudi Arabia, where he worked as a labourer, when SSMP activities were initiated in his area. At that time, he cultivated maize, millet and wheat on his 10 ropani of rainfed agricultural land. He had no access to irrigated land. The produce from that land did not provide enough food for his family of three as some of the land is rather marginal and unproductive. He had to buy vegetables and staples from the market. In order to maintain soil fertility he applied traditional farmyard manure and urea. He used to own one buffalo for milk and some goats, the kids from which he sometimes sold. Before going to Saudi Arabia, he used to work as carpet labourer (galaicha) – at that time the family's food sufficiency was less than 7 months.

Impact

He first participated in SSMP activities in 2003. Mr. Tamang was immediately convinced of the benefits of urine collection. Due to only three family members – himself, his wife and his son – it is difficult to own a lot of livestock. Currently, he has 2 buffalo and 2 goats. He still cannot produce enough FYM and urine for his commercial vegetable farming thus he had to find an alternative.

So he decided to collect human urine from the toilet. He bought a 500 litre drum where he now stores and ferments the human urine before application as liquid manure. While others carry the urine to the field, Mr. Tamang has setup a pipe network that allows him to either transport irrigation water or urine to his field. To this day, he is still collecting human urine which he utilizes as a top dressing for the vegetables instead of urea. In addition he prepares good quality compost to supplement the fym that he is able to produce. After adopting SSM practices, he feels a real change with his soil - according to him, his soil has become more friable, much easier to work, has very few diseases, and gives a much higher production.

In the last few years, he has completely changed his cropping system from a maize-wheat based system to the production of cauliflower, potatoes and other marketable vegetables. He is especially proud of his potato crop, produced from January to April, and his off-season Cauliflower. Mr Tamang now farms 12.5 ropani of land in total, of which 7 ropani belongs to him and 5.5 ropani he leases, as it is near his home – for the leased land he pays NRs. 2,900 annually. He has leased out some of his own land to a tenant, as it is inconveniently far from his home. He generally sells the produce himself in Kathmandu at the Kalimati market. He says that he made a loss during his first year, only made a marginal benefit the second year but the real benefit started in the third year after incorporating SSM practices. In 2006, he indicated a net profit from vegetable sales of about NRs. 50,000.

Since then he has made further progress – in 2008, he made a clean profit of NRs. 54,000 from cauliflower, NRs. 30,000 from potatoes, and NRs. 15,000 from tomatoes.

There has been a huge change in his income over the past few years, and he has been able to payback the loan of about NRs. 200,000 which he took out for financing his trip to Saudi Arabia, and can now fund his son's schooling, and meets all household expenses. He is now lending money to other farmers at a high interest rate, and plans to open a life insurance business as well. Not only does the family have 100% year round food self sufficiency these days, but they are able to save money. He does not need to purchase staple grains as he exchanges his home-produced seed potato for rice, wheat and millet from other farmers – he has even started to sell his potato seed.

In addition, Mr. Tamang has become a local tradesman for vegetables. In his early years, he made a loss when he tried to sell vegetables by the doko (local basket). His desire for a better life, and to be a commercial vegetable trader led him to raise awareness of the potential in the nearby communities. A local NGO, Tuki Sindhupalchok, was also working in his area, and this made it easier for him to convince other people that there was real potential for a better life in selling vegetables. These days, he collects vegetables from the surrounding communities, including the nearby wards 1, 2, 3, 4, 5 and 6, and in some seasons, he reports that he collects about 2,000 kg vegetables per day, for which he earns NRs. 1 per kg. The collected vegetables are directly sent by truck to the Kalimati market in Kathmandu. Through this endeavor, he earns about NRs. 15,000 per year. He also earns about NRs. 8000-10,000 per year from off-farm work.

He says that he has improved his standard of living by hard work, but sometimes you have to be determined to arrive where you want to. His latest venture has not been so successful – he established a polyhouse for producing tomatoes in 2008, but due to lack of technical know-how, it gave a rather poor profit – then he used the polytunnels to raise a cauliflower nursery – but he wants to take training in polyhouse management so that next season, he produces a fine crop of tomatoes.

On top of these activities, Makar Bahadur is the Chairperson of the Agriculture Development Committee, which works in support of local agriculture development and the farmers – this position provides Makar Bahadur with a room at the local VDC office. Currently, one collection and storage centre is being constructed with the support of the ADC, the Chamber of Commerce and Industry, and Tuki, SSMP's local partner. In addition, an agricultural cooperative (Krishi Sahakari) is being established. Many of these local initiatives are due to Mr Tamang's energy, vision, enthusiasm and hard work, for which he is much appreciated and respected in Jethal VDC.



Makar Bahadur's 500 litre drum for urine fermentation

Portrait of Kalawati Bhatta of Baitadi District



Location : Bagadi village, Ward 2, Bhumeshor VDC

District : Baitadi

Member of Shivalinga Mahila Krishak Samuha farmer group

In collaboration with the Women Development Office, Baitadi.

