Himalayan Permaculture Centre

www.himalayanpermaculture.com

Building Livelihoods for Household and Community Resilience

Phase 4, Final Report

Date of this report: December 2022

Introduction and background

This report comes at the end of Phase 4 of HPC's "Building Resilient Communities" program. Initially running for 3 years from December 2018 until November 2021, the Phase 4 program has been allowed a 12-month extension due to delays caused by Covid, and is now completing in November 2022.

Working Areas

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

		Households	Women	Men	Total
Surkhet	2 municipalities, 12 villages	213	580	647	1,227
Humla	2 municipalities, 19 villages	572	1726	1796	3,540
Total	4 municipalities, 31 villages	**785**	**2306**	**2443**	**4,767**

These figures represent the demographics of the villages that have been registered with HPC as participating villages.

Activities

1. FOOD SECURITY PROGRAM

1.1 Resource Centers

HPC's 2 Resource Centres (RCs) lie at the heart of its 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 Surkhet RC is HPC's headquarters and is purpose built, on 0.75 acres (0.3Ha) land owned by the organisation.
The RC in Humla is also a purpose-built building and training hall on land donated by the local community.

Production of agricultural crops at the RCs, and resources such as seed and seedlings for distribution to village groups, are monitored to assess productivity as a result of 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.

RC production – Surkhet & Humla

At the Tadikhet RC in Chyarkule, Chingar municipality, **734kg** of vegetables and grains have been produced over the past 6 months, including 250kg pumpkin, 200kg chayote and 150kg paddy (SRI) rice. In addition, 500kg of tree fodder, 50kg firewood and 250kg straw have been harvested. On the land, 42 fruit trees, 194 multi-purpose trees

and grasses and 28 medicinal herbs have been established including mulberry, bakaino, super napier grass, sugar cane, ground apple and lemon grass. In the farm's nurseries 160 seedlings have been distributed and 39 fruit trees grafted, joining the remaining stock of 479 trees ready for distribution next year.

At the Humla RC in Dapka village, Tanjakot municipality, **69kg of vegetables, 5.3kg of vegetable seed and 131kg of fruit** have been produced over the past 6 months; 54 seedlings and 108 vegetable seedlings have been distributed from the farm.

The RC's 3-year target of providing demonstration and training facilities to **1000** farmers has been exceeded by a factor of 2 (over 4 years), despite disruption from lockdowns. 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 **1,165 farmers (664 women and 501 men)** attended various trainings, while at Surkhet RC in Tadakhet, **1,007** farmers **(437 women and 570 men)** attended various trainings, meetings and workshops. Thus the total number of farmers/visitors benefitting from the demonstration and training facilities at the RCs throughout Phase 4 totals **2,172 (1,067 women and 1,066 men)**. These figures do not include casual visitors when farmers "drop in" to collect a resource, ask a question or view a demonstration.

No. Farmers using RCs			
	f	m	**total**
Surkhet	437	570	**1,007**
Humla	664	501	**1,165**
Total	**1,101**	**1,071**	**2,172**

1.2 Farmers' demonstrations

HPC's strategies have remained consistent with related permaculture projects since 1988, 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.

Farmers making integrated demonstrations as of November 2022

Practical Activities	**Surkhet**	**Humla**	**Total**
No: households implementing	213	572	**785**
House hygiene	210	566	**776**
Stove	101	568	**669**
Toilet	213	556	**776**
Grinder	210	562	**772**
Water pot	197	565	**762**

Hay box	0	1	**1**
Sweepings	160	559	**719**
Waste water management	160	564	**724**
Plate/pot rack	201	534	**735**
Compost	97	9	**106**
Fodder trough	29	8	**37**
Salt lick	32	40	**72**
Kitchen garden/vegetables	190	175	**365**
Mulching	26	1	**27**
Liquid manure	34	259	**293**
hot bed	7	0	**7**
Leaf pots	16	0	**16**
Home nursery	52	449	**501**
Fruit nursery	26	56	**82**
Air nursery	7	16	**23**
Off season onions	1	15	**16**
Grafting	11	0	**11**
Budding	3	39	**42**
Top grafting	1	0	**1**
Air layering	10	0	**10**
Pot irrigation	7	0	**7**
Orchard	138	91	**229**
Agro-forestry	90	25	**115**
SRI	19	24	**43**
Green manures	2	210	**212**
No till	1	0	**1**
Bamboo cuttings	0	224	**224**
Improved plough	211	152	**363**
Fruit tree Pruning	99	128	**227**
Greenhouse	4	0	**4**
Biomas compost	36	0	**36**
Double digging	7	0	**7**
Urine collection & use	7	107	**114**
Seed production	200	76	**276**
Fruit planting	144	119	**263**
Water Filter	183	256	**439**
Jam/juice making	6	47	**53**
Solar Drier	10	21	**31**
Stall improvement	51	7	**58**
Biogas	13	0	**13**
Chaff cutter	18	6	**24**

Most of these activities are illustrated in the Farmers' Handbook, a key training tool used by HPC. The solar drier, Livestock stall improvement, Biogas and chaff cutter have only been provided to a limited number of households as a demonstration.

Many of the techniques listed in the above table will have different values for different seasons, for example grafting is usually a winter time operation so values are lower now than for the previous 6-month report, which includes grafting time; SRI is a summer time activity with an Autumn harvest, so results are described here, rather than the previous report. Some techniques are listed as number of farmers applying for the first time, some are cumulative. A Similar table has been made based on all Phase 4 reports

that gives more of a summary of how many farmers are using different techniques without seasonal bias, and includes overall percentage of households applying the different techniques by district and overall. This is shown below:

	Surkhet	%	Humla	%	Total	%
Households	213		572		**785**	
House hygiene	210	99%	566	99%	**776**	99%
Stove	101	47%	568	99%	**669**	85%
Toilet	210	99%	556	97%	**766**	98%
Grinder	210	99%	562	98%	**772**	98%
Water pot	197	92%	565	99%	**762**	97%
Hay box	0	0%	1	0%	**1**	0%
Sweepings	160	75%	559	98%	**719**	92%
Waste water management	160	75%	564	99%	**724**	92%
Plate/pot rack	201	94%	534	93%	**735**	94%
Compost manure	97	46%	40	7%	**137**	17%
Fodder trough	61	29%	7	1%	**68**	9%
Salt lick	66	31%	40	7%	**106**	14%
Kitchen garden/vegetables	205	96%	556	97%	**761**	97%
Mulching	31	15%	1	0%	**32**	4%
Liquid manure	34	16%	259	45%	**293**	37%
Hot bed	15	7%	48	8%	**63**	8%
Leaf pots	54	25%	46	8%	**100**	13%
Home nursery	86	40%	510	89%	**596**	76%
Fruit nursery	58	27%	56	10%	**114**	15%
Air nursery	18	8%	16	3%	**34**	4%
Off season onions	1	0%	15	3%	**16**	2%
Grafting	15	7%	89	16%	**104**	13%
Budding	3	1%	39	7%	**42**	5%
Top grafting	5	2%	19	3%	**24**	3%
Air layering	10	5%	7	1%	**17**	2%
Pot irrigation	9	4%	49	9%	**58**	7%
Orchard	143	67%	95	17%	**238**	30%
Agro-forestry	90	42%	25	4%	**115**	15%
SRI	27	13%	74	13%	**101**	13%
Green manures	2	1%	210	37%	**212**	27%
No till	1	0%	0	0%	**1**	0%
Bamboo cutting	0	0%	224	39%	**224**	29%
Improved plough	213	100%	152	27%	**365**	46%
Pruning	99	46%	128	22%	**227**	29%
Green house	4	2%	32	6%	**36**	5%
Compost biomas	36	17%	10	2%	**46**	6%
Double digging	7	3%	11	2%	**18**	2%
Urine collection & use	7	3%	107	19%	**114**	15%
Seed production	200	94%	76	13%	**276**	35%
Fruit planting	144	68%	119	21%	**263**	34%
Filter Use	183	86%	256	45%	**439**	56%

