Himalayan Permaculture Centre

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Building Livelihoods for Household and Community Resilience

6-month and end of Phase 3 Report

November 2018

In this report, details of activities and achievements over the current reporting period (May-Oct 2018) are detailed, and because this is the final report of the project cycle a summary of achievements over the past 3 years is also provided.

Working Areas

An updated summary of groups' names, locations and demographics is given below.

		Households	Women	Men	Total
Surkhet	2 municipalities, 10 villages	165	504	586	**1090**
Humla	2 municipalities, 11 villages	280	856	878	**1734**
Total	5 municipalities, 21 villages	**445**	**1360**	**1464**	**2824**

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 over the past 3 years. Details of activities in these new villages is included in the report below and in the attached annexes, but are kept separate where possible.

Details of the new villages are as follows:

		Households	Women	Men	Total
Surkhet	2 municipalities, 4 villages	94	277	281	**558**
Humla	1 municipality, 7 villages	336	1012	1037	**2049**
Total	3municipalities, 11 villages	**430**	**1289**	**1318**	**2607**

This gives a total of:

		Households	Women	Men	Total
Surkhet	2 municipalities, 14 villages	259	781	867	**1648**
Humla	2municipalities, 18 villages	616	1868	1915	**3783**
Total	4 municipalities, 32 villages	**875**	**2649**	**2782**	**54315431**

This is a jump from the previous report's total of 5053, mainly due to more households joining the groups, particularly in Humla's new areas where 30 households that previously weren't participating have joined activities.

Activities

1. FOOD SECURITY PROGRAM

1.1 Resource Centers

The Resource Centres (RCs) continue to be at the heart of HPC's program. They are designed as working demonstration farms with training facilities, able to host full residential courses as well as an office to support the project's administration, logistical and management functions. Both farms are equipped with solar power to aid these functions.

The RC in Humla is a rented office situated on farmland belonging to 8 different households, of which 7 households comprise a member that has completed a permaculture design course (PDC).

The Surkhet RC is HPC's headquarters and is purpose built, on land owned by the organisation.

Production of agricultural crops at the RCs, and resources such as seed and seedlings for distribution to village groups, are closely monitored to assess productivity as a result of climate change as well as interventions in management according to permaculture principles. On-going production is matched by development of the farms with continuous planting of new systems for increased productivity. At the same time one of the goals of HPC is that every farm becomes a resource centre, providing increased food security and improved livelihood opportunities with minimum input, whilst also providing demonstration and educational resources to those wishing to achieve similar aims.

At both RCs there has been an overall increase in productivity over the past 3 years, mainly through diversification of crops, with increased fodder and biomass-producing species supporting an improved fertility cycle. At the same time vegetable and fruit crops have increased and diversified, and extra resources of fruit and vegetable seedlings also become available for sale, exchange and distribution.

Each 6-month report has detailed crop production on the RCs. During this final 6-month reporting period the Humla RC has produced **993kg** of grains and vegetables from **23 crops**, plus over **1400kg** of fruit from **11** species including apple, pear, peach, plum, hazelnut, damson, mulberry, almond and walnut. It has distributed **104 fruit and vegetable seedlings** to the local community, and for its own development has planted a further **52 fruit and multi-purpose trees** and shrubs within the farm.

Similarly, at Surkhet RC maintenance of farm systems has continued along with new developments. Over the past 6 months it has produced **253.9 kg** of vegetables from **16 crops**, **362kg** of fodder grass and tree fodder, and **110 kg** of firewood. It has planted **119** multi-purpose trees and shrubs, **545 herbal plants**, distributed **67 plants** to local groups, and holds **41 grafted fruit** seedlings ready for distribution this winter.

In terms of the RC's 3-year target of providing demonstration and training facilities to **1000** farmers, this has been exceeded by a factor of 3. The RCs have hosted Permaculture Design Courses (PDCs), Training of Trainers courses (ToTs), residential Farmers' Trainings, Technical trainings, Women's Health trainings, capacity-building trainings, slide/film shows and various village group meetings. At Humla RC in Dapka village **1016 farmers (492 women and 524 men)** attended various trainings, while at Surkhet RC in Baragaun **1995** farmers **(855 women and 1140 men)** attended various trainings, meetings and workshops. Thus the total number of farmers/visitors benefitting from the demonstration and training facilities at the RCs totals **3011 (1347 women and 1664 men)**. These figures do not include casual visitors when farmers "drop in" to collect a resource, ask a question or view a demonstration, nor the HPC festival held at the Baragaun RC, where 350 to 700 villagers have gathered each year over the past 3 years.

Sunrise Farm

Sunrise Farm is situated on the western side of the capital Kathmandu, just outside of the ring road near Swoyambhunath temple. It has been a hub of permaculture activity in the capital since 1992 and remains the closest permaculture/organic farm to the city – in fact it has become surrounded by the city over the past decades of urban sprawl. Despite this, and the damage it incurred by the 2015 earthquakes, the farm has continued and flourished as a demonstration and training centre, and has been a partner to HPC since the NGO was formed in 2010. Sunrise Farm (SF) serves as a contact office for HPC; staff and aligned farmers stay there while on city business or in transit, and assists with storage, processing and marketing of products such as pulses, garlic and honey from the villages of Surkhet and Humla. SF was responsible for reprinting the Farmers' Handbook, and is its official distributor - copies are stored there for sale throughout Nepal. Farm staff were also instrumental in lobbying the government on HPC's behalf when the Social Welfare Council placed restrictions on

operating NGOs back in 2016. Over the past 3 years the farm has had **384 visitors** including overseas volunteers, trainees and Nepalese.