Kalawati Bhatta participated for about 6 years in trainings on improved farmyard manure management, vegetable production and legume integration. She is very innovative and to this day, even without project support, she implements her own farm experiments. She produces improved farmyard manure and collects animal urine during the summer season.

my workload
has definitely
increased
with these
improved
practices
and the
cultivation of
vegetables,
but the
better
income
compensates
this

Introduction

Mrs. Kalawati Bhatta, a mother of 5 children, lives with her family in a house typical of the far western region. Her family owns about 16 ropani of land, most of it without access to canal irrigation water. In the past, they traditionally cultivated maize and wheat on the rainfed area, and rice and wheat on the irrigated land. In the animal shed, located on the ground floor below the living quarters, they have one buffalo, one oxen and one cow, and a few goats. In addition to the small income from farming, the husband works in a health post, which used to provide them with the bulk of the family income. Even with this income and the produce from the farm, the family was not entirely self-sufficient in food prior to the interventions by WDO.

Impact

With the interventions of WDO and SSMP, Mrs. Bhatta started to grow different kinds of vegetables and cash crops. She was the first in the area who planted potato. According to her, all the households now produce on average about 20 kg of potato with the result that nobody comes to beg for potato anymore. She grows other vegetables for her own consumption as well as for sale – in the market, she sells cauliflower, garlic, onion, radish, tomato and ginger. In earlier days she had to buy vegetables from the market, but now they are self-sufficient.

Her income has increased considerably over the last few years, and in 2006, she made about NRs. 60,000 from vegetable sales. They still have to buy staple grains, because their decision to increase vegetable production, which utilizes all the suitable land, has resulted in a decreased production of basic grains. However, with the additional income, they have no problem in purchasing rice and wheat as well as paying for the children's schooling.

Though they have increased production, their use of mineral fertilizer has decreased thanks to the use and quality of the improved farmyard manure and the animal urine. Mrs. Bhatta says that the soil characteristics have improved over the years so that the soil is now easy to till and very friable.



Mrs Kalawati Bhatta's home and buffalo (above), and well protected fym heap (below)



Frost protection for Mrs. Kalawati Bhatta vegetable crops with an old saree



Portrait of Hom Bahadur Rokaya of Baglung District



Location : Majkharka village, Ward 2, Amarbhumi VDC

District : Baglung

Member of the Himali Purush Samudayik Sangstha farmer group

In collaboration with the Syamshakti Baglung (SS-B)

Mr Hom Bahadur first took training with SS-B and SSMP in April 2006, when SS-B begun training in SSM practices and technologies. He took training in FYM improvement, urine collection, organic pest management, legume integration, and vegetable cultivation.

Baikuntha Sapkota, Chairman of SS-B says:
I am very happy and excited to see the farmers earning thousands of rupees from selling vegetables, where they used to get 5 to 10 kg of maize, wheat and barley from the same land.

Introduction

Mr. Hom Bahadur Rokaya and his wife, parents of 3 children, own 1.5 ropani of land in total, of which 1 ropani comprises poor land. Previously, he used to grow wheat, barley, and maize, and buy vegetables from a nearby market. Before he began working with SS-B and producing vegetables, he used to take work as a labourer in order to ensure sufficient food for the family; in order to obtain vegetables for the kitchen, he used to have to take dried green vegetables (gundruk – fermented leafy vegetables), or the leaves of radish to Nagarpalika, a small nearby trading centre a day's walk from his village, to sell or exchange for other vegetables. This was not only the case for Hom Bahadur but the general case for all the farmers of Amarbhumi VDC, which is a remote area in Baglung district.

Impact

Mr. Hom Bahadur now produces cauliflower, cabbage, tomato, both in-season and off-season, as well as beans, peas, and other vegetables and legumes. He now practices what he has learnt through his training, improving his FYM, collecting urine and using it on his vegetables, preparing organic pesticides with the cattle urine, integrating legumes and cultivating new different varieties of vegetables. After employing these practices, he says that his soil fertility status has increased, the land is easier to plough, and he obtains good vegetable yields. In addition, he claims that his input costs are very low, and this is partly due to assistance to him and his farmer's group from the DADO. Due to his limited land holding, he cannot produce sufficient vegetables to produce enough for the market demand – in fact, he believes that he would get a better price if he could produce in greater quantity rather than just selling by the doko.

In 2008, through the sale of vegetables, he made a profit of NRs.18,000. Sales of livestock, however, produce the bulk of the household income, contributing a

further NRs. 80,000 in 2008, mostly through pig and poultry rearing. He now owns 4 buffalo, 2 oxen, 1 goat, 5 pigs and 200 chickens.

The increased income has been used to support the education of his daughter, son, and daughter in law. His daughter is now studying a CTEVT veterinary course at Mustang, while his son is studying a BA course in Baglung.

The improvement in Hom Bahadur's life and income is characteristic of the general improvement in his village of Majkharka which covers 1 to 5 wards

of Amarbhumi VDC. Throughout the area, one can now observe new varieties of vegetables rarely seen in the locality before – such as cauliflower, cabbage, cucumber, pea, french bean and tomato. Farmers of Majkharka village are not only consuming many more vegetables but are selling vegetables to the neighbouring village of Rijal Chowk, and passengers of the passing jeeps, plying the gravel road constructed by the villagers themselves, also purchase vegetables from this area.

274 households of Majkharka village are now involved in vegetable production, and they grow as a planned cooperative - one household, one type of vegetable. In this way, the farmers can sell a wide variety of vegetables in the market and can also exchange vegetables among themselves.