Juice/jam making	35	16%	47	8%	**82**	10%
Solar Drier	10	5%	21	4%	**31**	4%
Stall improvement	51	24%	7	1%	**58**	7%
Biogas	13	6%	0	0%	**13**	2%
Chaff cutter	18	8%	6	1%	**24**	3%

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 4 years has been to cultivate a target of at least 150 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. In total there are **248 demonstration farmers** graded into the 3 categories, with 66 in Grade 1, 86 in grade 2 and 99 in grade 3. The table below summarises grading by district.

	Grade 1	Grade 2	Grade 3	**Total**
Surkhet	15	17	23	**55**
Humla	48	69	76	**193**
Total	**63**	**86**	**99**	**248**

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.

Increase and diversification of trees on farmers' land is an important part of resilience planning and general sustainability of farms. Trees provide multiple product benefits (fuel, food, timber, biomas, fodder etc.) as well as contribute significantly to soil and

water conservation and improvement. They also provide habitat and food for a multitude of insects, birds and other forms of biodiversity. As such HPC has always promoted planting trees and other perennials, focussing on farmers' private land. Fruit trees are always high on farmers' requests, and HPC has trained hundreds of farmers in propagation, planting and after care (pruning).

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 **over 50,000** 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	372	232	**604**
Air Layering	Citrus fruit (especially lemon), plum, pear, pomegranate, guava	43	49	**92**
Budding	Peach, plum, almond, apricot,	18	190	**208**
Grafting (successfully done last year)	Apple, walnut, cherry, peach, plum, almond, apricot, pear	175	41,049	**41,224**
From seed	Coffee, cardamom, soapnut, citrus, cinnamon, Asian pepper, *Ficus* spp.	6256	2105	**8361**
Total		**6864**	**43,625**	**50,489**

Fruit Tree Sales

Income from sale of fruit trees over the past 4 years of Phase 4 has been recorded at **NRs 1,929,230/- (£12,860)** of which 73% is from grafted apple saplings sold from nurseries in Humla. These fruit nurseries continue to put out large numbers of seedlings and villagers are able to sell them. Last year from a stock of over 20,000 seedlings, the Humla District Agriculture Office purchased 14,000 for its own distribution targets, while HPC then advertised on local FM radio, which helped to sell another 4,000 seedlings. The smallest seedlings were kept back for sale the following year (this coming winter).

Planting

After propagation of seedlings, the next stage is **planting**, and over the past 6 months, including the monsoon, farmers have further established **5,176 saplings** of **35 species** of **fruit, 15,166** of **30 species** of **multi-purpose trees, shrubs, and grasses,** and **786 of 13 species** of **medicinal herbs** on their own land, in and around fields, on boundaries and kitchen gardens, and on schools' and community land.

	Surkhet	Humla	**Total**
Fruit	4,924	252	**5,176**
Multi-purpose	14,314	719	**15,033**
Herbs	209	577	**786**
Total	**19,447**	**1548**	**20,995**

2019-22	**Total**

Fruit	**33,533**
Multi-purpose	**64,222**
Herbs	**9,318**
Total	**107,073**

These figures are combined with the previous 4 years' planting to give totals over Phase 4 of **33,533 fruit trees and shrubs**, **64,222 multi-purpose trees, shrubs and grasses**, and **9,318 herbs,** planted in **31 villages** in Surkhet and Humla. These combined are directly contributing to household income, nutrition and farm productivity (via biomass to the soil). They also help in reducing cost of gathering resources, as they are close by on farmers' land rather than in more distant forest areas. This in turn helps to conserve the forests through reduced exploitation which enables them to provide greater ecosystem services, regenerating soil, water and biodiversity.

Survival of planted seedlings is estimated at 60-75% and depends on several factors. In terms of species planted, oranges and mangoes are more sensitive and so may have a higher mortality rate than lemons, which are hardier; pomegranate are also very hardy. A drought during planting season may also adversely affect survival rates, so plants are usually heavily mulched to protect from this. Predation by pests and disease, including livestock, is the other main reason for mortality, so HPC espouses a range of pest management strategies: grow diversity, keep the soil rich (healthy soil = healthy plants), companion planting and use of biofertilizers for pest and disease control are examples.

Fruit Tree Pruning

After planting comes **management**, and this year **1,403 fruit trees** have been pruned by farmers. Pruning removes dead and diseased branches and allows space for light and air to reach the tree, aiding its health and productivity. Farmers 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. Over the 4 years of Phase 4 a total of **10,521 fruit trees** have been pruned by farmers in 31 villages.

Fruit Harvest

Finally, **harvest** comes and it is literally time to gather the fruits of farmers' endeavours. Monitoring reports show that a healthy **113,993 kg of fruit** has been produced from **32 species** over the past 6 months. The top 10 harvests have been:

Plum: 22,333kg	Banana: 17,800kg	Apple: 17,200 kg	Pear: 12,210 kg	Peach: 11,086kg
Guava: 7,946kg	Orange: 6,623kg	Junard: 4,186kg	Lemon: 3,959kg	Amilo: 3,798kg

Other significant up-and-coming harvests include almond (1,167kg), walnut (429kg), Kiwi (671kg) and apricot (450kg). Also not included in the total is cardamom that has given a harvest of a further **368kg**.

Throughout Phase 4, staff and village groups have been recording fruit harvests in detail, and the cumulative total over the past 4 years stands at almost **475,500kg.** In addition, over the same period cardamom has produced **2,250kg** with a value of **1,358,150/-**.

Economically, the apples are a significant – and increasing – source of income for households. This year in Humla, some NRs **67,500/-** was earned from selling apples, after eating, gifting, exchanging and processing. In total, NRs **92,000/-** of fruit was sold in the past 6 months, while income from sale of fruit over all 4 years of Phase 4 totals NRs **1,279,325/-** or **£8,254**.

In Humla the demand for fruit trees has been bolstered by collaboration with the local municipality office (local government). Meanwhile, in a partnership with KAAA

(Pokhora) over 3,600 fruit trees including apples, almonds, walnuts, pears, plums & peaches have been established in and around the villages of Linjho and Puru in a remote area of Dhading district, a post-earthquake response project started back in 2017. The orchards are tended with help from a long-term barefoot consultant from Bhadauda village in Humla, Mr Ange Aidi.

Other agroecological activities around farming and food sovereignty include kitchen gardening, where **761 households** (**97%** of households in HPC's 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

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, as a result of more efficient root utilisation of nutrients and water, and more space above and below ground for the plants to develop. The main challenge for farmers seems to be managing water resources firstly that there is enough water at planting stage and secondly that they can divert water away from the fields during growth stage so the plants don't remain submerged for too long. Alternate periods of dry and wet are needed, which is not always easy to manage.