1.2 Farmers' demonstrations

HPC's strategies has followed those of its original entity, the Jajarkot Permaculture Program (1988-2001), namely: 1. To **demonstrate** regenerative and appropriate technologies and approaches; 2. To provide **training and education** in how the demonstrations are established and managed/maintained, and 3. To provide **resources** for trainees to take home to enact what they have seen and learned, such as seed, seedlings, books, videos and other education materials. To facilitate demonstrations in the villages, further resource materials such as seed, pipe, sprinklers, secateurs, grafting knives, pruning saws and seedlings have been provided to village groups.

Details are given below of the number of households implementing various techniques inside and around the farms. Many are tiny interventions or changes to traditional practice, such as keeping water pots and grinding stones covered when not in use, or keeping cooking and eating utensils and pots off the ground on a rack to dry after washing. Others are more production-orientated such as composting, kitchen gardening, agro-forestry and the System of Rice Intensification (SRI). These may be aimed at increasing productivity and/or reducing cost (including time/labour) through better resource management of existing local resources, as well as introducing new ones.

	May-October 2018		
Practical Activities	**Surkhet**	**Humla**	**Total**
No: households implementing	259	616	**875**
House hygiene	253	596	**849**
Stove	1	561	**562**
Toilet	4	584	**588**
Grinder	254	306	**560**
Water pot	256	406	**662**
Hay box	0	1	**1**
Sweepings	25	267	**292**
Waste water management	46	301	**347**
Plate/pot rack	25	223	**248**
Compost	108	46	**154**
Fodder trough	6	0	**6**
Salt lick	17	19	**36**
Kitchen garden/vegetables	244	429	**673**
Mulching	6	6	**12**
Liquid manure	17	30	**47**
hot bed	4	13	**17**
Leaf pots	0	39	**39**
Home nursery	36	395	**431**
Fruit nursery	19	0	**19**
Air nursery	3	1	**4**
Off season onions	1	85	**86**
Grafting	38	2	**40**
Budding	1	23	**24**
Top grafting	9	0	**9**
Air layering	55	12	**67**
Pot irrigation	1	40	**41**
Orchard	25	97	**122**
Agro-forestry	21	8	**29**
SRI	40	60	**100**

Green manures	1	83	**84**
No till	0	0	**0**
Bamboo cuttings	1	0	**1**
Improved plough	254	19	**273**
Fruit tree Pruning	89	0	**89**
Greenhouse	1	4	**5**
Biomas compost	38	18	**56**
Double digging	7	12	**19**
Urine collection & use	8	31	**39**
Seed production	18	50	**68**
Fruit tree planting	228	47	**275**
Filter Use	252	276	**528**
Juice/jam making	0	15	**15**

Most of these activities are illustrated in the Farmers' Handbook, a key training tool used by HPC.

Demonstration farmers

HPC aims to make its resources, be it demonstrations, training and/or other materials, available to everyone in its working area. To do this most effectively it works with farmers that are motivated to develop their own land and communities to establish their own demonstrations – indeed one of the aims of the Resource Centres (see above 1.1) is that every farm becomes a demonstration in some way. These farmers become the demonstration farmers and the aim over the past 3 years has been to cultivate at least 100 demonstration farms in its working villages. HPC has created 3 grades of demonstration farmers according to their achievements. Grade 1 demo-farmers have attained the following:

- Taken Farmers' Training
- Taken PDC
- Taken ToT (Trainers' Training)
- Competent at grafting and fruit nursery management
- Able to make smokeless stoves
- Have planted at least 15 fruit trees on their land, and be competent at pruning and companion planting
- Have planted at least 60 multi-purpose trees and shrubs of at least 10 different varieties in an agro-forestry design on their land
- Are using SRI in paddy areas (if they have paddy)
- Are growing vegetables and saving vegetable seeds
- Are able to manage greenhouse production
- Are using at least 25 other techniques from the Farmers' Handbook
- Can provide training in any of the above

The 2nd and 3rdgrades' criteria are similar but to a lesser degree.

	Category 1	Category 2	Category3	Total
Humla	11	14	34	**59**
Surkhet	21	40	58	**119**
Total	**32**	**54**	**92**	**178**

Barefoot consultants

HPC has worked successfully to create such demonstrations in its own working areas. In order to facilitate spreading the techniques and approaches beyond where it has the capacity to work they have created the "Barefoot Consultant" program approach. A barefoot consultant (BC) is automatically created from Category 1 of the demonstration farmer grade

once they have the required skills in doing and training others to do. Category 2 BCs are usually apprenticing with Category 1s for teaching purposes. To date there are 21 BCs in Surkhet (4 women, 17 men) and 23 BCs in Humla (5 women and 18 men) of which 12 are apprentice (Category 2) to the 11 Category 1 BCs.

Fruit and multi-purpose tree production

Propagation, planting and management of diverse fruit and multi-purpose trees, shrubs and herbs is a significant part of HPC's work in order to diversify farm productivity (and diet), and reduce cost of farming activities. Farmers become skilled in a range of cultivation techniques, from basic nursery skills to advanced propagation methods such as grafting and air layering. This enables them to be self-reliant on producing useful plants and further, provides an income source. Cultivated plants are planted by farmers themselves and excess are distributed, sold and exchanged.

Over the past 6 months farmers from HPC's areas have used summertime propagation techniques such as stem cuttings, air-layering and budding (as opposed to grafting and top-working that are used in the winter) to produce **28,671** plants ready for distribution over winter or next summer. Details are below.

Propagation method	Species include	Surkhet	Humla	Total
Cuttings (including stem & root cuttings and slips)	Mulberry, plum, napier grass, grape, sugar cane, comfrey, lemon grass	4,390	1,500	**5,890**
Air Layering	Citrus fruit (especially lemon), plum, pear, pomegranate, guava	559	7	**566**
Budding	Peach, plum, almond, apricot,	0	48	**48**
Grafting (done last year)	Apple, walnut, cherry, peach, plum, almond, apricot, pear	825	4,191	**5,016**
From seed	Coffee, cardamom, soapnut, citrus, cinnamon, Asian pepper, *Ficus* spp.	3,665	13,486	**17,151**
Total		**9,439**	**19,232**	**28,671**

The next stage is **planting**, and over the past 6 month farmers have further established **35 species** of nearly **33,000 fruit and multi-purpose trees, shrubs, herbs and grasses** on their own land: in and around fields, on boundaries and kitchen gardens, and on schools' and community land.