According to Bharat Khadka, a Technical Officer from the DADO: "Majkharka village has very good potential for vegetables so we are focusing on the area as a vegetable production pocket". In addition, the farmers have enthusiastically taken up many of the recommended SSM practices, such as FYM and compost improvement

and proper management, cash crop production, and improved fodder and forage management. They have been strongly encouraged in these improvements by the local SSMP partner, SS-B.



The neat fields and polytunnel of Hom Bahadur Rokkha

Mr Prem Lal Naisa, a member of the Janajagran Krishak Samuha farmer group, has made a permanent FYM shed constructed of stone which very efficiently protects his FYM from sunlight, rain and run off water; he has also built a urine collection tank. Many of the participating farmers have begun to use

urine as a plant tonic and bio-pesticide on their crops and vegetables. Mrs Chandra Kumari Naisa, Chairman of the Namuna Mahila Samuha farmer group says: "Now I know that urine contains a higher nitrogen level than FYM."

Being members of these groups has also developed a stronger community spirit. Group meetings are conducted fortnightly and members call the meeting "Namaste Baithak" as they have to do Namaste before introducing themselves. Each member of the group deposits NRs 20/- per month in a savings and credit scheme, thus subsequently they can take a loan when required.

Lets leave the last word to Mr Hom Bahadur Rokka, who is now a Leader Farmer of the Himali Purush Samudayik Sangstha farmer group - he says: "Selling the local stones was the only extra source of income in earlier times, but now we are earning by selling vegetables."

Thanks to the Kantipur Newspaper, which published some of the story above on 25th February 2007.

Portrait of Guman Singh Khatri of Baglung District



Location : Hatiya Bazaar village, Ward 3, Hatiya VDC
District : Baglung

Member of the Shiva Krishak farmer group

In collaboration with Chartare Youth Club (CYC)

From 2006, Mr Khatri received training from CYC in vegetable production, and all SSM practices.

you
can
find
dollars
in your
own
land

Introduction

Guman Singh Khatri, aged 33, a father of 2 young children and originally from Dudilabhathi VDC, started his career as a Primary Level School Teacher. After 6 years of teaching, he left the job in 2001 and migrated to Hatiya VDC where he purchased 1 ropani of land and began a small poultry farm. He used to grow just maize on his 1 ropani. In Hatiya VDC, vegetables are mostly imported from Palpa, and Pokhara, thus they are expensive and not very fresh. Observing the situation, Mr.Khatri thought growing vegetables would provide a good living so in 2006 he joined the Shiva Krishak group through whom he received training on vegetable production from the Chartare Youth Club (CYC), a local NGO working with SSMP.

Impact

Mr Khatri owns only 1 ropani of land in Hatiya Bazaar village. Motivated by CYC, Mr.Khatri rented a further 1.5 ropani of land at a cost of NRs 5,000 per year, and in 2006 started to grow cauliflower, cabbage, potato, and off-season tomato in a 120 m² polytunnel. He had actually tried to use a polytunnel before collaboration with CYC, but it failed due to lack of technical know how. This time he had better success.

From his first season producing off-season tomato in the new polytunnel, he produced 15 quintel (1,500 kg) in four months, from which he earned NRs 52,500 with a net profit of NRs 22,000. He utilized this first profit for investment in a savings scheme and for admitting his son and daughter in a boarding school.

Guman Singh feels happy when he takes fresh vegetables to sell in the market, where he receives a "reasonable price", and proud when farmers from nearby villages come to visit his farm to see his model polytunnel and learn about polytunnel cultivation of tomatoes. 15 other farmers have invested in polytunnels

through the knowledge and advice obtained from Guman Singh. His success with the polytunnel have been aired on Nepal Television and published through the Kantipur newspaper to encourage others. He says: "one does not have to go aboard to earn money, if you search you will find dollars in your own land!".

One interesting aspect of Guman Singh's farming system, is that he does not have any livestock except the small poultry unit. He therefore buys in both un-decomposed fym at NRs 30 per doko, which he prepares properly before adding to the land, and urine at NRs. 1 per litre. He often buys in 200 doko of fym in one batch. In previous times, he used to dump the poultry manure in the nearby river - now he incorporates the poultry droppings in with the fym prior to proper preparation. After employing SSM practices in his land for just three years, he already recognizes that it is easier to plough and he is happy with the yields.

In 2008 on his 2½ ropani of land, he grew tomato all the year round, off-season cucumber, potato, bittergourd, onion, bean, squash, sponge-gourd, cowpea and smaller areas of other vegetables and legumes – but he mainly focuses on off-season vegetables, in order to obtain a better price. He likes doing experiments and trials, and recently he has been trying off-season onion, with the Agri Found Dark Red variety, to obtain higher yields and better prices. He has also recently improved his polyhouse to improve ventilation, and now uses string, not bamboo, to train his tomatoes in order to save costs and labour.

Mr Guman Singh keeps good records of his activities, costs and profits; for example, for his polyhouse tomatoes:

| | Total income | Total cost |
|----------------|--------------|-------------|
| Year 1 (06/07) | NRs.70,000 | NRs.30,000 |
| Year 2 (07/08) | NRs.65,000 | NRs.20,000 |
| Year 3 (08/09) | NRs.76,000 | no data yet |



Mr Khatri's polyhouse tomatoes and vegetable plot in the foreground

Currently, there are still 10 quintal (1000 kg) of tomato to harvest, and his expected return from this will boost his income for 2008-09 by NRs. 40,000.

