

Himalayan Permaculture Centre

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Building Livelihoods for Household and Community Resilience

6-month Report

Date of this report: November 2017



Introduction and background

This report heralds the end of the second of 3 years of the **Building Livelihoods for Household and Community Resilience** program run by HPC and its member groups in Surkhet and Humla districts of western Nepal. This program is itself the 3rd phase of a longer term initiative started in 2012 with an overall aim of increasing the resilience and productivity of communities through integrated activities of food security, health, education, livelihoods and capacity building. These activities are also aimed at being a model for wider replication and application of HPC's working methods and approaches.

Details of achievements over the current reporting period from May to November 2017 are provided here.

Working Areas

An updated summary of groups' names, locations and demographics is given below. In recent political changes, what were Village Development Committees (VDCs) are now called "municipalities" and often 2 or more have been merged and re-named.

| | | Households | Women | Men | Total |
|----------------|-------------------------------|-------------------|--------------|-------------|--------------|
| Surkhet | 1 municipality, 10 villages | 169 | 521 | 584 | 1105 |
| Humla | 2 municipalities, 11 villages | 274 | 820 | 827 | 1647 |
| Total | 3 municipalities, 21 villages | 443 | 1341 | 1411 | 2752 |

These figures represent the demographics of the villages that have been registered with HPC as participating villages. They do not include the new villages that have requested participation, where HPC staff and barefoot consultants have started to work. Details of activities in these new villages are included in the report below but are kept separate where possible.

Details of the new villages are as follows:

| | | Households | Women | Men | Total |
|----------------|-------------------------------|-------------------|--------------|-------------|--------------|
| Surkhet | 1 municipality, 4 villages | 264 | 787 | 883 | 1670 |
| Humla | 1 municipality, 7 villages | 303 | 863 | 872 | 1735 |
| Total | 2 municipalities, 11 villages | 567 | 1650 | 1755 | 3405 |

ACTIVITIES

While the monsoon has been “reasonable” this year and most farmers report crops are “average”, the main problems at present are difficulties in overcoming the backlog of activities from the past 2 years that started with the Indian blockade and then the SWC registration difficulties that have been reported previously. These are slowly being overcome but there is still an under-spend of budget and some activities that are still delayed. In some cases reliance on external factors have been a problem, e.g. failure of the agricultural machinery division to deliver the millet thresher and de-huller. The political election system has caused frequent restrictions and distractions: for several months HPC was prevented from operating any health camps (in case they were used for political ends!) and the instability caused by this is still present as the nation goes through a new and unfamiliar voting system of municipalities and regions. It seems there have been on-going elections lasting for months and the populace is clearly distracted by this. Hopefully the final round of elections are due to be held in early December.

1. FOOD SECURITY PROGRAM

1.1 Resource Centers

The Resource Centres (RCs) have been the first systematic establishment of demonstration and training facilities, and are regarded as the heart of HPC activities in its working areas. HPC is operating its own resource centres in Surkhet and Humla, and is working with a partner, Sunrise Farm in Kathmandu as a third RC which has demonstration and facilities as well as a particular function of providing a contact station in the capital Kathmandu.

RC production – Surkhet

For the first time rice has been grown at HPC's Baragaun RC, using an upland variety from Humla with traditional and SRI growing techniques. Research with other new vegetables such as ground apple has also been started. The RC has also started experimenting with urine collection & use having constructed a simple collection tank from the male urinal. The flexi-biogas installed in December 2016 is providing around 15% of fuel needs. Other newly demonstrated technologies include the cold store and a solar dryer which add to the existing demonstrations including stoves, kitchen gardens, fruit tree and agro-forestry systems, arable crops, greenhouse, composting, and various plant nurseries for vegetables, medicinal and culinary herbs, fruit trees and multipurpose trees and shrubs.

Meanwhile, over the past 6 months the farm has produced over **220kg of vegetables and grains, 252 kg of fodder and 52 kg of firewood**. It has planted 14 new fruit trees and 673 multi-purpose trees and shrubs, has 38 grafted fruit trees ready for distribution and 700 rootstock ready for grafting this winter.

Aside from all the farmers' trainings and meetings held at the RC, it has received 30 visitors, 22 from Nepali government and non-government institutions and 8 foreign visitors.