	Surkhet	Humla	Total
Fruit	15,252	319	**15,571**
Multi-purpose	12,969	2,361	**15,330**
Herbs	570	1,428	**1,998**
Total	**28,791**	**4,108**	**32,899**

These figures are combined with previous years' planting to give totals over 3 years of **46,000 fruit trees and shrubs** (of which **17,000 are grafted/budded**),**50,000 multi-purpose trees, shrubs and grasses**, and **14,700 herbs,** planted in **32 villages** in Surkhet and Humla.

After planting comes **management**, and this year **885 fruit trees** have been pruned by farmers. They are also trained to use **companion planting**, placing plants such as comfrey, lemon grass, mints and garlic under and around the trees to aid their development and produce additional yields.

Finally, **harvest** comes and it is literally time to gather the fruits of farmers' endeavours. Monitoring reports show that a massive **89,528 kg of fruit** has been produced from **30 species** over the past 6 months. The top 14 harvests are:

Plum: 20,130kg	Pear: 15,386kg	Banana: 11,350kg	Peach: 8,507kg	Guava: 7,117kg
Junard: 5,725kg	Amilo: 4,683kg	Orange: 3604kg	Lemon:	Mango: 2672

			2778kg	kg
Apple: 2,536kg	Mausam: 1369kg	Jackfruit: 700kg	Papaya: 560kg	

Other significant up-and-coming harvests include walnut (231kg), coffee (159kg) and almond (203kg). Also not included in the total is cardamom that has given a harvest of a further 1000kg

Staff and village groups have only recently been recording fruit harvests in detail, the total over the past 3 years stands at **102,811kg.** In addition, cardamom has produced **2,787kg** over 3 years.

In Humla the demand for fruit trees has been bolstered by collaboration with the local municipality office (local government) that purchased over **1000 fruit tree**s off local nurseries (owned/managed by HPC-trained farmers) for distribution in local municipalities. The District Agriculture office has also purchased **200 fruit trees** for establishment in a community orchard high on the ridge above HPC's area (near where the HPC festival is held, see below 5.8). Over **1000 mulberry cuttings and 80 mulberry seedlings** (rooted cuttings) were also sold to *Sahavagi* NGO for distribution to Dharma municipality in central-east Humla.

Other activities around farming and food sovereignty include kitchen gardening, where **673 households** (77% of working areas) have been active using techniques such as vegetable and herb poly-cultures, companion planting, integrated pest management, seed production, composting, mulching, liquid and green manures, and off-season cropping.

SRI Rice Farming

There are currently **100 farmers** practicing SRI (System of Rice Intensification) that produces higher yield and quality of rice using less water and seed. It has long been proven that SRI yields are higher than conventionally grown rice, and over the past 6 months, an initiative to measure scientifically the nutritional difference between conventionally/traditionally grown and SRI rice has been started, and 50 rice samples of comparative practices from 25 farmers' fields have been collected and sent to UK for testing at Coventry University's Centre for Agro-Ecology and Water Resilience (CAWR). The results will be shared hopefully in the next report due in May 2019.

Other farming activity

Productivity of communities overall has seen a trend of increasing diversification of crops and their productivity. Traditional cash crops of garlic and ginger have been improved with the agro-ecological approaches that HPC demonstrates and trains in, and further augmented by new crops such as cardamom and Asian Pepper *(Timur).* From beekeeping (see below 4.1), honey production has also increased along with numbers and design of hives, and of skills to keep them. Vegetable seed production (see 4.2) has also increased and provides an income. The principle that increases resilience of communities is to gain food security, health and livelihood from multiple sources and not be reliant on 1 (or a few).

Smokeless Stoves

One of the most successful and productive techniques embedded in communities has been the smokeless stove, which has been constructed in **91% of homes**. The stove is made completely of local materials and with local skills, and has the dual benefit of removing harmless smoke from the kitchen and saving on firewood, which in turn reduces both time spent in collection and impact on the environment.

Community Funds

Over the past 3 years HPC has supported community groups to create and operate their own micro-finance systems from community funds set up for that purpose. These funds are collected usually on a monthly basis from each member, and used to provide loans for small business initiatives and in some cases emergency relief where needed. The current audit puts the total held in community funds at **NRs1,848,170/- (GB£ 12,500)** of which **NRs 1,585,133/- (GB£10,710)** has been provided in loans to **160 households**. Loans are taken for a variety of reasons including food security, school fees, buying livestock, starting small businesses and medical fees.

HPC provides training to all its groups in establishment and maintenance of village micro-credit funds. It also provides passbooks for group members to keep funds' records in. HPC also provides an auditing service.

This reporting period's audit is summarised below:

	Loans given	No: H'holds	Expenses	Cash	Total NRs	GB£
Humla	162,400	28	38,478	96,882	297,760	£2,012
Surkhet	1,422,733	132	105,656	22,021	1,550,410	£10,476
Total	**1,585,133**	**160**	**144,134**	**118,903**	**1,848,170**	**£12,488**

Over the past 3 years a total of **NRs6,912,290/- (GB£46,705)** has been provided in loans to **885 households** in micro-credit groups in Surkhet and Humla.

1.3 Farmers' Training

To back up the demonstrations, HPC offers training in a range of subjects, and in different formats according to topic, season and groups' needs. Residential farmers' integrated training at its resource centres (RCs), mobile 1-3-day trainings *in situ* in villages and short single-topic specialist training at both the RCs and in the villages.

A training summary for the past 6 months is below.