There are currently 44 farmers practicing SRI, down from a maximum of 101 farmers 2 years ago. When surveying farmers they describe 2 reasons for this. Firstly SRI requires more weeding than traditional/conventional paddy farming, due to there not being water kept on the fields for long periods – a practice to keep weeds down. Although the activity of weeding proactively increases yield in SRI, meaning there is a return on the extra work of weeding, farmers are sometimes not recognising this as justification for the higher yield. Secondly, unseasonal weather due to climate change has also impacted productivity (though this affects all farming activities, not just SRI) and the past 2 years have seen unseasonal heavy rain at harvest time that has resulted in lodging of plants and soaking of grains as they lie in the fields when normally there would be sun for drying. This has meant that many farmers have returned to the traditional, "risk-free" way of paddy planting, whereas SRI can actually thicken and strengthen plant stems to resist lodging. What this shows is that some level of extension, training and demonstration are still required to fully embed this practice and allow it to spread from farmer-to-farmer.

Bio-fertilizers

Following a nationwide program of 3 bio-fertilizer trainings provided by expert Juanfran Lopez at the start of Phase 4 in March 2019, HPC is involved with the National bio-fertilizer network as part of the strategy to spread this relatively new but extremely important concept and set of techniques and approaches. HPC hosted one of the 3 trainings (the others being at Sunrise Farm in Kathmandu and Almost Heaven Farms in Ilam) and 1 of the trainees, BC Thaman Giri, then spent time in Ilam following up techniques that he has been teaching back in Surkhet over the past 31/2 years. In November he is due to go back to Ilam for a refresher training with AHF, where new innovations are being researched and added to the list of biofertilizer methods. In the meantime he has been active as a barefoot consultant (BC) along with other trainees, teaching about biofertilizers to farmers in HPC's working areas.

A Biofertilizer handbook has been produced in English based on Juanfran's experience in Nepal, India, Africa, Spain and UK, and has been translated and published in Nepali.

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, Livelihoods), honey production has also increased along with numbers and design of hives, and of skills to keep them. Vegetable seed production (see below, Livelihoods) 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).

Since permaculture came to Humla, 87 new species and varieties of plants have been introduced and farmed successfully, diversifying productivity and occupying empty niches of fruit, vegetable, fodder, timber, fuel and medicine, as well as supporting local biodiversity for pollinators. Fruit varieties account for 30 species, from tall apple and almond varieties to bush soft fruit currants and groundcover strawberries. Other examples are in the table below:

	Tall/tree	Medium/shrub	Short/ground cover
Fruit	passion fruit, kiwi (climbers), apple (multiple varieties), pear, peach, almond, hazel, walnut, chestnut, apricot, damson, plum (5 var.), persimon, avocado, cherry, pecan, Asian pepper, orange, lime, mausam, junard, pomelo	Blackcurrant, Redcurrant, Blackberry, Raspberry, Jostaberry, Japanese wineberry	Strawberry
Vegetable	Chayote (climber)	Perennial kale, tree kale, tree tomato, Ground apple	Parsley, perennial coriander, potato, Swiss chard, lettuce, beetroot, garlic
Fodder	Tagasaste (tree lucerne), Honey Locust, Bakaino, mulberry,	Napier grass	White clover, Phacelia, alfalfa
Grain		Quinoa	Black rice
Herb		Lemon grass	Comfrey, Vics mint, Bhuichampa, Wild Asparagus, Calendula

Smokeless Stoves
One of the most successful and productive techniques embedded in communities has been the home-built smokeless stove, which has been constructed in **99% of homes** in Humla and **46%** in Surkhet – a total of **669 homes**. The stove is made completely of local materials and with local skills, and has the dual benefit of removing harmful smoke from the kitchen, and saving on firewood, which in turn reduces both time spent in collection and impact on the environment.

A survey by villagers in Humla showed a saving of **2-4kg of firewood** for every meal cooked using the improved stove, that's a **1,460kg to 2,920kg** saved every year per household. In **669 homes,** that's a saving of **977 to 1,953 tonnes of firewood per year**. On top of this is time saved in collecting the firewood. If a load is average 40kg, then 977 tonnes will require **24,419 loads**. The average time per load is 2 hours – 1 hour to travel to and

1 Household: 1460-2920kg saved p.a.		
min		**max**
37	**loads saved**	**73**
73	**hours saved**	**146**

from the forest and 1 hour to cut and gather the load, this is a saving of **48,837 person-hours**, or double at the higher rate of saving.

Community Funds
Over the past 4 years HPC has continued to support 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 **NRs1,553,210/- (GB£ 10,400)** of which **NRs 1,229,692/- (GB£8,200)** has been provided in loans to 81 women and 79 men from **155 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	**# households**	**Expenses**	**Cash**	**Total NRs**	**GB£**
Humla	354,000	36	21,240	133,466	508,742	**£3,400**
Surkhet	875,692	119	155,952	12,860	1,044,504	**£7,000**
Total	**1,229,692**	**155**	**177,192**	**146,326**	**1,553,246**	**£10,400**

In total for Phase 4, **NRs 9,676,611/- (GB£65,000)** of loans have been provided for **1,333 households** (1,054 Surkhet and 279 Humla) over 4 years. To date, repayment of loans stands at **100%.**

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. There are 3 main formats: residential 5-day farmers training held at the Resource Centres (RCs); mobile 3-day trainings held in the villages, and short single-topic trainings of 30 minutes to a few hours, which may be held at the RC or in the villages. Topics are decided depending on season and stakeholder needs. Mobile trainings may be general or for specific topics such as livestock health (see below 1.4) or beehive construction. In this season technical trainings have included grafting, fruit tree planting, seed storage, compost making, salt lick, companion planting, budding, liquid manures, SRI, kitchen garden nursery and making local chicken feed.

Selection of participants for training is normally done by village groups themselves, or sometimes by invitation by HPC. While the culture is inherently patriarchal, HPC staff and BCs know that equality is important, and if village groups suggest mainly men for training, staff will make sure women are better represented

After trainings, farmers make an action plan. There is follow-up from staff, and because groups are under regular involvement with other related programs, farmers have continuous monitoring and support. Achievements are then monitored, such as seedlings planted, stoves made, kitchen gardens maintained, seed saved, etc.

A training summary over the past 6 months is below**.**

Surkhet	**No:**	**Days**	**Participants**

	Trainings		Women	Men	Total
Residential farmers' training	1	5	5	9	**14**
Technical Trainings	39	11	302	254	**556**
Proposal & Report writing training	1	5	2	18	**20**
Mobile Farmer Training	9	25	66	146	**212**
Trainers' Training (ToT) follow-up	1	1	3	5	**8**
Total	**51**	**47**	**378**	**432**	**810**

Humla	No: Trainings	Days	Participants		
			Women	Men	Total
Village design training	1	5	2	15	**17**
Furniture training	1	7	1	12	**13**
Livestock training Dapka	1	3	16	6	**22**
Farmer Mobile trainings	6	14	99	42	**141**
Tech trainings	34	17	64	70	**134**
Trainers' Training (ToT) follow-up	1	1	4	18	**22**
Total	**44**	**47**	**186**	**163**	**349**
Total all areas	**95**	**94**	**564**	**595**	**1159**