RC production – Humla

Humla RC comprises 7 small farms (total area of 2Ha) in Dapka village. Since May a total of **1094kg of vegetables** have been produced including garlic (350kg), pumpkin (202kg), potato (200kg), with other crops including cucumber, aubergine, tomato, comfrey, cabbage, cauliflower, coriander, lettuce, carrot, Swiss chard, radish, rhubarb,

Daubenton kale, taro and chilli. In addition, 76 new seedlings have been planted at the RC including strawberry and ground apple, and 33 medicinal plants such as mint, wild asparagus and aloe vera planted. Finally, a massive **2200kg of fruit** has been harvested mainly from plum (900kg), peach (700kg) and apple (500kg) and smaller amounts of pear, walnut, almond, hazelnut and damson. More than can be eaten or stored, some has been sold, juiced, dried, brewed, fed to livestock or gone to feed the hornets that proliferate at the time of year. Or simply rotted back into the soil where it originated.

Sunrise Farm

Sunrise Farm is a tiny plot that has functioned as a permaculture demonstration and training centre in Kathmandu since 1991. Due to encroachment of the city and selling of plots rented by the original farm, it now covers just 0.25 acres, but is still thriving as a centre of permaculture networking in the capital, and is the only organic farm within the city limits. Over the past 6 months the farm has produced 50 kg fruit, 25kg vegetables, 900 litres of milk and 900 chicken and duck eggs. As well as 15 Nepali visitors, it has also hosted 132 foreign visitors/volunteers (from WWOOF, Helpex and WorkAway) from all habitable continents. Some of these have gone on to visit HPC's centre in Surkhet.

1.2 Farmers' demonstrations

HPC supplies various basic tools to farmers' groups enabling them to implement activities in their villages. These include grafting knives, secateurs, irrigation pipe, sprinklers and plastic for hot beds and small polytunnels.

As a result of demonstrations at the RCs and in farmers' fields, and various training opportunities at the RCs and in situ in the villages (see below 1.3), groups are involved in implementing various types of practical work in their houses and fields to increase household self-reliance. A summary of all practical work carried out in the groups from May to October is as follows:

Farmers making integrated demonstrations

| Practical Activities May-Oct 2017 | | Humla | Surkhet | Total |
|--|------------------------------------|--------------|----------------|--------------|
| | No: households implementing | 577 | 264 | 841 |
| 1 | House hygiene | 536 | 257 | 793 |
| 2 | Stove | 412 | 11 | 423 |
| 3 | Toilet | 255 | 5 | 260 |
| 4 | Grinder | 480 | 261 | 741 |
| 5 | Water pot | 464 | 233 | 697 |
| 6 | Hay box | 24 | 5 | 29 |
| 7 | Sweepings | 276 | 83 | 359 |
| 8 | Waste water management | 368 | 57 | 425 |
| 9 | Plate/pot rack | 221 | 102 | 323 |
| 10 | Compost | 37 | 141 | 178 |
| 11 | Fodder trough | 11 | 5 | 16 |
| 12 | Salt lick | 29 | 42 | 71 |
| 13 | Kitchen garden/vegetables | 463 | 253 | 716 |
| 14 | Mulching | 3 | 27 | 30 |
| 15 | Liquid manure | 24 | 66 | 90 |
| 16 | hot bed | 2 | 0 | 2 |
| 17 | Leaf pots | 43 | 0 | 43 |

| | | | | |
|----|------------------------|-----|-----|------------|
| 18 | Home nursery | 485 | 8 | 493 |
| 19 | Fruit nursery | 118 | 53 | 171 |
| 20 | Air nursery | 3 | 21 | 24 |
| 21 | Off season onions | 53 | 4 | 57 |
| 22 | Grafting | 97 | 0 | 97 |
| 23 | Budding | 45 | 4 | 49 |
| 24 | Top grafting | 67 | 0 | 67 |
| 25 | Air layering | 12 | 12 | 24 |
| 26 | Pot irrigation | 22 | 4 | 26 |
| 27 | Orchard | 86 | 24 | 110 |
| 28 | Agro-forestry | 16 | 13 | 29 |
| 29 | SRI | 59 | 57 | 116 |
| 30 | Green manures | 21 | 15 | 36 |
| 31 | No till | 0 | 0 | 0 |
| 32 | Bamboo cuttings | 0 | 2 | 2 |
| 33 | Improved plough | 26 | 76 | 102 |
| 34 | Fruit tree Pruning | 3 | 82 | 85 |
| 35 | Greenhouse | 9 | 0 | 9 |
| 36 | Biomass compost | 8 | 37 | 45 |
| 37 | Double digging | 0 | 31 | 31 |
| 38 | Urine collection & use | 13 | 21 | 34 |
| 39 | Seed production | 18 | 142 | 160 |
| 40 | Fruit tree planting | 38 | 195 | 233 |
| 41 | Making jam/juice | 22 | 0 | 22 |
| 42 | Solar dryer | 8 | 1 | 9 |

Most of these activities are illustrated in the [Farmers' Handbook](#), a key training tool used by HPC. New additions to this year's techniques are juice/jam making and trials of solar dryers (see below).