			Participants		
Surkhet	**No: Trainings**	**Days**	**Women**	**Men**	**Total**
Permaculture Design Course	1	13	6	14	20
Organisational Capacity training	2	8	7	25	32
Mobile Farmers' Training	3	11	13	27	40
Technical Trainings	22	10	61	86	147
Total Surkhet	**28**	**42**	**87**	**152**	**239**

Humla

Residential Farmers' Training	1	5	8	8	16
Mobile Farmers' Training	11	29	80	73	153
Technical Trainings	31	10	85	88	173
Total Humla	**43**	**44**	**173**	**169**	**342**
Total All Areas	**71**	**86**	**260**	**321**	**581**

Technical trainings during this period include mulching, pruning, beekeeping, tree planting, SRI, composting, cardamom harvesting, fruit nursery making, budding, off-season onion growing, and urine collection and use.

Over 3 years these various types of training have been provided to a total of **6282 farmers** comprising **2794 women and 3488 men.** This is well in excess of the initial target of **3840** farmers.

Slide and Film shows

Over the past 6 months, **28 video and slide shows** have been shown to **428 villagers** comprising **182 women and 246 men** in **7 locations** in Humla and Surkhet.
Increasingly HPC is using video and picture material it is creating itself following training in video production over the past 3 years (see below 5.10).

1.4 Livestock

HPC's Livestock program encompasses 3 main areas: farmers' training, stock treatment and provision of improved breeds. Training has been on-going as part of HPC's integrated farmers' training (5 days), as part of 3-day mobile training and as specialist 1 to 3 day courses. These courses are now largely taught by barefoot consultants that have been trained in livestock health. A summary of the past 6 months' treatment is given below.

Castration		**Worms**						**Total**
Ox	Billy	Cow	Sheep/goat	Buffalo	Dog	Chicken	Pig	
25	**46**	**189**	**2685**	**101**	**8**	**535**	**31**	**3620**

Over the past 3 years,**179 farmers (93 women and 86 men)** have been trained in livestock health in Surkhet and Humla, and **9,970 livestock** have been treated for a range of illnesses such as internal and external parasites, wounds and stomach problems at **73 livestock mobile health camps** (Surkhet 32, Humla 41).

Improved breeds of livestock

HPC also provides improved livestock breeds with an aim of increasing quality over quantity of livestock productivity. In this period 1 bull has been provided in Humla and 1 Billy goat in Surkhet. Over 3 years a total of **12** livestock have been provided in Humla and Surkhet comprising **2 buffalo bulls, 2 Ox, and 8 billy goats**. HPC's target was initially to distribute up to 21 improved breeding livestock, of which 10 were breeding chickens. At the request of village groups it cut the amount of chickens in favour of purchasing more veterinary medicines for use during the livestock health camps.

1.5 Irrigation

HPC is providing irrigation infrastructure to its villages in Surkhet. This involves a range of approaches including providing pipe, sprinklers, storage tanks and/or pond liner if villagers are digging their own tanks. At present 2 village systems in Baragaun and Salghari villages have been completed with 125 villagers benefitting (58 women and 67 men) and a further 4 systems are in process, due to be finished in the next month. These will benefit in total **65 households** comprising **200 women and 224 men** through irrigation of **774 ropani (8.7 Ha).**

Over the past 3 years **12 systems** have been completed or are in process, benefitting **124 households**(**366 women and 415 men**), and irrigating **62.35 Ha** of land.

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. In this period maize de-hullers have been acquired for the Autumn-harvested crops, after testing in villages last year showed benefits of time and energy saving. Likewise a foot-pedalled millet thresher has been acquired for Humla and tested in Surkhet, where farmers have given their approval of the technology, and another is being ordered. Also for Humla, hand-operated food processing equipment is in the process of being tested within the livelihoods program including vegetable cutting (for example used to thinly cut potatoes for crisp making), juice making (pulping) and apple slicing (see also solar dryers, apple drying and jam/juice making below, 4.9, 4.10, 4.11).

2. HEALTH PROGRAM

2.1 Women's Health Program (WHP)

Women's Health Training (WHT)

In May HPC's top women's health BC Hommaya Gurung collaborated with Health and Psychology expert Mrs Renu Shakya (who has also helped build HPC's capacity to produce

videos, see below 5.10) to lead the first Training of Trainers focussed on Women' Health. This aims to support the development of women "barefoot consultants" (BCs) who are able to go to villages within and beyond HPC's own working areas to promote women's health issues in particular. The WHToT was held at the Dapka RC, Tajakot 5 Humla (previously Madana-9) and was provided for **9 men and 9 women** from 8 villages representing the 18 villages in Humla. Topics included:

- Training resources
- Training cycle
- Training needs assessment
- Managing training
- Designing training
- Lesson plan design
- Feedback
- Follow-up design
- Presentation skills
- Practice teaching

Also in Humla, 5 mobile women's health trainings were provided for 3 days each in 4 villages to **86 women and 13 men** by BC/nurse Sukuma Karki.

Over the past 3 years the various womens' health trainings have been provided to **1243 people** comprising **1201women and 42 men**. Interestingly, there is a growing trend for men to request this training.

One of the most effective and far-reaching trainings has been the **menstrual pad-making training** provided in Surkhet last March, when **171 women** were taught how to sew pads. The follow-up for this has continued and participants are able to make their own pads for their own use. Meanwhile an initiative to provide a community enterprise is in the planning stages.

The Resilience Through Recovery (RTR) is a program developed to work in 2 villages in central Nepal affected by the 2015 earthquakes. In a symmetry of cyclic learning, skills taught in the RTR program, managed by HPC-trained partners and BCs, women from Surkhet have learned basic Doll-making skills during an RTR training in Kathmandu. They have returned to Surkhet and started making and training others in the skills.

Women's Health Camp (WHC)

This period's Women's health camp was held in May in Humla at Madana Health Post. In total 208 villagers attended comprising 182 women and 26 men.