His total income from all the vegetables he has sold in 2008 is NRs. 120,000. Usually, the total inputs for his vegetable farming activities is around NRs.14,000 annually. Guman Singh reckons that the income from vegetable sales usually contributes about 50% of his total cash income. Besides the income from vegetables, he also makes money from his poultry and a small village shop which raise about Rs.150,000 annually. This additional income is used to pay off a loan of NRs.175,000, taken on when he purchased the 1 ropani of land on settling in Hatiya VDC. His plan for the future is to buy more land and build a house as he still lives in rented accommodation.

Guman Singh is pleased that he joined his farmer group and worked with CYC – his income has improved beyond recognition, and he feels a great change in his social status. Now he feels people trust him more, and he does not have difficulties in managing his household financial matters. The vegetable farming has given him confidence, and he now feels he can care for the family properly, because even if his poultry business failed, he now has an alternative.

Portrait of Chandra Kumari Bishwakarma of Dolakha District



Location : Hupchi village, Ward 2, Marvu VDC

District : Dolakha District

Member of the Seti Devi Krishak Samuha farmer group

In collaboration with ECARDS-Dolakha

Mrs Chandra Kumari began receiving training from ECARDS in 2006; over the years, she has taken trainings on improved fym production, urine collection, organic pesticide preparation, off-season vegetable and cash crop production, and agroforestry. She is now a Lead Farmer in her farmer's group.

an
impossible
dream
just
a few
years
ago

Introduction

"Days were very difficult and challenging for me. I only had 1 ropani of bari land (rainfed) where I used to grow cereal crops - this was all we had to feed and support our family. We were so poor", says Chandra Kumari Bishwakarma of Marvu VDC in Dolakha District. Neither she nor her husband, who helps on the farm but is a blacksmith by trade, making local agricultural and other tools, had any education in this isolated VDC. They used to grow maize (the main staple), wheat, millet and a small area of potatoes on their one ropani. Chandra Kumari used to work on another farm and also assisted her husband in his blacksmith business, to help in wage earning. They have one son, aged 9, and one daughter, aged 7.

"Before 2006, we got no support from the outside and I had no idea of improved agricultural practices".

Impact

Since 2006, ECARDS, one of SSMP's partners in Dolakha district, began introducing SSM practices in Chandra Kumari's area, and she became actively involved in the programme, receiving training and technical support for vegetable production.

She began collecting urine from her 2 buffaloes, took serious steps to improve the way she prepared, managed and applied the fym, and started to grow vegetables like cauliflower, potato, onion and tomato.

Chandra Kumari soon became a leader farmer in her group, and helped to further extend the use of SSM practices in her area. In 2007, she said: "now I grow enough good quality vegetables to sell at the Singati Bazar, and on average I

am earning NRs 10,000 per year. My vegetable production is increasing due to improved fym and urine application as a plant tonic and biopesticide - I collect about 7 litres of urine each day in a drum. With my increased income, I have purchased 2 more buffalo and another half ropani of land. Now I am also managing the educational expenses of my children at the local Hupchi Primary School – an impossible dream just a few years ago.”

In 2008, Chandra Kumari expanded her vegetable cultivation activities despite the limitation of land. She grew tomatoes in another polytunnel as a share crop with Mr. Ganga Bdr. Gurung. Mr Gurung provided the land and polytunnel while Chandra Kumari provided her labour and knowledge on tomato cultivation practices. Both have earned NRs 6,000 from the shared venture. The main cash crops on her own land are now polyhouse tomato, cabbage, and akabare chilli, and she grows other crops for the kitchen.

She now has nearly 2 ropani of her own land, and rents another 1 ropani, all rainfed areas. In 2008, she earned about NRs 20,000 from off-season polyhouse tomatoes, and another NRs. 15,000 from sales of other vegetables. Even though the number of livestock she owns has increased (currently 1 buffalo, 4 cattle and 6 goats), she cannot sell her milk as the other castes, who could afford to buy the milk, remain steadfast in their refusal to purchase from a Dalit. However, the livestock remain crucial for the production of urine – with her current stock, she now estimates that she collects about 5 litres of urine per day in the summer, and about 3 litres/day in the winter.

Mr Rene Sharma, the ECARDS Coordinator in Dolakha and an experienced local resource person for SSMP says: “Chandra Kumari is a very hard working farmer, a model farmer of that community, and still has potential to develop further. The family was very poor before, but she has the ability and determination to put into practice everything that she has learnt. She obtains good yields, earns good money from her vegetables, and the family’s nutrition has definitely improved over the last few years”.

Now she has no time to help her husband in his blacksmith business, nor the time or the need to work on the farms of others – and for the last two years, the family has saved between NRs 10,000 to 15,000 in a local cooperative.