Demonstration farms

The rice growing season of 2017 was characterised in Surkhet by a drought towards the end of the season, when no rain fell for a whole month during the normally wet month of August, when rice would be forming grain heads. Large areas of rice were left unmanaged as farmers gave up on crop expectations, while many farmers observed the flourishing fields of some of HPC's demonstration farmers that had been using organic techniques, liquid manure, SRI, agro-forestry, etc. This increased resilience against drought is largely the result of (a) higher organic matter content enabling more moisture to be stored in the soil and (b) shade and wind protection of trees, and more ground cover from mulch and cover crops (green manures) reducing soil moisture loss in alley-cropping systems.

Fruit and multi-purpose tree production and planting

The summer season sees techniques such as budding and air layering used for fruit tree propagation. In Humla a total of **195 plants** have been budded in nurseries, mainly plum and peach. A further **15 plants** have been air-layered. In total of **248 fruit and multi-purpose trees, bushes and shrubs** have been planted by group members over the monsoon, including pomegranate, orange, lemon, ground apple, grapefruit, lemon grass, comfrey and bakaino. A further **238 plants** have been sold/distributed outside of the area.

Also in Humla nurseries, a total of **1667 grafted/budded fruit trees** (apple, walnut, almond, pear, plum, apricot and peach) are ready for winter planting and distribution,

with over **15,000 root stock** of wild varieties of apple, peach, walnut and pear ready for grafting.

The result of continued fruit planting over the past 15 years of interventions in the Humla communities has resulted in the documented production of nearly **6800kg** of fruit by the 11 groups this Autumn. Of this, 95% came from apples, plum and peach and the remainder from pear, walnut, apricot, strawberry, almond, damson, Asian pepper, hazelnut and raspberry. This is why HPC is now testing different technologies for processing the fruit with drying, jam and juice making and cold storage. Beyond this, the carriage and marketing of such produce will be the next important issue to address.

In Surkhet farmers have excelled in fruit and multi-purpose tree and shrub planting over the monsoon planting season. Over **16,000 trees** and shrubs have been planted comprising **43 different species**. Of these, Napier grass, lemon grass and mulberry account for over 12,000 plants. In terms of **fruit trees and shrubs**, over **10,700** have been planted comprising **35 different species**, of which cardamom accounts for over 8000, and the next nearest being lemon at over 600.

SRI Rice Farming

More farmers are gradually becoming aware of this innovative technique of rice cultivation, which uses less water and seed than conventional rice growing, and planting younger seedlings at wider spacing. In Humla **59 farmers** are experimenting on small plots varying from 1m² to 1100m². Of these, 50 were trained by HPC and a further 9 have learned from them. In Surkhet, **58 farmers** are implementing SRI, giving this season the highest number of practicing SRI farmers to date, and at **7.6Ha** the largest area yet under SRI production. This may not sound much under western standards but for a radically different technique that involves risk to production to try out, and with small land areas – often belonging to subsistence farmers (average land holding area under 0.4 Ha), it's a huge step.

Meanwhile, the **world altitude record for SRI** has been broken in Humla by HPC technician Mr Rage B.K. with a successful plot at around **2550m** altitude. The previous record, also in Humla, was held by HPC technician Hangse Buddha.

Community Funds

Groups in Surkhet and Humla continue to self-manage and grow their micro-credit funds, providing loans to group members for various purposes such as paying for school fees, food security, health services and starting local businesses. This reporting period's audit is summarised below:

| | Loans given | Expenses | Cash | Total NRs | GB£ |
|--------------|--------------------|-----------------|----------------|------------------|-------------------|
| Humla | 74,283 | 22,603 | 136,100 | 232,986 | £1700 |
| Surkhet | 1,191,595 | 150,746 | 36,420 | 1,378,761 | £10138 |
| Total | 1,265,878 | 173,349 | 172,520 | 1,611,747 | ££11838.00 |

1.3 Farmers' Training

Several types of farmers' training have continued over the summer, including residential 5-day integrated trainings, shorter mobile trainings in livestock health, women's health (see below 2.1), and a plethora of short technical trainings running from 1 hour to a day. Trainings are now delivered by both HPC staff and barefoot consultants.