Diagnosis	No: patients	Diagnosis	No: patients
prolapse stage 1	**3**	pregnancy test	**4**
Haemorrhage	**25**	infertility	**0**
white discharge	**29**	diarrhoea	**11**
backache	**2**	weak limbs	**14**
vaginal itching	**1**	cold	**28**
urinary tract infection	**2**	no menstruation	**0**
eye ache	**11**	allergy	**2**
wound on uterus	**2**	asthma	**9**
gastric ulcer	**33**	wound on uterus	**1**
headache	**13**	skin disease	**2**
Worms	**12**	pregnancy test	**4**
irregular menstruation	**4**	infertility	**0**

Over the past 3 years a total of **1094 women** have been treated at 5 camps, with 1 remaining to be provided in Surkhet. In addition **294 men** have received medical support from the Baragaun Health post that is supported by HPC.

Women's Health Network (WHN)

WHN members have provided volunteers to the WHCs, WHTs, participated in plastic, glass and rubbish prevention workshops, rubbish collection and disposal events. A total of **132 women** are currently involved in WHN activities

WH Field trip

As a celebration of WH activities, in May a group of WHN representatives travelled on a field trip to visit different projects in Nepal. From Humla 4 women and 1 man and from Surkhet 14 women travelled to visit sights in Lumbini (Buddha's birthplace), Palpa, Pokhora (Permaculture activist Surya Adhikari), Kathmandu (Sunrise Farm, Nettle processing unit), Kavre (Hasera Organic Farm).

2.2 Drinking Water

HPC assists villagers to access safe drinking water by tapping local springs with a low-input system of natural materials and local skills used to make collection tanks and tap stands, vastly reducing the cost of building systems. Drinking water tap stands are further integrated with irrigation systems for local nurseries and kitchen gardens, supporting nutrition, agro-forestry and livelihood programs. In the past 6 months' reporting period 4 systems have been completed and a further 6 are in process. When complete they will have benefitted **65 households** in **8 villages**, and **2 schools**, comprising **241 females and 272 males**. In addition **590** livestock will benefit from drinking water troughs.

Over the past 3 years in total **15 drinking water systems** will have been implemented benefitting **374 female and 429 male** villagers of **155 households and 2 schools**, and **1205 livestock**.

Drinking water filter distribution, described in the previous report, has been completed to the remaining households (Humla 144, Surkhet 11). In total **420 water filters** have been distributed (**Humla 276, Surkhet 144**). In Humla the local Ward municipality provided a subsidy of **500/-** per filter.

3. EDUCATION PROGRAM

3.1 Practical Literacy Classes

This activity involves running practical literacy classes in Humla and Surkhet. The PLCs combine Freirian literacy principles with HPCs unique collection of practical activities based on the Farmers' Handbook (FHB), an easy-to-read compendium of over 40 farmer-friendly methods to increase domestic household and farm productivity. PLC participants learn letters and words, and later sentences, that form topics from the FHB such as stove, nursery, toilet, hygiene, diet, fruit tree grafting, etc. At the same time as developing their literacy skills, they also apply the methods in their own houses and fields.

In this period 2 classes have been completed in Surkhet and Humla for 45 participants (40 women and 5 men). Over the past 3 years the summary of participants achieving basic literacy is as follows:

	women	men	**total**
Surkhet	64	9	**73**
Humla	115	8	**123**
Total	**179**	**17**	**196**

3.2 Schools' Program

HPC is supporting 6 schools in Surkhet and 4 in Humla. It is helping to improve the learning environment firstly by upkeep and improvement of school grounds and infrastructure. Over the past 6 months the following has been done:

Village/School	Activity	Girls	boys	**total**

Baragaun, Sidheswori Primary School (PS)	stone partition in room to make extra classroom	30	32	**62**
Subbatol, Nera PS	painting of new building	44	47	**91**
Mavidara, LaliGurans PS	carpet in 1 room for warmth; cement for maintenance of water tank for drinking water	17	18	**35**
Sano Khaltakura, Nera PS	pipe & 500L tank for drinking water	12	19	**31**
Neta, Nera High School (HS)	Tin for damaged roof	94	53	**147**
Pakhapani, Gorkana HS	Drinking water	78	81	**159**
Total Surkhet		**275**	**250**	**525**
Humla				
Lotpata/Madanadev High School	Seedlings and fund for scholarships for hardship students; permaculture classes	146	166	**312**
Chihi/Janagriti PS	Whiteboard	43	53	**96**
Gallabadha/Suryaprakash HS	Seedlings	63	65	**128**
Satti/Kailashdev PS	Tin roof for toilet	24	36	**60**
Total Humla		**276**	**320**	**596**
Total All Areas		**551**	**570**	**1121**

Planting on school grounds has also been done: in Surkhet**139 fruit and mult-purpose trees, shrubs and grasse**s have been planted on school grounds, and **87 trees** in Humla.

HPC staff have also been providing vocational classes in nursery making, seedling planting, fruit tree care, kitchen gardening, composting and the like, including diet and hygiene.

3.3 Education materials

The past 3 years has seen the reprint of the Farmers' Handbook (FHB), a teaching tool and resource for farmers to improve domestic self-reliance through over 40 farmer-friendly techniques and approaches. The FHB is distributed to all village groups and also used as a main reference in the Practical literacy classes. It is also available for sale to other organisations and individuals, and proceeds of sales is kept towards reprinting in the future. In 2016, 1500 copies were printed; HPC has been distributing 100 sets per year in Humla and Surkhet.

In addition to the FHB, HPC has reprinted 1000 copies of the Herbs for Women's Health booklet, and numerous posters and illustrated hand-outs for permaculture teaching.

4. LIVELIHOODS PROGRAM

HPC's livelihoods program is based on the foundations built in its food security/sovereignty, health and education programs as described above. Only once these 3 crucial sectors are successful can the issue of livelihoods be addressed. After 4 years of building its own capacity and that of its working groups in Phases 1 and 2, HPC has focussed more on livelihoods in this, Phase 3.