Over the entirety of Phase 4 there have been a total of **594 trainings** lasting **839 days**, including 12 residential farmers' trainings at the RCs, 73 mobile farmers' trainings in the villages, 465 short technical trainings, and Trainers' Training (ToT). Others have included livestock health trainings, blacksmiths', furniture, Jam-juice-making, biofertilizer and seed saving trainings. In total **6,009 farmers** have been trained, comprising **3,184 women** (60%) and **2,816 men**. They do not include Women's Health Trainings (see below 2.1). A summary is below:

Total	No: Trainings	Days	Participants		
			Women	Men	Total
	594	**839**	**3,184**	**2,816**	**6,009**
Total	**No: Trainings**	**Days**	**Participants**		
			Women	**Men**	**Total**
Residential farmers' training	12	60	112	119	**231**
Technical Trainings	465	229	2,031	1,763	**3,794**
Mobile Farmer Training	73	233	784	567	**1,360**
Permaculture Design Course PDC	2	25	8	19	**27**
Village Design Course VDC	2	10	11	30	**41**
Training of Trainers ToT	3	13	22	29	**51**
Organisational Development	4	13	19	49	**68**
Other	33	256	197	240	**437**
Total	**594**	**839**	**3,184**	**2,816**	**6,009**

Slide and Film shows

HPC staff and BCs regularly show slide shows and videos using pico-projectors at the RCs and in the villages. Showing films and slide shows is entertaining; shows are about global and local issues of food and farming, health, and development in general. They show best practice experience as well as dangers and challenges, for example of using poisons in farming. Specific technical topics are also shown such as agro-forestry, which back-up trainings given live and practically.

In this period **3 video and 4 slide shows** have been provided to **204** adults and children (97 female and 107 male) in a range of topics including making liquid manures, seed saving and the effects of pesticides on health. Many of the videos shown have been produced by HPC.

In total over 4 years of Phase 4, **89 slide and video shows** on various topics have been shown at resource centres and in the villages of Surkhet and Humla to **1,757 farmer adults and children** (810 female, 947 male).

The outputs of the training program are reflected in the practical work that households are enacting (see above): stoves, hygiene, kitchen gardens, composting etc. out to orchard management and agroforestry planting. Supporting these activities are health, education and livelihoods activities described below.

1.4 Livestock

Farmers in Nepal can spend up to 70% of their time and resources managing livestock, which play a crucial part in farm productivity directly through production of meat and dairy products, and also in terms of compost for maintaining soil fertility. Much time is used managing less productive animals, however, and diet and stall hygiene further reduces productivity so that despite the high inputs, animal productivity falls well below its potential.

HPC's focus is on basic veterinary care, breed improvement and stall management, including diet and hygiene. HPC has a cadre of farmers trained in basic diagnosis and treatment of livestock diseases, and provides medicines for mobile livestock health camps. These "barefoot vets" also provide basic training in stall management and preventative treatment. Increase in fodder resources are provided through agro-forestry and forest protection.

Livestock training

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. Topics in the training include:

Topic	Issues
Balanced diet	Grain, fodder (raised off the ground/fed in troughs, chopped), salt lick, mixing with grain husk (otherwise a waste resource)
Breed improvement	Selection of good livestock and introduction of improved varieties and maintaining genetic diversity
Shed Hygiene	Keeping shed clean; maintaining air flow (windows)
Treatment	Importance of timely diagnosis and treatment; use of local herbs; use of modern medicines.

Livestock health

Livestock health clinics have been usually held in each village every year, not including this extra year. Facilitated by barefoot consultant (BC) vets, over the first 3 years of Phase 4 there has been a total of 29 clinics in Surkhet. In the fourth year, distribution of medicines has been handed over to the Community agro-vet centre.

A summary of livestock treatment in the past 6 months is given below**.**

	Internal parasites				External parasites			Total
	Sheep/ goat	Cow/ Ox	Buffalo	Horse/ mule	Sheep/ goat	Cow/ Ox	Buffalo	
	215	8	3	1	50	0	0	**304**
	210	45	29	0	262	46	27	**817**
Total	**425**	**53**	**32**	**1**	**312**	**46**	**27**	**1121**

In total over Phase 4, **6,236 livestock** have been treated in **29** livestock health camps and *in situ* in villages. Since May 2021 distribution of medicine has been handed over to Cooperative Agro-vet centres in Surkhet and Humla that have provided treatment to an additional **8,218** livestock, giving a total of **14,454** animals treated over 4 years.

Improved breeds of livestock
HPC also provides improved livestock breeds with an aim of increasing quality over quantity of livestock productivity. During Phase 4 (December 2018 – November 2022) 8 improved breeds of livestock have been distributed: 5 goats, 2 buffalo and 1 Ox. In Surkhet, 1 buffalo bull has produced 21 offspring and 1 Goat has produced 19 offspring.

Livestock stall management
In this program support has been given to farmers to build improved stalls using cement to create mangers and hard floors for easier hygiene and collection of manure and urine. Other farmers have built the improved stalls themselves and received a NRs 7,000/- grant towards a chaff cutting machine. Cutting chaff and feeding in a manger uses less fodder to feed livestock, as it is easier to digest and also wastes less, keeping fodder cleaner as it's off the floor of the stall.

In this period 7 farmers have received small grants and made stalls, while 1 farmer has been provided 50% subsidy of a chaff cutter. In total, **58 households** have made improved stalls (51 in Surkhet, 7 in Humla), **19 large chaff-cutters** have been provided in Surkhet, and **6 small chaff cutters** made by local blacksmiths distributed in Humla. In Surkhet, a further **10 improved stalls** have been constructed by farmers in Surkhet with support from Chingard municipality, following HPC's example.

The importance of the livestock program - livestock treatment, breed improvement and stall management - is reflected in the income derived from livestock in a study of 55 demonstration farmers in Surkhet (see below in Livelihoods section). This showed that **36%** of their increased income due to training and support from HPC came from livestock and related products.

Irrigation
HPC provides support for small-scale irrigation systems that villagers build themselves. The systems usually involve building tanks lined with cement or heavy-duty plastic that are filled from local springs, and then piped to fields where sprinkler systems are often used. Some systems are also connected to drinking water systems and use excess and/or waste-water, usually for kitchen gardens and plant nurseries within the village.

In this reporting period no new irrigation systems have been built, but in Humla 19 coils of 30m garden pipe and 75 sprinklers have been distributed for irrigation purposes in kitchen gardens and fruit nurseries.

Over the past 4 years in total **19 irrigation systems** have been installed benefitting **222 households** and **1,163 people**, plus **61 coils** of 30m garden pipe and **353 sprinklers**. These have been used in many of the 761 kitchen gardens, fruit and vegetable nurseries and crop growing areas.

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.

Over the past 4 years a foot pedalled millet thresher, rice/wheat thresher, maize de-huller, wool spinners and chaff cutters have been acquired and tested in the field. Of these, both in Humla and Surkhet only the millet thresher was found to be inferior to the local method of threshing and de-hulling using the traditional gabri The foot-pedalled machine threshed 40kg in a day with 2 people whereas using the traditional wooden gabri, 2 people can thresh 100kg in a day.

In Surkhet, 19 large wheel-type chaff cutters have been distributed; in Humla 6 of the small sized chaff cutter, made by local blacksmiths, have been produced.

The larger size of maize de-huller was preferred to the smaller type – originally 90 of the smaller type were aimed for, while 23 of the large type were ultimately preferred and distributed (12 in Surkhet, 11 in Humla). These items are now sold from the agricultural tools centre.