Mrs Chandra Kumari (rear) attending an ECARDS training course



Mrs Chandra Kumari and Mr Dev Gurung (standing - rear left) attending a field training on polyhouse tomatoes

Portrait of Kamala Kharal of Baglung District



Location : Kharbang village, Ward 7, Dagatumdanda VDC
District : Baglung District

Member of the Kharbang Krishak Samuha farmer group

In collaboration with CYC

Mrs Kamala Kharal has participated in SSM training with CYC since 2007. She took training on all ssm related activities, and focused on vegetable production.

now
I have
realized
the value
of
cattle
urine

Introduction

Mrs Kamala Kharal farms 3 ropani of land, and currently owns 1 buffalo. Some years ago, when times were hard, her husband went to India to search for work, and educating the three children was a difficult business. She used to grow rice, wheat, mustard, and a few vegetables at the kitchen garden level, but their food self-sufficiency was only around 6 months. Most of the time Mrs. Kharal was alone at home, and life was a struggle. Then CYC and SSMP came to the district, and she took training.

Impact

After the training through CYC where she learnt about SSM practices and other possibilities, she constructed a roof over her fym heap, and more recently with support from CYC, she built a model cattle shed for demonstration purposes.

She started collecting and using urine as fertilizer and for bio-pesticide (gitimal) to protect her vegetable crops, and adopted other SSM practices, including the integration of legumes in her fields.

She even began using urine for her rice seedlings: "in previous years when I was not using cattle urine, the rice seedlings used to be shorter, pale yellow with dried tips and margins, and were often attacked by several insect pests; see my rice seedlings now - it is taller, healthier and has grown faster and this is due to cattle urine. I applied 42 litres of fresh urine to this land with the irrigation water 10 days before ploughing and then seed sowing".

She continues: "after I started to adopt SSM practices on my cereals and vegetables, the yields increased considerably. Before my 3 ropani of land was not enough to produce food for 6 months; now this land feeds us for the whole year.

I have sold vegetables and earned NRs 16,000 in a season from 1 ropani. Local collectors now come to my home to collect my vegetables, saying Kamala produces organic vegetables!”

After incorporating SSM activities, she also states that her soil has improved a lot - it has become more friable and easier to work, darker in colour, and her yields have increased significantly, she estimates by about 20%. She also reports that previously she harvested only 8 muri of rice, but now it has increased to about 14 muri from the same irrigated field. After several years of applying SSM practices, Mrs. Kharal also feels her home environment has become more healthy, she has a reduced workload due to easier management of the fym in the improved cattle shed, and notices a definite decrease in incidence of crop diseases in her fields.

Nowadays, Kamala cultivates cauliflower, cabbage, lettuce, onion, potato, broad leaf mustard, pea, garlic, radish, carrot, broccoli,



Healthy rice seedlings due to the use of cattle urine



Mrs Kamala Kharal's covered fym heap and improved cattle shed (right) which has eased management and improved urine collection

broad bean and other vegetables and legumes on the 1 ropani of rainfed land. She produces rice, wheat, and mustard on the remainder of her farm. She received a prize after showing finger millet which she produced applying urine; the finger millet was cultivated on a borrowed one ropani of land and gave a yield of about 16 kg (4 pathi).

Kamala's input costs for her vegetable production amount to NRs.700, and by selling vegetables she earns annually about NRs.16,000. In addition, she earns NRs.15,000 annually through the sale of milk. The increased income, from herself and her husband who now earns about Rs.80,000 a year from his job in India, supports the education of her two sons in Kathmandu – her daughter is now married. Her elder son is studying at an engineering college and her younger son is in Class 9. Fortunately, her elder son received a scholarship the last two years which further eases the household financial situation.

Mrs. Kharal is very happy with her job. It is fulfilling and earns money with which she can further support a bright future for her children.

Portrait of Sanu Sharma of Myagdi District



Location : Chihandanda village, Ward 1, Piple VDC

District : Myagdi

Member of Namuna Krishak Samuha farmer group

In collaboration with the Hilly Resource Development Centre (HRDC)

Mrs Sanu Sharma took training with HRDC in 2006, focusing on SSM practices and especially vegetable production.

SSM and
vegetable
production
helped me
pay back
a big loan
and send
the kids to
school

Introduction

"In 2003 I was nearly ruined when my husband died leaving a NRs. 300,000 debt and 3 small children to feed and care for" says Sanu Sharma, 39 years old, from Piple, Myagdi. She found a job earning NRs. 1,500 a month but this ended after 2 years - then cultivating a small piece of land of 1½ ropani became the only alternative for her livelihood.

This piece of land became the basis for feeding Sanu and her 3 children, and also to fulfill all other living requirements, including her children's education and to pay back the loan. These were great challenges for her. She searched for assistance in managing her small piece of land and found the Hilly Resource Development Centre (HRDC) one of the CIs of SSMP, took training and bravely started to grow vegetables following the lessons and skills she learnt.

Impact

She describes how she linked SSM with vegetable production: "after I got training, I started to improve the way I prepared and managed the fym, to practice organic pest management and grow vegetables. I produced improved FYM, protecting it from direct sunlight and avoiding run-on, and making best use of cattle urine. The improved FYM is light and easy to apply, takes less effort to carry it to the field, and it increases my crop production. I now realize we were losing thousands of rupees especially through the loss of urine. I use the urine on my vegetables not only for nutrients but also it works as a good pesticide against vegetable pests".