4.1 Beekeeping

Bees are a crucial component of ecology, food production and farmers' livelihoods and HPC has always placed high priority on beekeeping development both in terms of increasing fodder for bees through planting and management of bee-friendly species – especially fruit (**46,000 fruit trees** and shrubs planted over 3 years – see above) and through training and

equipment for established and new beekeepers. Training has been in hive construction of Newton and Top-Bar hives, beekeeping and honey processing. In total over 3 years **207 farmers comprising 132 men and 75 women** have been trained. At the same time, beekeeping equipment including Honey extractors, veils, gloves, knives etc. have been distributed, with farmers responsible for constructing their own beehives after training. These activities have enabled **277 beehives** to be produced, and an output of **2,993kg of honey** has been achieved with a market value of **1,674,075/- (GB£11,311)**.

4.2 Vegetable seed production

Self-reliance in vegetable seed production is a crucial part of a community's food sovereignty and HPC promotes and trains farmers in methods of seed production. As well as enabling good food to be grown in kitchen gardens, seed production allows trade and exchange with other groups and individuals: it's a currency. Following the earthquakes in central Nepal in April 2015, HPC groups from Surkhet combined to send 30kg of vegetable seed to affected communities.

Over the past 6 months **211kg of seed** has been produced (see Annex H Worksheet 2) including radish, coriander, chilli, fava bean, carrot, lettuce, Swiss chard, aubergine, pumpkin and broad-leaf mustard. In total over 3 years, **221 farmers (110 women and 111 men)** have received training in seed production, and this has led to a massive **2,576kg of vegetable seed** being produced.

4.3 Cotton Growing & Processing

Training in producing organic cotton was started in 2016 and by the end of that year 18 farmers had produced a small crop that provided seed for growing on in 2017. That season's crop was expanded and seeds saved that are to be sown in 2018 with plans to increase area and number of farmers producing cotton. Meanwhile HPC has started its weaving and textile development activities (see below 4.7) that will eventually use the cotton produced locally.

This program has suffered most from delays in implementation, leading to fewer outputs according to the targets set at the start of the project. There are several reasons for this: SWC registration and political factors (elections, etc.) are external and not under the influence of HPC. But at the same time it is entirely new to be growing organic or any bush cotton in these areas and this has made progress slower that hoped. Because of lack of irrigation, planting of the cotton has to wait until the arrival of the monsoon which in some cases has made sowing too late for the cotton crop to mature before temperatures drop at the end of the year. For farmers with access to irrigation this has not been an issue.

It has also taken time to construct the infrastructure for the cotton processing – linked to the weaving program (see 4.7 below) and as a result that activity too has under-performed, and not met its targets. Finally the organic cotton expert from UK, who facilitated getting the first crop grown, was not able to visit in the final year due to personal problems and this lack of planned follow-up has also affected the output of cotton.

HPC is committed to developing the organic cotton project, and plans include growing the existing variety at lower altitudes, increasing irrigation capacity, and seeking varieties that will grow at higher (cooler) altitudes.

4.4 Mills

In this reporting period, repair to the mill in Salghadi village detailed in the previous report has been made after a landslide damaged the water source: a new source has been tapped and extra pipe used to make this.

Over the past 3 years, 3 multi-purpose mills have been built, 2 in Surkhet and 1 in Humla. A further improved mill (just grinding grains with an iron undershot water wheel) was installed in Humla. The original plan was for 9 mills but due to the higher cost of the multi-purpose mill only 3 have been installed, while the beneficiary total has increased due to the multi-purpose nature of the mills. In Humla**206 households** comprising **1284 villagers**(610 female, 674 male) have benefitted, while in Surkhet**228 households** comprising **1518 villagers**(725 female, 793 male) have benefitted, a total **of 434 households and 2802 villagers (1335 female, 1467 male)**. One mill is remaining to be constructed within the budget.

4.5 Oil Processing
Hand-operated oil expellars have been provided to groups in the first and second years.

4.6 Herbs development stage 2
Farmers have continued to plant herbs and this yearnearly **2,000 herbal plants** have been established. In Humla the focus has been on ***Aconitum Heterothyllum*** (local name *Attis*) which has a good market value. In the past 3 years over **8,300 herbal plants** have been established in both areas. Familiar plants include lemon grass, comfrey, mints, aloe vera, sweet flag, and wild asparagus. Others have local names but are commonly proposed used for medicinal purposes and have a market value. The next stage has been to establish processing facilities that dry, cut, grind and/or distil the herbs into products that can be stored and marketed. A processing centre has been established near GurungGaun (Janachetana group) in an area also close to PakhaPani, Chaurgaun and Mavidada villages. The equipment for the unit is being provided by the government Handicrafts department but has not yet been received due to delays on their side. He plan was to have had this completed and the unit in operation by the end of phase 3 but due to a variety of reasons including government delays it has over-run.

4.7 Weaving & Fibre Processing
Connected with the organic cotton program and nettle processing training of earlier years, this project aims to further the development of textile-related local resources management and processing into an economic platform. This will enable livelihoods to be created from use of locally grown nettle, hemp and cotton processed into thread, cloth and further processed products.

To date, 4 looms are in operation using thread purchased in Nepal for training purposes. Low-quality cloth is produced as trainees learn to weave, which can be sold as lining for other clothing, curtains, etc. As these skills are developed, spinning technologies will be added to process raw cotton, nettle and hemp.

The weaving centre has been established in a partnership between HPC and the local group (*Pragatshil Krishak* group of *Salghadi* village), who have contributed **208 person-days of labour contribution** (16 days by 13 members) worth **NRs 62,400/-**, **timber** worth **NRs 63,100/-** and **NRs 18,107/- cash** from their village fund to construct the weaving house, looms and related equipment. HPC has provided tin for the roof, skilled carpenter costs to fit the looms, costs for the weaving trainer and initial inputs of cotton thread.