One rice thresher has been acquired and is being used in Surkhet. A survey of this machine use by local farmers (including the RC's wheat crop) showed a **halving of time** taken to thresh wheat or rice. It was also noted that threshed grains fall closer to the thresher i.e. are less scattered and easier to collect than with the traditional method, where sheaves of grains are threshed onto a rock or a table by hand.

In Humla the advent of hydro- and solar electricity supply to Tanjakot municipality has meant that instead of the foot pedalled millet thresher, HPC has provided 2 electric mills in its place (provided under the Mills program, see below 4.4). This machine can process **600kg** of grain in a day, de-hulling and/or grinding. De-hulling can take a day to process 20kg of millet using the traditional "Okhal" – a wooden stake with an iron base - usually women and girls do this very hard work -whereas the electric mill can de-hull **400kg** in a day. A committee set up to manage the venture has been formed and rates for milling set, the fund for maintenance also set up, and the mill in Lotpata has been officially "opened". The 2nd machine has been installed in Chihi village.

The maize de-huller provides similar time-saving benefits. In 1 hour a person can de-husk 10kgs of corn cobs by hand; in the same time 1 person using the de-hulling machine can process 100kg.

Humla Story:
Before HPC came, we cut the ploughshare for the plough from oak trees we felled – it would cost 50 trees a year [amongst 10 villages]. *Now we use iron forged by our own blacksmiths, who were also taught by HPC. So for the past 4 years we've saved around 200 trees, which is good for the forest. With the trees saved from this and from the stoves we must have saved a few thousand trees by now.*

2. HEALTH PROGRAM

2.1 Women's Health Program (WHP)

Women do a disproportionate amount of domestic work in the house and fields, including carrying heavy loads long distances and strenuous field work. Because of child bearing these heavy duties carry far higher health risks than for men, and numerous problems persist for mothers and children. HPC's aim is to reduce women's workload through agroecology and appropriate technology design, promoting preventative approaches such as nutrition, hygiene and smokeless stoves, that are in turn linked with kitchen gardening and orchards. Parallel to this is the need to raise women's awareness of physiological issues such as menstruation and their ability to proactively address the problems using a variety of approaches, such as using herbs, yoga, food fermentation, and making washable, re-usable menstrual pads.

HPC's Women's Health Program (WHP) 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, plan and support the implementation of events including the WH Trainings and WH Camps.

Women's Health Training (WHT)

In this period a WHN training and a series of mobile WHTs have been held in Humla for 21 and 131 women respectively, as well as a gender training for 13 women and 5 men. In Surkhet, 1 training for Surkhet WH Network members has been held for 18 women participants and at Pakhapani school a 3-day training for adolescent health was provided to 13 girls and 2 teachers, including training in and distribution of **65 washable/re-usable menstrual pads (13 sets)** made locally.

A summary of all Women's Health Trainings provided over the past 4 years of Phase 4 is as follows:

Summary Phase 4	No. Trainings	Days	f	m	Total
WHT	7	35	150	0	**150**
MWHT	23	64	410	7	**417**
Gender	6	30	81	48	**129**
WHNT	6	17	122	0	**122**
Pad-making	12	34	280	0	**280**
Adolescent Health	3	8	54	0	**54**
Golden 1000 days	1	3	12	11	**23**
Total	**58**	**191**	**1109**	**66**	**1175**

The generic 5-day WHT has the following content:

Topic	Issues
Gender	Effects of cultural practice and effects on health e.g. education, taboos
Physiology	Differences between external and internal female and male reproductive organs
Adolescence and puberty	Physical and psychological changes in girls, and

	importance of health issues at this time
Menstrual cycle	Health, hygiene, workloads and cultural issues (taboos, discrimination, etc.)
Common reproductive system-related ailments	Symptoms, importance of health, hygiene, diet as preventative and curative measures; treatment using simple techniques and local herbs
Family planning	Temporary family planning methods used by men and women; effectiveness; side-effects on women; need for gender-participation
Pregnancy and childbirth	Growth stages/process and the importance of health, diet; dangers
Women in the economy	Role of women; access and control of finance; means of production
Herbs for women's health	Reliance on allopathic drugs, their side-effects and correct use; examples of local herbs and their use; empowerment through use of local resources

Specialist courses have also been provided:
Gender Training - Topics include:

- Gender differences between male and female – physical and habitual
- Gender-related violence & its effects on family, community & development
- History of development: roots of gender & caste discrimination and violence against women (VAW)
- Child marriage, caste influences,
- Discrimination against menstruating women & girls and pre-& post-natal women
- Conflict resolution in communities – routes of action at village/VDC level
- Laws and rights around gender discrimination and VAW
- Government strategies & programs to promote women's rights and prevent gender discrimination and VAW at national, district & VDC level
- Roles of community in advocacy
- Making a Work-plan for action by the group to hold further discussion and develop programs to make the work effective

Training for Adolescents: 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

Nutrition Training: Topics included

- Reasons for disease
- People's nutritional needs
- Benefits of Organic food
- Components of a balanced diet
- Hygiene

Women's Health Camp (WHC)
In this period a WHC has been held in Humla at the Madana Health Post in Tanjakot municipality. HPC was fortunate to find Dr Khima Neupani from Surkhet Central Hospital able to lead the camp, supported by BC Hommaya Gurung and Health expert

Ms Januka Bhattarai and a host of volunteers comprising WHN members and staff of the Madana Health Post.

The health camps comprise different components. After triage attendees will see the doctor for examination. As there is a queue, groups of attendees are given a tour of educational posters displaying topics such as problem-solving trees of gynaecological issues, legal address of domestic violence, nutritional sources for a balanced diet, herbs for women's health, etc. Following seeing the doctor they record their significant life history (narrated and written by volunteers), and then go for counselling, including recommendations of herbal/non-allopathic/preventative treatments for their ailment. Finally they go to the pharmacy to receive whatever medicines they have been prescribed.

The camp is not just about diagnosis and treatment of women's health issues but also focuses on wider education around women's health. Aims of the education at the camp were:

- To provide information and awareness about gender discrimination, domestic violence, women's rights and legal access
- To increase awareness of women's health issues such as prolapse, menstrual problems and feminine hygiene
- To provide knowledge of women's reproductive health physiology and biology
- To provide education about the use of herbs for preventative care and treating common women's reproductive ailments
- To promote the principle of self-help through self-analysis, self-diagnosis and self-treatment of women's health problems
- To help facilitate and mobilise local government and civil organisations and individuals to be proactive in combating gender discrimination and supporting women's health issues

Women attending the camp, hailing from Tanjakot and Adhanchuli local Municipalities in southern Humla, went through an education program comprising:

- A display of herbs with information on their processing and use
- Poster displays of human physiology, centres of disease, causes of disease, ways of diagnosis; family planning methods
- Discussion on the value of cooperation and prevention of domestic violence and the importance of gender harmony

The following table describes the ailments that were treated at the camp:

Diagnosis	No. Patients
Prolapse	**5**
Uterine haemorrhage	**3**
white discharge	**19**
backache	**5**
vaginal itching	**4**
urinary tract infection	**4**
wound on uterus	**1**
gastric ulcer	**8**
headache	**6**
Worms	**5**
diarroeah	**3**

weak limbs	**9**
cold	**10**
irregular menstruation	**5**
skin disease	**1**
sore throat	**2**
broken bones	**1**
pregnancy test	**4**
no menstruation	**2**
Allergy	**1**
Total	**98**

Examples of treatment for different ailments diagnosed at the camp are as follows:

Diagnosis	**Treatment**
Prolapse uterus	Ring fitted, counselling
Menstrual difficulties	Counselling, neem oil
Painful uterus	Rest, posture, counselling
White discharge	Neem oil, counselling
Worms	Herbal medicine (neem, bark of *Myrica esculenta*, bark of mulberry tree)
Headache	Re-hydration, willow bark
Ulcer	Herbs (dhubo, *Cynodon dactylon*), milk

Women's Health Network (WHN)
The WHN exists to support activities in the overall WHP and to carry awareness raised into the groups of any issues that affect women in the locality including domestic violence, preventative health, diagnosis and pre- and post-natal support. They also help in planning and implementation of the health camps and trainings carried out under the WHP, and help with participation in HPC programs overall. In particular, they support HPC's education around stoves, food processing, diet, nutrition, hygiene and toilets, as well as integrating with kitchen gardening, agro-forestry, fruit growing, drinking water and other community enterprises. As such women's health is integrated into all sectors of village regeneration. Out of 160 members of the WHN, there are currently 74 (51 in Surkhet and 23 Humla) women active in the WHN doing various jobs such as training support and networking.

WH Field trip
In 2019, 18 women (+ 3 men) went on a 7-day field trip to areas in Nepal with active women's health and advocacy programs.

Menstrual pad training and making
Prior to this reporting period women's groups in villages in Surkhet were provided with training in making home-made washable, re-usable menstrual pads while in this period 12 further trainings were provided for Humla village women's groups. These are an alternative to the commercially available single-use pads made with non-biodegradable, non-washable materials. Pads are sold in sets of 5 in a cotton bag, so with washing there are enough to cover a menstrual period. Used in this way a set can last at least 1 year, if not longer. In remote areas like Humla even the commercial types are not available and women traditionally use old rags during menstruation. As a follow-up to the initial training, an advanced training was provided to 4 women (3 in Surkhet and 1 in Humla) along with staff to make the pads on a commercial basis, with plastic poppers and popper-fitting machine also provided, along with a NRs 5,000/- start-up grant. In

Surkhet **147 pads** have been produced in the past 6 months, selling at an initial cheap price of 100/-. In addition, **65 free pads** (13 sets) have been provided to 13 girl pupils at Gorkana Secondary school in Pakhapani village. In Humla, Ms Jankala Rokaya was selected and has made and sold **45** pads to date, sold at 120/-. Income from a total of **192 pads** made has been **20,100/-** in the past 6 months.

The Women's Health Network is increasing awareness about the pads and where they can be acquired and producing a video for advertising on social media.

A 1-minute video is currently under production to help advertise the pads: why use them and where they are available from.

Stretchers
The health program has also distributed **10 stretchers** (4 in Surkhet, 6 in Humla) that have been used to carry patients from the villages to the health posts in Gagane of Chingar and Madana and Maila of Tanjakot.

Stories from the WHN
HPC staff and group members have been compiling stories from women that have been involved in the WHP – as trainees, patients in the WHCs, or through activities in other programs such as kitchen gardening, fruit nursery operation.

Nirumaya [name changed for privacy] is 20 years old and had irregular menstruation and white discharge, being unable to conceive. In 2021 she attended the health camp in and received counselling and herbal treatment involving herbal-infused warm water for cleaning, and prescribed taking aloevera of 3 months, after which her periods regularised, and she was able to conceive, delivering a healthy baby in 2022.

Sita had 3rd degree prolapse and came to the health camp 3 years ago, had a ring fitted and provided counselling for exercise and reducing heavy load carrying. She came for a review at this year's camp and now does not need a ring fitted.

"We didn't know anything about our health or healthy eating or how to grow vegetables and fruit before HPC came. Now we know how to grow vegetables, everyone has a kitchen garden. Now we know how to grow fruit trees in nurseries, we can eat green leaves all year round, and fruit all summer. Now we understand more about our bodies and how to stay healthy."

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 this reporting period **10 systems** have been completed in **8 villages** and **2 schools**, including 3 new systems and 7 repair/maintenance of existing systems. A total of **561 villagers** (266 female and 295 male) comprising **70 households** and **2 schools** (142 students) have benefitted from the schemes with access to 24-hour drinking water plus added benefits of irrigation from waste water. In addition 730 livestock have also benefitted from the drinking water source.

In total in Phase 4, **37 drinking water systems** have been installed and/or maintained, benefitting **273 households (1,925 people).** In addition nearly **2500 livestock** have also benefitted from having local drinking water.

3. EDUCATION PROGRAM

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 PLC classes in Okhadi and Gotipata villages of Humla have been completed and resulted in **38 women** reaching a basic stage of literacy.

In Phase 4, with a target of 150 adults, overall **193 adults** comprising **173 women** and **20 men** have been through the PLC and achieved a basic level of literacy skills.

	women	men	**total**
Surkhet	6	8	**14**
Humla	167	12	**179**
Total	**173**	**20**	**193**

Schools' Program
HPC also works directly with 12 schools in its working areas, through co-design and development of bare land with planting trees and gardens, which helps to provide pupils vocational training useful not only for school but that they can take home and apply there as well. It also supports schools with infrastructure such as for drinking water, furniture, roofing, painting etc. with an aim of creating a more comfortable learning environment.

In this period HPC has facilitated fruit and multi-purpose trees and shrubs' planting in 3 schools with local group members contributing labour, provided furniture in 5 schools, drinking water in 1 and painting of 1 school. Details are provided below.

Surkhet

School Name	Address	Activities	Students benefiting		
			F	M	Tot
Sagarmatha Pra.vi.	Chingard 1 Kalikhark	61 fruit trees, 10 multi-purpose trees planted; 12 women+22 men x 1 day contribution	9	9	18
Laligurash Pra.vi	Chingard 1 Mavidada	50 multi-purpose trees planted; 7 women+13 men x 1 day contribution	8	11	19
Gokarna Aa.vi	Chingard 1 Pakhapani	Drinking water pipe provided	52	62	114
Ganesh Pra.vi	Lekbesi -5 Thulokhaltakura	School building painting	18	23	41

Ne.ra Pra.vi	Lekbesi -5 Sano khaltakura	Furniture made (tables)	9	11	20
Total			96	116	212

Humla

Village	School	Activities	F	M	**Tota**
Satthi	Kailash pra.vi.	white board x 3	16	13	**29**
Barigaun	Supakhet pra.vi	Desk, bench x 10	35	38	**73**
High School	Madanadev ma.vi	Library rack 24 ft	75	77	**152**
Gallabada	Chandra prakash ma.vi.	Planting: 150 bakaino, 50 Pomegranate	92	94	**186**
Lamahi	Sarkidev Pra.vi.	carpet	56	61	**117**
Maspur	Banadev pra.vi.	Desk, bench x 8	12	15	**27**
Chihi	Janajagriti pra.vi.	carpet	24	26	**50**
			310	**324**	**634**

Over Phase 4, all 12 schools have received various support to improve their infrastructure and learning environment. In Surkhet, school permaculture classes started to be provided to integrate formal education with the practical aspects of agroecology and household resilience. Unfortunately the school classes were suspended early on when schools closed due to covid, but practical sessions were able to continue in a limited way, that resulted in tree planting, fruit tree propagation, vegetable growing. Trees, seedlings, compost etc. are provided by the village groups, HPC has ensured an improved water supply with drinking water and irrigation support.