Over the past 6 months HPC has started to introduce adaptations of existing trainings as per the request of village groups and opportunities presented. Examples are cooking, blacksmiths' and cardamom training. This process will increase in the third and final year of this program.

| Surkhet | No: Trainings | Days | Participants | | |
|-------------------------------|------------------|-----------|--------------|------------|------------|
| | | | Women | Men | Total |
| Video training | 2 | 8 | 1 | 4 | 5 |
| Mobile Trainings | 7 | 24 | 72 | 46 | 118 |
| Technical Trainings | 12 | 2 | 29 | 41 | 70 |
| Opportunity Analysis Training | 1 | 3 | 2 | 19 | 21 |
| Cardamom Training | 1 | 2 | 0 | 23 | 23 |
| Medicinal Herbs Training | 1 | 3 | 6 | 13 | 19 |
| Blacksmith training | 1 | 5 | 0 | 3 | 3 |
| Total | 24 | 47 | 110 | 149 | 259 |

Humla

| | | | | | |
|-------------------------------|-----------|-----------|------------|------------|------------|
| Residential Farmers' Training | 1 | 5 | 8 | 13 | 21 |
| Mobile Farmers' Training | 5 | 10 | 48 | 44 | 92 |
| Mobile Livestock training | 1 | 3 | 14 | 6 | 20 |
| Seed production training | 1 | 3 | 6 | 10 | 16 |
| Technical Trainings | 61 | 20 | 153 | 173 | 326 |
| Total | 69 | 41 | 229 | 246 | 475 |
| Total All Areas | 94 | 88 | 339 | 395 | 734 |

Slide and Film shows

Shows are delivered to village groups and at RCs using re-chargeable pico-projectors. Increasingly, short videos and slide shows produced by HPC are also being used (see below 5.10). In the past 6 months 9 shows have been shown to **296 villagers** (169 female and 127 male) in HPC's working areas.

1.4 Livestock

HPC's approach continues to focus on training and demonstration, with support given to improved breed provision and breeding, livestock health and stall management. In Humla, barefoot vets have provided livestock health training to 20 farmers and treatment to **582 livestock** (302 goat/sheep, 249 ox/cow, 20 buffalo and 11 horses) in mobile health camps. In Surkhet, only castration has been carried out on ox and goats. In total 224 livestock have been castrated (87 ox, 72 goats). A summary is given below.

| Worms | | External parasites | | | wounds | | | Digestive problem | | | Total | | | | |
|------------|---------|--------------------|---------|-----|------------|------------|---------|-------------------|------------|------------|-------|---|---|---|-----|
| Horse/mule | Cow | Horse/mule | Buffalo | Cow | Sheep/goat | Horse/mule | Buffalo | Cow | Sheep/goat | Horse/mule | Cow | | | | |
| 107 | 18 | 11 | 8 | 97 | 272 | 8 | 3 | 1 | 0 | 0 | 5 | 9 | 1 | 0 | 582 |
| Sheep/goat | Buffalo | Cow | | | | | | | | | | | | | |

Improved breeds of livestock

HPC has been providing both districts with improved Buffalo, goat and cow with an aim of increasing livestock productivity. In Humla 1 buffalo bull and Surkhet 1 billy goat have been provided during this reporting period. Farmers have reported that the improved breeds offer the benefits of better health/less disease, larger size and better price when selling.

1.5 Irrigation

In Humla 2 irrigation tanks of 16m³ and 6m³ have been built for 2 households to irrigate a quarter acre of vegetable and field crops in Lotpata and Telgaun villages respectively. HPC has provided silpaulin plastic to line the tanks with all other inputs provided by the communities.

In Surkhet 3 new irrigation systems have been installed in Gurung Gaun, Mavidada and Subatol villages. Two have used pits dug out and lined with silpaulin heavy duty plastic as reservoirs from which to collect and distribute water. The third is simply gravity fed water from a spring direct to irrigated fields. A fourth system in Pakhapani village involved maintenance of a previously constructed system. In total of **23.5 hectares** of land is able to be irrigated from these systems, benefitting **59 households** comprising **345 villagers** (161 women and 184 men).

1.6 Appropriate Technology

This program aims to test and demonstrate various labour and resource-saving and/or product improving devices in its working area, with a view to further distribution when the technologies are seen to be appropriate.

Two rice winnowers have been provided to groups in Surkhet – they can process 50kg rice, winnowed in 30 minutes. Likewise, 3 types of maize de-huller are being trialled in Surkhet and Humla that range from a cheap, hand held devise to a hand operated mill.

A millet (Chinu) thresher was ordered from the Agricultural Mechanical Division 18 months ago and still has not been delivered due to technical development problems.

2. HEALTH PROGRAM

2.1 Women's Health Program (WHP)

HPC's Women's Health Program works around 3 main activities: training, health camps and networking. Women's Health Training (WHT) takes place through residential 5-7 day trainings at the resource centres and mobile 3-day courses run in the villages. Short half to 1 day trainings and workshops are also provided.

Women's Health Camps (WHCs) have taken place each year in both districts and involve a trained team of specialists providing diagnosis, counselling, treatment and referral services as well as educational classes to attendees of the camps.