In May, 5 farmers from HPC's areas in Surkhet went to visit a nettle processing enterprise in Kathmandu as part of the capacity building for nettle processing in Surkhet, where abundant wild nettle is found growing as a forest understorey in higher altitude forests. Thread produced from this area has been provided to the weaving centre for weaving into bolts of nettle cloth.

4.8 Cold Store
To date 2 cold stores have been made in Humla and Surkhet at their respective Resource Centres, as described in previous reports. The target was to make 4 cold stores 2 in each district but only 1 each has been possible due to time constraints.

4.9 Solar drier
HPC is pursuing various techniques for processing foods using appropriate technologies, of which solar drying is one. A range of solar drying techniques are being researched, each with different costs and measures of effectiveness. To date, manufactured solar driers have been tested in Surkhet and Humla and have been found to be effective, but are expensive and not appropriate for communities in low-income areas. For example the larger sized solar drier costs NRs38,000/- in the workshop (GB£257), and costs another NRs8,000/- to transport to Humla. Eight lower cost home-made versions have been built by a local carpenter master in Surket for the price of NRs128,000/- i.e. NRs16,000/- each. All of a sudden this is more affordable, and further is made more from local resources (timber) and skills. Staff from Humla have learned the methods and have purchased the raw materials needed to construct more driers in Humla.

The cheapest of all solar driers (other than open drying in the sun!) is a plastic-covered, bamboo-framed tower with wire mesh shelves that can be built for around 1500/- (£10) which is obviously even more affordable, but less effective at drying in terms of heat generated and moisture reduction over time. Considering all the criteria: cost, time spent, availability of resources, effectiveness, ease of use, etc., let alone the change in cultural behaviour to allow the habit of using the technology to flourish, all take time.

4.10 Apple drying Humla

Tools to peel and slice apples are now being used in Humla. Machines are kept at HPC and village groups borrow from there as needed. The Solar driers described above are then used to dry the processed apples. The cheapest version of the driers made of plastic over a bamboo/wooden frame are not suitable for drying apples/fruit as they do not reach high enough temperatures, and are only used for drying vegetables.

4.11 Juice/Jam making

Juice and jam making equipment is now being used in Humla and Surkhet to process in particular plums, which are the most produced (20,130kg over 3 years). Pears, peaches, apples, oranges, lemons and other citrus fruit have also been processed.

4.12 Biogas

Following installation of flexi-biogas units at Baragaun and Sunrise Farm RCs in 2016, groups in Surkhet requested that the conventional cement system be built with the budget remaining. The systems are being built with technical instruction from Manikej Energy Industries from Surkhet. In total 11 systems are being built with HPC providing NRs 10,000/- each in subsidy with householders and a government subsidy bearing the rest of the costs.

4.13 Solar electric

Over the past 2 years, **152 solar sets** for house lighting have been distributed for **7 villages** in Humla – each set comprising a solar panel, battery and 3 LED light bulbs with wiring. This has benefitted **470 females and 479 males**.

Other increasing sources of Livelihood

As well as the above programs, HPC's livelihoods program also encompasses other crops. Some are grown traditionally such as garlic, potatoes and ginger, and some introduced such as cardamom, Asian pepper, off-season onions, coriander and various fruit as well as fruit seedlings. **Annex H** details productivity of various crops. On-going monitoring has shown that from HPC villages the following production has been achieved:

Crop	Total Phase 3	
	Production kg	**Income NRs**
Honey	**2,933**	**1,674,075**
Cardamom	**2,787**	**3,211,900**
Ginger	**14,245**	**356,125**
Garlic	**59,569**	**4,450,950**
Asian pepper *(Timur)*	**20,488**	**6,359,310**
Tumeric	**5,314**	**299,250**
Onion	**351**	**17,525**
Potato	**2,428**	**84,980**
Chilli	**591**	**147,750**
Total	**108,114**	**16,454,115**
		GB£111,176

5. CAPACITY BUILDING PROGRAM

5.1 Permaculture Design Course (PDC)

The international-standard Permaculture Design course was taught in Baragaun in May. In total 20 group members from Surkhet (8 men and 5 women) and Humla (4 men and 1 woman) attended, and 2 male staff from Almost Heaven Farm in Ilam (Eastern Nepal) – total 6 women and 14 men. Over 3 years 3 PDCs have been provided for **56 farmers and staff** (12 women and 44 men)

5.1.1 PDC Follow-up

Follow-up to the PDC has been on-going and is linked to barefoot consultant (BC) capacity building as the PDC is a required qualification for a BC. In this period a 1-day PDC follow-up was held in Humla for 2 women and 19 men. Of the graduates 14 men and 2 women have also been or are being BCs for training work n Humla. The follow-up workshops comprise informal sharing of reflections on successes and challenges, and identification of further support/skills needed, and identifying opportunities for further development and application of the BC approach. Planning of future activities concludes the follow-up.

5.2 Trainers' Training

Integrated with all training programs, the Training of Trainers (ToT) is a crucial activity giving staff and BCs the tools to teach their practical skills in the working areas. Over 3 years, two ToTs have been run and 39 staff and BCs trained (13 women and 26 men), including a Women's Health ToT that was carried out in May under the Women's Health Program (see above 2.1) for 9 women and 9 men in Humla.

5.3 Organisational development

Specialist capacity-building training organisation "Sahakarmi Samaj" based in Khohalpur and Birendranagar have been providing institution-building trainings to HPC for several years and this has helped develop many areas of HPC's work including constitutional amendments, organisational structure, strategy development, decision making, monitoring and evaluation systems, financial monitoring, reporting, planning, farmers' group relations and conflict resolution.

This capacity building has also enabled HPC staff to develop and modify similar trainings for village group members, and in particular a Leadership Training and "Opportunity Analysis" training have been given by staff to village group representatives.