In total in Phase 4, **36 school classes** lasting **60 hours** were provided to **515 pupils** (251 girls and 264 boys) at 5 schools in Surkhet. Classes were a mix of practical and theory, and included hygiene, grafting, fruit tree planting, pruning, Covid safety, composting, mulching, nutrition, menstruation and making plant cuttings. To support this time was also spent with school staff, the school committee and parents discussing and performing practical activities around planting, cleaning, painting and computer use.

In addition to its work with schools in its working areas, barefoot consultant (BC) Durga Rokaya is trained by HPC and has been seconded to work at Kopila Valley School in Surkhet district's capital Birendranagar, to help establish and run their school gardens and micro-farm. He also teaches 1 class per week (each lasting 45-60 mins) for 8 classes in vocational skills such as nursery establishment and operation, kitchen gardening, Integrated Pest Management, mixed vegetables and composting. As part of the classes that Durga is providing at Kopila Valley, HPC is starting to create curriculum documentation in Nepali that can be used in other schools and classes in its working area and beyond.

Education materials

During Phase 4, 300 sets of the Farmers' Handbook (FHB) have been distributed to groups and individuals in all villages in Humla and Surkhet. This is used in literacy and general agroecology training, and as a reference for technology development. Some copies are distributed as prizes for innovative farmers, and all BCs receive a copy. In addition to the FHB, 1000 copies of a handbook entitled "Herbs for Women's Health" has been re-printed and distributed to women's groups, and 500 copies of the Nepali Biofertilizer Manual has also been distributed to farmers' groups. Other miscellaneous teaching resources such as posters and brochures about agroecology, health and

permaculture have also been printed and used by staff and BCs for training purposes at the resource centres and in the villages.

4. LIVELIHOODS PROGRAM

HPC's livelihoods program is based on the foundations built in its food security, 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 Phases 3 and 4.

A survey of income for 41 demonstration households in Surkhet was started in June 2020 and now, after 4 reporting periods and having been increased to 55 demo households, the results have shown a combined increase in income of **NRs 4,067,682/-** (£27,118) for an average of nearly 74,000/- per household (£500) for the past 6 months, and overall for 24 months an increased income of **NRs15,212,722/-** (£101,418) is recorded. This is income that is a direct result of farmers' learning from demonstration, training and resources provided by HPC. Of this income, 36% is attributed to livestock production – sale of livestock and livestock products, while garlic accounts for 25% and being a barefoot consultant (farmer-trainer) accounts for an average of 7% of increased income. The extra income in each reporting period is summarised in the table below:

Reporting period	June-Nov'20	June-Nov'21	Dec21-May'22	June-Nov'22	Total
Extra income NRs	3,786,700	3,249,540	4,108,800	4,067,682	**15,212,722**
GB£	£25,245	£21,664	£27,392	£27,118	**£101,419.00**
Av. Per h'hold	**94,668**	**81,239**	**100,215**	**73,958**	

A separate record of income from specific training activities including mills, blacksmiths, tailors, chicken rearing, leatherworking, furniture making and menstrual pad making, again as a direct result of training and investment provided by HPC, shows a combined income detailed in the table below:

Activity	Income	No. trainees
Mills: earnings	**129,898**	**5**
Blacksmith: earnings	**1,380,465**	**12**
Sewing: earnings	**93,590**	**7**
Chicken: meat	**648,215**	**28**
Chicken: eggs	**42,590**	
Leatherwork	**6,800**	**5**
Furniture making	**1,056,000**	**14**
Menstrual pad making	**14,600**	**3**
total earnings	**3,372,158**	**74**
GB£	**£22,481**	

Finally, a record of other known sources of income occurring directly as a result of HPC's training, demonstration and resource support has been compiled:

Fruit tree sales[1]	**1,929,230**
Fruit sales[2]	**1,279,325**
Seed sales[3]	**6,082**

Total NRs	**3,214,637**

[1] recorded since 2019 – 77% from Humla apple trees
[2] recorded over the past 12 months
[3] recorded over the past 6 months

When these 3 records are combined a total income resulting from HPC's activities comes to **NRs21,799,517/- (£145,330).** Note, part of this total includes income from a survey of 55 demonstration farmers in Surkhet. If ALL participating households were surveyed in such detail the figure would be significantly higher.

Beekeeping
Not only a direct source of livelihood, beekeeping is essential to farming for pollination essential for a wide range of agricultural crops, from fruit, to oil seeds. Much traditional knowledge exists about beekeeping and most villages will have traditional hives. HPC's interventions have been around using improved framed hives that are more efficient for bees to produce honey, and bee-friendly for managing the hives. The average improved (framed) hive produced an average of 3.8kg honey compared to the traditional hives that produced an average of just 1.4kg per hive. HPC trains farmers in producing and using these hives, and also 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. Finally, beekeeping equipment including honey extractors, veil, gloves, knife, queen gate and queen box have been distributed to groups.

In this period, which is relatively low in productivity due to the monsoon, **468kg** of honey has been produced from **206 improved hives** which, added to 1200kg from nearly 700 traditional hives makes total production of **1675kg** with a value of **NRs 1,674,500/-** (£11,000).

For Phase 4 from December 2018 to November 2022 a total of **60 farmers** have been trained in beekeeping in improved hives, and **5,694kg** of honey has been produced with a value of **NRs 4,381,500/-** (£29,210). Approximately 10% of the honey is consumed at home, the remainder sold to entrepreneurs that purchase direct from village households.

Vegetable seed production
The ability of farmers to produce their own vegetable seeds is not only a potential income source but also crucial in maintaining resilience in vegetable production where more and more seeds' production is becoming in the hands of fewer and fewer international corporations. HPC trains its farmers to save seeds and facilitates their trade amongst groups, with excess being made available to outside growers.

In the period June to November 2022, **362.89kg of 33 varieties** of seed has been produced in 31 village groups, the big producers being climbing bean (72.9kg), coriander (46kg), Slipper gourd (41.39kg), pumpkin (31.86kg), chilli (28.27kg), eggplant/aubergine (22.67kg), and cucumber (18.51kg). Smaller amounts include broadleaf mustard, radish, bitter gourd, cauliflower, broccoli, pumpkin, snake gourd, turnip, Swiss chard, fennel and lettuce.

Over the past 4 years of Phase 4, a total of **2,565kg** of vegetable seed has been produced by village groups in Surkhet and Humla. Most of this has gone to support local growth in kitchen gardens, there now being **761** in **31 villages**. The remaining seed is traded between groups, districts and organisations for similar purposes, with a small but growing amount being sold.

Cotton Growing & Processing
Growing of potential cash crops such as cotton is an important aspect of HPC's agroecological strategy. Regenerative farming methods producing bountiful crops to source local cooperative ventures is the template for this research. HPC has found that the varieties of organic cotton tested grew better at lower altitudes so while there are small amounts still grown in the originally selected villages, production has shifted to the plains of the Bheri River in Gurvakot municipality. As a result the number of farmers planting is still small, but growing.

For the past 2 years, unseasonal heavy rain and floods near harvest time resulted in significant crop loss – though this problem affected many other crops not just cotton. Around 100kgs of organic cotton was grown this year, plus 30kg of seed for next year's crop. In total around **350kg** of cotton and **50kg of seed** has been produced in Phase 4. Because the seed is being saved HPC expects this program to grow steadily with no further inputs required, other than using crops as demonstration for field trainings and tours.