She has become a local expert at producing organic pesticides: "I also use the urine to make gitimal (organic pesticides), mixing plant parts, including buds and leaves, from banamara, asuro, titepati, timur, sisno, khirro, ketuki, simali with cattle urine and then leaving it to ferment for 25-35 days. I feel these FYM, cattle urine and gitimal practices are like a melodious song for plants where they feel they

are in a relaxing environment and grow well. I am also growing beans once a year which is also improving my land through fixing nitrogen. I have already sold potato, cabbage, cauliflower and fermented cabbage (gundruk) and earned NRs 16,000, and still have some vegetables to sell this season" (2007).

Sanu Sharma concludes by saying that after 3 years of effort on vegetable production with SSM and saving with a credit and investment scheme (Dhukuti), she has finally paid off her inherited loan, and all her children are doing well in school.



Sanu at work in her vegetable plot

Collecting cattle urine for applying to crops either as a plant nutrient tonic or as an organic pesticide.



Portrait of Shyam Maya Rai of Okhaldunga District



Location : Tekanpur village, Ward 8, Baruneshor VDC,
District : Okhaldunga

Member of the Kamladip Misrit Samudaik Sanstha farmer group

In collaboration with GMJS

Ms Shyam Maya Rai was trained on all aspects of SSM technologies in 2005. She is now an Experienced Leader Farmer, manager of her farmer group, and farmer representative on the district SSMP Fund Management Committee.

vegetables
grown
from just a
few ropani
has now
become
the major
income
source for
our family

Introduction

"I had to stop my schooling when I lost my mum 15 years ago. Then my father lost his vision from night blindness (motiyabindu) in 2001. After that I had to bear all the responsibility of caring for my father and the farm. We have 11 ropani of land but it was not very fertile and we only used to produce enough maize and finger millet for 3 months of the year", says Ms. Shyam Maya Rai. She used to have to find off-farm labouring work to meet their food requirements for the rest of the year.

Since 2001, she has been a member of a group formed by the Local Development Fund and her group received support from the District Road Support Programme (DRSP). For 5 years with her group members, she found work on the Rampur-Okhaldunga road for 30-45 days per year. Then, in 2005, she received training in SSM technologies and practices.

Impact

In her own words: "I got the opportunity to participate in training on various SSM practices, after GMJS and SSMP started to work with our road group in 2005. I was also selected as a leader farmer of my group, which inspired me to start vegetable production. Later, I received support for a plastic tunnel where I produced off-season tomato and earned NRs 13,000 in one season. In 3 years, I have now earned NRs 35,000 from tomato production and will continue. I am also producing other vegetables like cabbage, cauliflower, radish, cucumber, okra, beans, peas, bittergourd, onion, garlic, and leafy vegetables, and sell whatever is available at the weekly haat bazaar in Okhaldunga. The sale of vegetables grown from just a few ropani has now become the major income source for our family".

She then improved her cattle shed so that she could collect more urine and upgrade the quality of the fym she prepares; currently, she owns 1 ox, 2 cows, and a pig.

Among the SSM practices that she began to use were improved FYM, use of urine as a plant tonic, preparation and application of organic pesticide (gitimal), and legume integration. Over the years, she says that the soil in her fields has become less compact, more friable and easier to plough, and to this day, she has yet to use mineral fertilizer.

She now produces off-season tomato in the polyhouse, and very recently, she purchased another polytunnel with profits made from previous seasons. Now, food sufficiency is up to 12 month as she uses the profits from the vegetables sales to purchase the staples they need.



Ms Shyam Maya in front of her polyhouse tomato crop

In the last two years, she estimates that she has earned around NRs. 55,000 annually from selling vegetables. In addition, she earns about NRs 20,000 each year from the sale of pigs and local chickens. She says her income has doubled in the last few years, and she has used the additional income to purchase other pigs, a mobile phone, and some gold jewelry. Other improvements in her life due to the production and sale of vegetables include the construction of a cemented toilet, re-wiring all the electrics in her house, being able to afford an operation and treatment for her father, in connection with his night blindness - and on top of all this, she has saved NRs.10,000 with her local co-operative savings and credit scheme.

After his operation, her father regained his eyesight and he was amazed at the transformation of the farm over the years during which he was blind. He was not the only one who was impressed - many have been inspired with the dedication and hard work of Ms Shyam Maya - besides SSMP, she has received support from the

DfiD funded APPSP, the UNDP funded LGP, as well as her District Agricultural Development Office. She is now the manager of her farmer's group Kamladip Misrit Samudaik Sanstha, a women's cooperative, and has received training as an IPM facilitator. Subsequently, she facilitated an IPM farmer field school supported by APPSP (DFID), and a polyhouse vegetable production training in Laglage village, supported by the DADO. She has now facilitated a total of 10 trainings as ELF from the SSMP FtF programme, and she acts as the farmer representative on the SSMP Fund Management Committee.

She concludes: "In the beginning, my father, who is 85 now, was not happy with me being away from home attending group

meetings and trainings, but nowadays he is convinced by my work and proud of me. My neighbours are also getting courage and ideas from my work". In addition, on her future plans: "I was selected as an Experienced Leader Farmer (ELF) and in 2007 received 4 days capacity building training. These have greatly encouraged my interest in providing support to other farmers in remote villages and in sharing my agricultural experiences through the farmer to farmer (FtF) extension programme. I am so interested in starting this new challenge".