5.4 Farmers Field trips

HPC organises various field trips for farmers and staff to visit and experience successful projects in other parts of the country. In the last 6 months 5 members of HPC's board and 2 Surkhet-based staff made a trip to visit project villages in Humla, and even managed to reach HPC's most remote village of Majpur. As reported above (2.1) a Women's Health Field Trip was made to various areas of Nepal with 18 women. Over 3 years an annual field trip has been made for Humla group members and staff to visit HPC projects in Surkhet, and in 2017 SRI farmers from Surkhet visited SRI farmers in Humla, and farmers within each district regularly spend time visiting each other's SRI plots.

5.5 Farmer-Farmer extension

Meetings between representatives from farmers' groups, BCs and staff have been a regular occurrence over the past 3 years. Every 3-6 months a group will meet to discuss successes and challenges, and discuss plans for the future. These may involve planning for scheduled activities such as farmers' trainings, or result in requests to HPC for new interventions and activities.

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

5.6 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. Additional recommendations and support for their activities are made and overall capacity building is achieved. In august 2 workshops were held for BCs: the first a 3-day general sharing, review and evaluation workshop attended by 4 women and 11 male BCs. Topics included:

- Introductions and experience
- Success and challenges
- Qualities needed for BCs
- Organic vs: Regenerative approaches
- Categories of BC
- Report writing
- Livelihood opportunities
- Responsibilities, job descriptions
- BC contracts

In addition BCs and PDC graduates attended a 5- day PRA training held at the Baragaun RC in September: 3 women and 15 men attended.

HPC's strategy is to developand increase the BC approach. As described above there are currently **44 active BCs** – 9 women and 35 men - of which 32 are category 1 and 12 category 2 heading towards category 1. A priority is to create more women BCs especially with a focus on women's health. Currently 3 BCs are employed by other organisations on a full-time basis, and 2 are providing farmers' training for other projects. The remainder have been involved in training and follow-up programs within HPC's working area.

5.7 Rice Breeding training

This is an ambitious project to enable farmers to select and breed rice varieties for particular traits of productivity, taste, pest resistance, drought resilience, etc. according to local climatic and site characteristics. It takes several years to learn and successfully carry out breeding trials but the activity has not been able to be implemented as the main teacher, Surya Adhikari from Begnas near Pokhora has been unwell and not been able to travel to Surkhet to provide orientation nor host farmers from Surkhet at his home on a long-term basis in order to learn the techniques involved. As such, this activity has largely not been implemented. In May, 4 farmers from Surkhet managed to visit Mr Adhikari's farm and observe the process with a brief introduction.

HPC is still interested to develop this skill in its areas and is hoping to carry on during the next phase.

5.8 Festival

HPC organises Annual farmers' festivals in both districts. Both entail exhibitions of farmers produce including vegetables, fruit, seed and handicrafts. Traditional cultural dances as well as new topical songs and plays are performed. There are competitions of sport, dance The festivals are a celebration and a sharing of the work of HPC's farmers and groups with the wider community.

This reporting period has seen the Humla festival held in June on the high ridge (*lekh)* above the project area. The festival attracted around 900 villagers from up to a day's walk away.

5.9 Cultural Program

This activity aimed to develop theatre and dance routines to tour villages providing educational entertainment about issues related to the program – both problems and solutions. In 2016 the first play was produced and performed in Humla but since this, time constraints for the players and other external influences have restricted the development and implementation of this activity. In its place, HPC has supported groups in Humla to perform the traditional Teej Festival for women, previously not practiced there, but which has now become a regular occurrence since HPC's activities started.

5.10 Making Video films

HPC has been successful in learning to produce short educational videos, and is continuing to do so and to show these at its RCs and in the villages.

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)
- SurkhetFarmers' Festival 2017 (1hr 12 min)
- HPC Introduction (10 min)
- Women's Health Program Introduction (10 min)
- Barefoot Consultants Introduction (10 min)
- Women's Health: VAW, Herbs (15 min)
- Women's Health: White Discharge (17 min)
- HPC songs with video: Anna Bali (Humla); Swagat Git (Surkhet)
- SurkhetFarmers' Festival 2018

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

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

HPC also worked with Peace Corps Nepal 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

HPC is grateful to Marlene Bovenmars from InsightShare in UK for her expertise and further to RenuShakya and Siddhi Bajracharya for their follow-up technical support that built the capacity of HPC to implement the video training program.

CHALLENGES ON THE JOURNEY

Problems stemming from the Indian embargo and SWC registration described in the first year of this phase (October 2016) have had a knock-on effect to the end of the project. Each year delayed activities have been pushed back to subsequent periods. HPC staff and group members have tried hard to raise their capacity to implement the extra activities within the timeframes, and they have been largely successful in this. Sometimes farmers just run out of time: HPC's activities are planned to fit within the existing cultural farming practices, and there's only so much time farming families can give within their busy schedules.

Transition of government to a more regional, de-centralised structure while ideal in theory is hampered by lack of awareness, direction, experience and skill in effective governance. In turn, this has affected the program, with political distractions (a.k.a. elections, which lasted for 18 months!) over the past 3 years again taking time from the farmers' schedules as well as affecting the legal obligations HPC has as a registered organisation. HPC has managed to observe and interact with the new governance structure in other ways, however, for example in Humla by ensuring a market for farmers' grafted fruit seedlings, and in Surkhet by co-funding certain activities such as a school roof, and Baragaun Health post.

The programs that have least met their targets and expectations have been the Cotton growing/processing (4.3) Weaving and fibre Processing (4.7) and the Rice Breeding (5.7). The reasons for this are partially due to the problems described above – mainly political ones (elections and SWC restrictions) that have been largely beyond the influence of HPC, and personnel issues e.g. the cotton trainer not able to travel from UK and the rice trainer not able to travel from Pokhora. Acquiring the right hardware for purpose has been challenging and taken longer than expected.