The Women's Health Network (WHN) involves meetings between women active in the trainings and camps where they discuss issues, develop strategies and plan events including the WHTs and WHCs

Women's Health Training (WHT)

In May, a full 5-day WHT was provided to 21 women in Humla in collaboration with the Madana Health post, who provided nurses to support the training. The 3-day mobile WHT was provided in 5 villages by HPC's nurse Mrs Sukuma Karki with assistance from members of the WHN. Included in these 5 trainings were 2 focussing on **adolescents**, provided to 41 students (29 girls and 12 boys) at 2 schools in the area. Topics included in this training are:

- Definition of 'adolescence'
- Changes in the body during adolescence
- Social attitudes to adolescence
- Menstruation & hygiene
- Dangers of Child marriage and early child bearing
- Gender balance

Finally, a gender training was provided to 9 women and 9 men in Humla.

In Surkhet the mobile WHT has been modified to focus on diet with topics about balanced diet, food processing, pickling and various cooking techniques.

In total over the past 6 months, 12 women's health and gender-related trainings have been delivered to **205 women and 21 men**.

Women's Health Camp (WHC)

In July a 1-day health camp was held at the Health post in Baragaun, to which HPC has provided infrastructure support to over the past year. A total of **46 women and 7 men** received treatment

In October a 2-day WHC was held at the municipal health post in Madana, Humla. HPC was fortunate to avail the services of another female doctor, Dr. Sitasma Dangi, who braved the tough walking and living conditions to become only the second ever female doctor to visit southern Humla. Here, she delivered diagnosis, treatment and counselling to **245 villagers (227 women and 18 men)**, with the assistance of HPC's top women's health advisor Mrs Hommaya Gurung, trainee nurse Mrs Sukuma Karki of Madana, and the volunteers of HPC's Women's Health Network for Humla.

| Diagnosis | No: patients |
|-------------------------|--------------|
| prolapse stage 1 | 10 |
| Haemorrhage | 12 |
| white discharge | 57 |
| backache | 16 |
| vaginal itching | 6 |
| urinary tract infection | 10 |
| eye ache | 17 |
| wound on uterus | 9 |
| gastric ulcer | 27 |
| headache | 22 |
| Fiver | 3 |
| irregular menstruation | 3 |
| pregnancy test | 21 |
| toothache | 2 |
| diarrhoeah | 6 |

| | |
|--------------------|------------|
| Worm | 36 |
| weak limbs | 15 |
| Lower abdomen pain | 67 |
| allergy | 11 |
| infertility | 1 |
| Total | 351 |

One of the most common problems seen with the women at the WHC was anaemia, caused by excessive bleeding and poor diet. In most cases, the excessive bleeding was caused by inappropriate contraceptive practices that are not monitored. Uterine problems are further linked by prolapsed uterus, caused by early child bearing before the uterus is fully developed, and heavy workloads. Domestic violence then adds to the mix, resulting in a host of problems facing women and adolescent girls. Some of these can be remedied by WH and gender training and awareness raising in treatment and prevention, some by direct provision of appropriate contraceptive devices, some by improvement in farming and domestic interventions (smokeless stoves, better vegetables, etc.) and all by a holistic, integrated approach that puts women's health at the centre of activities.

Another reflection on this WHC was that there were relatively less patients with fewer reproductive ailments from HPC working areas (Madana VDC) than from outside (Maila, Kalika) VDCs.

The WHC was due to be held in the first reporting period but due to elections was prevented from running at the last minute. To make use of the large number of medicines acquired, HPC provided the medicines to the local Health Post and also distributed from its resource centre. In total **157 villagers** comprising **96 women and 61 men** were provided treatment from both sites for a range of ailments including fever, diarrhoea, worms, back pain, eye/ear infection and vaginal white discharge.

HPC has also been providing support to the local health post in Baragaun, with materials and infrastructure support. In this period the Health Post has been able to provide health services to **322 villagers (185 female and 137 male)** for a range of issues from urinary tract infections and gastric ulcers to burns, skin parasites and pregnancy tests.

Women's Health Network (WHN)

WHN network members continue to support activities in the WHP. Groups in both districts meet to review activities and plan new ones. They also provide support in trainings and health camps. As such, they remain active in supporting the activities of HPC, whilst also building their own capacity to lead in women's health and rights issues, thus further benefiting the women in the region.

1.2 Drinking Water

HPC constructs small scale drinking water systems for villages using its non-cement technique, tapping small local springs and bringing water to village tap stands. Where possible the policy is 1 house, 1 tap. Households can then use this water for irrigating kitchen gardens and plant nurseries either direct from the tap or using waste (grey) water runoff from the tapstands. In this period HPC has provided drinking water to **7 villages** and **70 households** comprising **453 villagers** (196 female and 257 male).