Shyam Maya's elderly father

Portrait of Shankar Bahadur Dangal of Sindhupalchok District



Location : Majuwatar village, Ward 1, Bhimtar VDC
District : Sindhupalchok

Member of the Bhimtar-1-Digo Bhu Bevasthan Samuha farmer group

In collaboration with the Community Development and Environment Conservation Forum (CDECF).

Mr. Dangal received training in 2004 from CDECF and SSMP in general SSM techniques and practices, and received special instruction in vermi compost preparation, use of urine, and vegetable production.

there were
too many
tears in
my past,
but today
I am fully
satisfied

Introduction

Mr. Shankar Bahadur Dangal, aged 48, is the father of three sons, and owns 11 ropani of land, of which 9 are rainfed and 2 irrigated.

Mr Dangal has overcome a number of hurdles in his life. In 1990, while digging a channel to provide water to his village, a serious accident took place, which took the life of one of his friends, and left Mr Dangal unconscious for about 3 days and with serious injuries to his backbone and skull. After recovering from the accident, he moved to India to earn some money because he was already in debt of NRs 100,000 (one lakh) which he had to borrow for his treatment. In India, he made little progress, and in fact fell sick again. He returned to his own village, and started farming. In 1992, he planted 80 plants of cucurbits, with advice from his neighbour Ramesh Acharya. From this, he earned NRs. 15,000 and in the next year, he earned about NRs.30,000 from 100 plants of cucurbits.

He also used to grow maize, blackgram, finger millet, and soybean on his rainfed land, and rice and wheat on his irrigated land. His village had little access to irrigation, so it was very hard for him to produce vegetables on a commercial scale in his rainfed area. Before he took the SSM training his family was 8 month food self-sufficient. He struggled on until 2004.

Impact

Life changed in 2004, when he received training from CDECF in SSM technologies and practices, from which he gained a lot of technical farming knowledge. He has applied much that he has learnt in the past few years with CDECF, and nowadays his life is much better – he feels he has a new life.

He now cultivates vegetables on 1½ ropani of land with surplus irrigation water. On the rest of his land, he cultivates staples like rice, wheat, and finger millet.

He uses vermi-compost, improved FYM, and urine on his vegetable plots. He says that this has resulted in a considerable reduction in his use of mineral fertilizer, though he still uses between 25-30 kg for growing his potatoes. He feels that the yield is the same when he applied just a small amount of improved FYM as compared to large amounts of traditionally prepared fym that he used before.

His 2008 cropping pattern and total income for the vegetables were as follows:

from cucumber, bittergourd, chilli, tomato, pumpkin produced between April & July = NRs.40,000

from polyhouse tomato (using var. Srijana) = NRs.15,000

from cauliflower produced between Aug, & Oct. = NRs.14,000

from potato, garlic, onion produced from Oct. onwards = NRs.12,000

Input costs for all the vegetables totalled NRs.10,000. In 2008, he earned a profit of about NRs 70,000 from his vegetables, and NRs.6,000 each month by selling milk. In addition, he earned NRs. 13,000 by selling earthworms to others who are establishing vermi culture colonies.

Mr Dungal says his income has at least doubled over the last few years, and he has used this increase to accelerate the repayment of his loan, for education fees for his children, and for constructing a new home. The family is now food sufficient all the year round.

Mr. Dungal still feels some lack in his technical knowledge, and for the vegetable farming, he still faces a challenge of insufficient irrigation water.

In comparison to past days, however, he is now very satisfied with his present life. Remembering the past days, he recalls that sometimes it was a struggle to find NRs 50 some days, but those days are past and now he can easily manage earning NRs.50,000 a year.



Mr Dungal's impressive potato plot



Mr Dungal's vermi-culture colony

Portrait of Jhankanath Poudel of Syangja District



Location : Thulakhet village, Ward 4 Bangsingh Deurali VDC
District : Syanja

Member of the Hariyali Krishak Samuha farmer group

In collaboration with Aapasi Sahayog Kendra (ASK)

Mr. Poudel took training with ASK in 2005 when he received coaching in SSM practices and technologies. He is now a Leader Farmer.

producing
and selling
vegetables
has
increased
my income
by at least
60%

Introduction

Jhankanath Poudel lives with his wife, 2 sons, and his mother and father, and owns about 7 ropani of land, of which 2 ropani are rainfed land, and 5 ropani irrigated land. Previously he used to cultivate finger millet and maize on the rainfed area, and rice on the irrigated land, plus a few vegetables in a small kitchen garden. He is an educated person having completed his SLC, and following in his footsteps, his elder son is studying at PCL level in Pokhara.

Impact

He first became involved with ASK and SSMP activities in 2005. Following his training, he began improving his fym, preparing good quality compost, collecting and using the urine from his animals – currently he has 3 buffaloes, 3 goats and 1 bull – and growing vegetables in earnest including polytunnel tomatoes. He collects the urine by an efficient gravity pipe system and uses it as both plant nutrient tonic and for preparation of organic pesticide.

On his rainfed area, he now cultivates 1 ropani of finger millet, and one ropani of vegetables where he grows polytunnel tomato, cauliflower, cabbage, cucumber, sponge gourd and others, expanding his area of vegetables to a commercial scale.

Due to his SSM practices, he has been able to significantly reduce the amount of mineral fertilizer that he uses, although he still uses a little urea. According to him, using improved FYM has resulted in a much more friable soil which is much easier to plough. Along with the fym, the use of animal urine and organic pesticide has also prevented 80% of the diseases that he used to experience on his farm.