These systems have also benefitted a total of **880 livestock** that have had easy access to drinking water in the village.

In an additional initiative HPC is providing domestic drinking water filters to all households in its Humla working areas (**274 households**) and **125** households of its Surkhet areas. Each household is providing NRs 500/- towards their filter.

3. EDUCATION PROGRAM

3.1 Practical Literacy Classes (PLC)

These literacy classes have been completed for this year with **59 women** and **9 men** achieving a basic level of literacy. HPC uses the Farmers' Handbook to guide participants through literacy learning, using relevant words such as nursery, smokeless stove, and grafting to learn first letters then words and going on to construct sentences based on the practical aspects of the handbook.

| | women | men | total |
|--------------|-----------|----------|--------------|
| Surkhet | 7 | 4 | 11 |
| Humla | 52 | 5 | 57 |
| Total | 59 | 9 | 68 |

3.2 Schools' Program

In Humla HPC has provided furniture for Sallagadhi Middle School of Barigaun, benefitting **32 students**. In Surkhet, 139 fruit and multi-purpose seedlings have been planted at Ganesh Primary school, Thulo Khaltakura (Ujwal Krishi Group), including mango, banana, plum, guava, lemon, jackfruit, mulberry, pear, peach, and sugar cane.

3.3 Education materials

In this period 100 more copies of the [Farmers' Handbook](#) have been distributed to groups in HPC working areas. In 2012 a second print of 1500 sets of the FHB was made; these have now nearly run out so a third printing has been done of **1500 sets**. This makes a total of 10,500 sets printed since the first edition was published in 2001.

4. LIVELIHOODS PROGRAM

Beekeeping

Beekeeping trainings have been on-going in Humla and Surkhet in construction of framed Newton hives and the popular "Jumla Top-Bar" hive which is the traditional hollowed-out log hive adapted to take frames. This is more favoured by farmers especially at high altitudes because they are thicker and thus warmer for the bees during the winter. Training has been provided to **43 farmers** (9 women and 4 men) in Surkhet. A total of **52 new hives** have been constructed in this period. Overall honey production has been assessed at **442.5kg** with a market value of **NRs 279,500/-** (about U.S.\$2,660).

Vegetable seed production

In Humla training in seed production has continued with **56 farmers** trained (24 women and 32 men). A total of **115.4kg** of vegetable seed has been produced from **10 varieties**, including coriander, broad leaf mustard, Swiss chard, radish, bean, spinach, aubergine, onion, lettuce and pumpkin. This has mainly been distributed amongst group members.

In Surkhet **364.8kg** of vegetable seed has been produced from **13 varieties**

Cotton Growing & Processing

Farmers in Surkhet are now in their second season of cotton production. The UK-based expert who visited 5 times in the past year to train and oversee 18 farmers the first season has again visited to review activities and achievements. Using seed saved from the first season farmers have again sown and raised cotton crops of Sea Island long staple variety and these are at present being harvested and/or are approaching maturity.

Mills

In Humla a water-powered oil press (mill) has been provided in Seri village benefitting all households of Seri, Lotpata, Bhadaura, Dalitbada, Satti and Dapka villages - approximately **200 households and 1233 people**. The mill presses local mustard and sesame seed. In addition, an old mill has been repaired for Seri village (on Chihi Khola), benefitting **51 villagers from 6 households**.

In Surkhet 1 multi-purpose hydro-powered mill has been built in Salghadi village (Pragatshil Krishak group) that hulls rice and grinds flour of corn and wheat. The mill has a recorded production of 90kg/hour for rice hulling; 20 kg/ hour for flour milling, and 5 kg/ hour of oil pressing. Apart from the 13 households (117 people) of Salghadi, about 35-40 other households from surrounding villages also use the mill.

At Pakhapani mill – built last year – the thatch roof has been replaced with a tin roof because of fire risk. HPC has provided the tin with group members contributing portage. This mill serves **175 households** (about 1200 villagers).

Herbs development

In Humla, **1957 medicinal herbs** with market demand have been planted over the past 6 months and in Surkhet **232 plants** have been established.

In May, 2 women from HPC groups attended a 45-day training with the district office of the Cottage Industry Department in Surkhet. After returning to their home villages HPC assigned them to train group representatives. They led a 3-day training for 19 group members (13 men and 6 women) in the cultivation and uses of a range of herbs, many locally available. These included Aloe vera, “dhubo”, tulasi (wild basil), hemp, “bhojo” (sweet flag iris), neem, *Terminalia*, turmeric, garlic, mint, *Berberis*, Bakaino (Indian bean tree), castor, amala and wild asparagus.