In 2008, through the sale of vegetables, he earned about NRs.70,000, and he reckons his income has increased by at least 60% through the sale of vegetables. Although he now has no problem in paying for his son's college fees in Pokhara, this increased income, however, is now required to buy staples, rice and wheat, as the construction of the new village road has taken 2 ropani of his land.

He is very pleased to have taken the SSM training, and feels his status in his community has improved. However, although his vegetable cultivation has increased his income level, he still faces a cash flow problem when producing on a commercial level. For example, in 2008, he had to take a loan to construct a new polytunnel, and his total farm inputs totaled NRs 40,000. He also received some support from ASK and DADO.



The very tidy tomato polytunnel of Mr Poudel



A low mini-polytunnel for raising seedlings, and a good crop of cauliflower



Mr Poudel's neat system of urine collection

Portrait of Kalakumari and Durga Bahadur Bhandari of Baglung District



Location : Palakot village, Ward 4, Pala VDC
District : Baglung

Member of the Ekata Aatmanirvar Mahila Kendra farmer group

In collaboration with Chartare Youth Club (CYC)

Mr Durga Bahadur took training on all the SSM technologies and practices in 2005. His wife, Kalakumari, soon learnt the skills from Durga Bdr..

ultimately

your

hard

work

always

pays

Introduction

Durga Bahadur and Kalakumari Bhandari, parents of four children, have 10 ropani of land, of which 5 is rainfed and 5 irrigated – before they received SSM training, they used to grow rice and wheat on the irrigated land and maize, garlic and radish on the rainfed land.

Impact

After joining the group Ekata Aatmanirvar Mahila Kendra in 2005, and receiving training from CYC and SSMP, Durga Bahadur started using various SSM practices on his farm such as improved preparation and management of farm yard manure and compost, and the use of cattle urine as both plant tonic as well as a basis for organic pesticide.

He says that the productivity of his soil has improved resulting in an increase in production in both the maize and rice crop, they estimate by 2 muri in the maize crop, and 3 muri in the rice crop in comparison with the yields harvested in 2004. In addition, they have reduced the use of urea by 25 kg, saving NRs 625 annually.

Nowadays, they are growing cauliflower, cabbage, radish, carrot, garlic, onion, cucumber, legumes and other fresh vegetable both in-season and off-season on the rainfed land, and much of the produce goes for sale to the market. They are also selling paddy and maize.

Their annual earnings in 2006 were around NRs 10,500 - they then purchased 1 more cow and 2 more goats. In 2008, earnings increased to about NRs. 36,000 from vegetable sales, and to about NRs. 20,000 from sales of the staples. They now own a total of 3 buffalo, 2 oxen, 3 cows and 3 goats, and also add to their income by about NRs. 6,000 from sales of livestock produce. In the last two years, they have even made enough money to save in the local savings and credit scheme (dhukuti).

He is very happy to see the results of their hard work, and says smilingly "ultimately your hard work always pays".



*Kalakumari Bhandari
with her cauliflower crop*

Acknowledgements

This compilation of stories was produced with the help of many people. With many thanks, therefore, to our front line farmers from the mid-hills of Nepal, especially those featured in this booklet; to our collaborating institutions in the districts, both NGOs and government offices; to staff and colleagues at the Department of Agriculture and Ministry of Agriculture and Cooperatives; to Dr Juerg Merz for the initial concept, the format, the first few profiles, and his continued interest - and last, but far from least, to our donors, the Swiss Agency for Development and Cooperation (SDC) in Kathmandu and Bern, and the Swiss people for their continued and generous support to Nepal and the Nepalese people.



Terms and Abbreviations

| | |
|---------|---|
| APPSP | Agriculture Perspective Plan Support Programme, a DfiD funded project |
| bari | farm land that is not irrigated and where crop production relies on rainfall |
| CBO | community based organization |
| CGS | competitive grant system |
| DADO | the District Agriculture Development Office, part of GoN |
| DfiD | the UK's Department for International Development |
| doko | traditional Nepalese basket, used for transportation of crops and fym, and carried on the back like a rucksack |
| GHGs | green house gases |
| gitimal | a mixture of cattle urine and different plant materials, used as a plant nutrient and organic pesticide |
| GoN | Government of Nepal |
| FYM | farmyard manure |
| FtF | farmer to farmer diffusion - spreading lessons, practices and technologies from one farmer to another through a lead farmer |
| katha | a measure of land area; 1 katha = 0.66 ropani, 30 katha = 1 hectare |
| khet | farm land that is irrigated |
| MoAC | Ministry of Agriculture and Cooperatives |
| NGO | non-government organization |
| NRs | Nepali Rupee; NRs 70 ~ 1 CHF; NRs 80 ~ 1 US\$ (March 2009) |
| ropani | a measure of land area; 1 ropani = 1.5 katha, 20 ropani = 1 hectare |
| quintal | a measure of weight, 1 quintal = 100 kg |
| SDC | Swiss Agency for Development and Cooperation |
| SSM | sustainable soil management |
| SSMP | Sustainable Soil Management Programme |
| VDC | Village Development Committee, also the term used for a sub-district |
| Ward | a sub division of a VDC; there are 9 wards in a VDC |