HPC is still negotiating with the department for provision of a distillation machine to produce essential oils such as lemon grass, meanwhile villagers have already started construction of a facility to hold the unit. HPC is further researching methods to power the unit, which is envisaged to be part of a “cottage industrial area” that could host a number of enterprises based on processing of local herbs and other resources, including soap making, weaving (in addition to the initiative already started in Salgadhi village, see below), drying etc. A micro-hydro scheme is being costed and solar and biogas energy sources are also being investigated.

Cardamom training has again been provided to farmers in Surkhet where a huge number of plants have been established over the past 2 years – including over 8000 this year (see above 1.2). A yield of over **620kg** of cardamom has been documented this year, worth **NRs 620,900/-** (nearly **US\$6000**).

Likewise, in Surkhet **Asian Pepper** (*Zanthozylum amatum*, “Timur”) continues to give farmers good economic yields, with **4240kg** harvested, worth **NRs 1,081,250/- (US\$ 10,300)**. **Garlic** is another crop giving significant economic benefit; this year farmers have produced over 18.5 tonnes of garlic, making them **NRs 1,667,520/- (US\$15,880)**.

Weaving & Fibre Processing

Linked to the on-going production of organic cotton and nettle, this program aims to set up a spinning and weaving cottage industry in the Surkhet working area. To date villagers of Pragatshil Krishak group in Salgadhi village have built a facility to house weaving looms. The looms themselves are being built at present and will be complete in the next month. For now, cotton thread will be purchased and used to train a team of weavers, until cotton production from the area meets demand. Meanwhile, research is underway to acquire various types of spinning technology that can be hand operated or using electricity. HPC is researching the efficacy of using solar and/or hydro-power for this.

Cold Store

Cold stores have been constructed in Humla and Surkhet and are reported to be working well, used to store fruit and vegetables over the summer season.

Solar drier

In Humla household-scale solar driers have been trialled over the past 6 months with 5 households that were provided with silpaulin u/v resistant plastic and fine wire mesh. They used this with local timber to construct simple tower-driers. In these they have been trying various foodstuffs such as cucumber, mushrooms, aubergine and tomatoes with varying success. One type is an upright chamber with shelves and another is angled. There are more types available to purchase and this research into the best value and easiest to construct and maintain is still on-going. Feedback to date is varied: some households saying that some vegetables were dried well while others started to rot. The main reported value is that foodstuffs such as mushrooms that become available in the monsoon can be dried under shelter, and that dried foodstuffs can be kept free from dust and other air-borne pollutants.

In Surkhet a manufactured solar drier was acquired from Manikej, a business specialising in agricultural machinery development and distribution. It is being used to dry fruits, herbs and vegetables at Baragaun RC in Surkhet.

Apple drying Humla

Machines for cutting and drying apples have been acquired for apple processing but have not been shipped to Humla yet. This will happen in the next few weeks, though not in time for the apple season.

Juice/Jam making

This training started in Surkhet in the previous reporting period, now groups in Humla have also started to learn, and while 30 farmers have been trained, 22 households have been successful in making jam and juice, mainly from peach and plum.

Biogas

As described in the previous report, two domestic-scale flexi-biogas unit were installed at Baragaun and Sunrise Farm RCs in December 2016 and have been functioning well, producing enough gas to result in a 15% reduction in firewood use at Baragaun RC. One problem has been that biomass fed into the unit has been getting stuck in the intake pipe and needs regular clearing. A result is that the unit has been

fed mainly dung as this doesn't get stuck, though the RC, having no livestock (but lots of biomass) has no dung resource and relies on external inputs. HPC is now looking to test a similar system at high altitude in Humla, and a larger system for distillation in Surkhet.

Solar electric

All households targeted for the solar electric units have now been supplied. In the previous report 53 had been distributed and a further 63 in this period. Each household has contributed 1000/- plus the labour in transporting the units from the road head to the village (which take 3-4 days round trip) and have been provided a set comprising panel, battery and 3 LED bulbs. The local government municipality is also contributing **NRs 116,000/-** to this fund.

5. CAPACITY BUILDING PROGRAM

Permaculture Design Course (PDC)

The first week of this course was held at Baragaun RC in May and the second week in November. The first part focussed on introducing the concept of permaculture, looking at definitions, ethics, principles and design building blocks such as soil, climate/microclimate, water, livestock, trees and agroforestry, kitchen gardens, pest management, composting, etc. The second week focussed on the design process, with participants forming groups to practice design on selected areas of farmland.

PDC Follow-up

In this activity, participants of the PDCs provided by HPC over the past 4 years meet to review design skills and outputs post-course. As the number of graduates increases there is a need to provide consistent follow up support as they develop and apply their design skills both from tutors and peer-to-peer exchange. HPC staff are now designing a follow-up program that will entail groups of PDC graduates meeting on a 2 or 3-monthly basis to exchange design experience and share skills developed.

Organisational development training

There has been no formal capacity building training in this period but HPC staff have developed a new training, linked to the livelihoods part of the program, called "Opportunity Analysis" training. In this 3-day training, given to 19 active farmers leaders (19 men and 2 women, most of whom are BCs) at Baragaun RC, participants explored the opportunities for livelihoods development as well as increasing resilience in their own communities. They also examined the limiting factors to such activities, whether from environmental, social or economic sources. A whole range of enterprises were analysed, including seed production, agricultural machinery distribution, oil pressing, greenhouses, livestock production, weaving and fabrics production, herbs processing, tourism, food processing, mushroom farming, shoe making, biogas, beekeeping, orchard management, teaching, etc.

Farmers Field trips

In September 8 SRI farmers from Surkhet made a field trip with 2 HPC staff to Humla to view and share experience with SRI farmers there. At the same time, other activities were viewed including fruit nurseries, kitchen gardens and herbs farming.

Farmer-Farmer extension

Gatherings have continued to happen between groups in Humla and Surkhet where members share experiences and resources and discuss programs and activities planned for the near future.

This also included the annual review and evaluation meeting between groups and HPC staff and board committee.

Barefoot Consultants' Workshop

Review and evaluation workshops have been held in Surkhet and Humla where BCs share their experiences and discuss what improvements can be made to their work. This is now a focus area for HPC as BC's work is a prime way of spreading its techniques and approaches without significantly increasing the administration and management of the organisation. There are currently **14 BCs** active in HPC working areas and **4** seconded to other organisations and districts. In total, **25 BCs** have been produced over the past 3 years.

Festival

HPC's Humla Farmers' Exhibition festival was held over 3 days in August. Exhibitions were grouped under headings of crops (root crops, grains, oil seed crops, vegetables and medicinal herbs) and handicrafts – a total of **153 exhibits from 105 farmers** were registered and prizes awarded in each category and sub-category. There were games for men and women such as volleyball, shot put and tug-of-war, and competitions between HPC groups in local dance and song, and a women's grafting competition. Around 700 people attended the festival.

The traditional August **Teej women's festival** initiated by HPC in Humla in 2014 is now self-running, with women gathering to dance and sing all over Nepal. It had not traditionally been held in Humla until HPC made it part of their program, empowering women there to enjoy the festivities along with other parts of the country.

Video film making

Further follow-up training has been provided to HPC staff and group members by Ms Renu Shakya and Mr Siddhi Bajracharya, focussing on production of 3 short videos to show at the 13th International Permaculture Conference and Convergence in Hyderabad, India in November. HPC representatives Bhuwan Khadka, Hommaya Gurung and Paumal Aidi will show videos on Introduction to HPC, Women's Health, and Barefoot Consultants respectively. These will also be made available to view on You-tube.

The previous report described an initiative by Peace Corps Nepal working with HPC to produce technical videos on various topics including Water Collection, Mulching, Leaf Pot Nursery, Leaf Compost and Double Digging are now available to view on You-tube at: <https://www.youtube.com/channel/UCJ7sajYGFJUQk79pzJI7mxQ/feed>

Videos produced by HPC are available to view at
<https://www.youtube.com/playlist?list=PLUtvIa4Yp5ymtgLYCxZnGISf6FCsKgmV>

To date the following videos have been produced:

- Smokeless stove (34min)
- Making videos (58 min)
- Agroforestry (19 min)
- Nutrition (14 min) – this video alone has been viewed over **1,32,000 times** on You-tube
- Local Seed: Our Future (seed production) (31m)
- Liquid manure (31 min)
- Making Compost (24min)

- Farmers' Festival (1hr 12 min)
- HPC Introduction (10 min)
- Women's Health Program Introduction (10 min)
- Barefoot Consultants Introduction (10 min)

Other videos currently under production include Green Manures, SRI and Livestock Management.

Community contributions

Community contributions to activities in Surkhet and Humla are detailed in **Annex B (worksheet 4)**. They show a total contribution of **858 person days** with a monetary value of **NRs 257,400/- (GB£1893)**. Activities include maintaining community infrastructure (paths, bridges, water courses, mills, schools and community learning centres), and direct contributions to HPC programs such as portage of equipment, and construction of PLC classrooms.

HPC Website

HPC's website, www.himalayanpermaculture.com was created February 2009. Up to the time of this report (Nov 2017), over **169,082** hits have been recorded.