Mills
HPC provides support to build hydro-mills for grain milling and vegetable oil production, including improving, retro-fitting and maintaining existing mills. By replacing the wooden shaft and blades of the traditional mill with iron shaft and blades, an improved iron mill, the efficiency of the mill is improved so it can run on a lower flow-volume of water. This in turn means that the mill can operate further into the dry season as streams' flow rate decreases, so villagers can continue to mill flour locally and not travel to larger mills further away.

In this period in Humla, Mastadev Krishi group in Seri has built a new improved mill after the old one was washed away in a flood. In addition, following recent electrification with solar and hydro power systems, 3 electric mills have been acquired and distributed in Lotpata, Chihi and Bhadauda villages. The Seri and Chihi mills will be used mainly by those villages (23 and 48 households respectively), but the Lotpata mill, due to its proximity to other villages, will be used by farmers from Lotpata, Bhadaura, Dalitbada, Dapka and Saathi villages, **benefitting 104 households comprising 645 people**.

In total during Phase 4 HPC has supported the construction and maintenance of 8 improved mills, 2 multi-purpose mills and 3 electric mills, benefitting **404** households and **2,355 villagers**. In Humla, 1 new improved mill, 4 repaired mills and 2 new electric mills have provided benefits to **214 households** comprising **1,300 people**. In Surkhet, 5 mills comprising 1 new and 4 repaired have benefitted a total of **190 households** (1,055 villagers – 504 female and 551 male).

A recent survey of 9 villages using the improved 5 mills built or repaired over the past 4 years in Humla showed a saving of 25 minutes each time 5kg of flour is milled (45 minutes for the traditional mill compared with 20 minutes for the improved mill). With an average of 50kg milled per month, 10 trips gives a saving of 250 minutes per household per month, or 50 hours per year. For the 214 households using those mills, the cumulative saving is therefore **446 days**.

Oil milling
An electric oil mill has been recently provided to Bhadauda village (see also above under "Mills"). This mill is specifically for oil expelling and will benefit a similar number of people and households as the Lotpata mill (104 households comprising 645

people). Over the previous 10-20 years there had been a decline in locally produced vegetable/cooking oil due to the ease of buying processed imported oils compared to the labour of processing locally grown crops including mustard, wild walnut and wild almond. Partially because of the improved milling technology provided by HPC, combined with the sharply increasing cost of imported oil, many farmers are returning to processing and use of locally grown oil-producing crops. Walnut, almond and apricot are low-input perennials and have a particularly high value, and count as a potential export crop. Another valuable and oil-producing perennial shrub is **Dhatelo** *(Prinsepiautilis Royle)* which farmers have harvested and taken as far away as Surkhet to mill, bringing it the oil back to Humla for consumption. Now this can be milled locally.

Herbs development
Farmers in HPC villages are continuing to establish plants for herbal use. In this period a further **4,203 herbal plants** of 33 species of herb have been established (343 in Surkhet, 3,860 in Humla) including 3,080 of the economically significant ***Aconitum Heterothyllum*** (Nep. *Atis)*.

Overall in Phase 4 some 9,318 herbs have been established. Most are used for domestic consumption by both people and livestock. Occasionally harvests are made if entrepreneurs come to the villages seeking certain herbs, as happens with *Atis*.

Weaving & Fibre Processing
Group members in the Cherkule region of Rajena municipality (Mavidada, Chaurgaun, Ghatutol, Subbatol, Pakhapani and Gurung Gaun villages) are currently harvesting wild nettle *Girardinia diversifolia* (Nep. Allo) for processing into yarn following training, spinning wheels and other harvesting equipment being provided by HPC. From last year 80kg of fibre has been produced and is ready for spinning, another 80kg is ready for processing, which required soaking and cooking in order to separate the fibres ready for spinning.

Cold Store
A 10m x 5m cold store has been built in Surkhet near to the Resource Centre at Tandikhet. Constructed in a cool microclimate at the base of a north-facing slope, the building has a special design with sand and perforated pipe around the outside of 3 walls so keep the walls cool. Inside are racks for produce storage. From the ceiling and roof a 15cm black pipe extends up 3m which heats up to draw air from the coolest part of the store up through the racks, acting like air conditioning. The result is a room at a constant temperature of around 4^{o}C. The cold store has only just been completed so has not been filled with produce yet, and is expected to come into full use when the weather warms up next Spring.

Solar drier
HPC has been manufacturing home-made versions of solar dryers reducing their cost to communities. They are being used for drying a variety of products including beans and pulses, chillies, Asian pepper (Timur), cardamom and mulberry. In Humla they are also being used for apple drying.

In this period 6 new solar driers have been made in Humla.

In total **30 solar driers** (Humla 21, Surkhet 9) have been constructed after 1 was acquired from Manikej Industries in Surkhet, and local carpenters trained in their construction.

Apple drying Humla
Farmers from HPC's 18 villages in Humla documented a healthy **17,178kg harvest of apples** – the biggest harvest since records began - between August and November, and are using the 21 home-made solar driers provided to process some of them into apple rings. Although an aim was to be able to market dried apple, to date these are all being consumed locally.

Juice/Jam making
This program is processing fruits during time of glut is juice and jam making. Communities have been learning the process of doing this and training is continuing, and HPC have been supplying simple technology to aid the process. In Surkhet, 5 juicing machines have been provided, and 2 in Humla.

Biogas
A Total of **14 systems** have been built in Surkhet in Phase 4 (including 1 at the RC) – the target was 9, but with community contribution and subsidy from the government, 13 have been achieved, in 5 villages. A survey in Surkhet has shown that before building the biogas a household would use up to 30-40 kg a day (900-1200kg per month) for cooking food and porridge for livestock (and occasionally distilling alcohol). After building the biogas unit that firewood need has gone down to **30-40kg *per month*** – a massive saving of **870-1160kg per month,** or **10.4 Tonnes per year**. For the 14 households with biogas in Surkhet that's a saving of **12.2-16.2 Tonnes per month** or **146T-195T per year**. The time saving can be calculated similar to in Humla with the stoves survey (see above), with 870-1160kg per month equating to 22-30 loads per month saved. In the Surkhet area the average time taken to gather a load of firewood is slightly less at 1.5 hours. This gives a saving of **33-45 hours per month**, or **16.5-22.5 days per year** for a household with biogas. For the 14 households with biogas in Surkhet, that's a cumulative saving of **19-26 days per month**, or **231-315 person-days per year**. Twigs and kindling left over from feeding tree fodder to livestock also supplement any firewood needs (they use this for making livestock porridge). The units are fed approximately 20-25kg of dung each day (mixed with water), and as well as cutting the need for firewood, reducing smoke in the kitchen and making the cleaning of pots easier, they also provide about 10kg of nutrient rich liquid compost daily.

Solar electric
HPC have provided solar sets comprising panel, battery and 3 lights to **81 households** in the early stages of Phase 4 (in addition to **153 households** in Phase 3). The benefits of this have been:

- better illumination enabling better hygiene,
- students able to study at home
- there is less need for burning fossil fuels/wood for lighting
- less smoke-related illnesses
- reduced cost of lighting.

In Humla the solar lights were provided in Phase 3 (2015-2018) and in most villages they have now only in the last 6 months been replaced by large-scale hydro and solar systems in Tanjakot municipality, having served their purpose for 6-7 years. In Surkhet and other parts of Humla the kits provided by HPC are still operating.

Humla Story:
Before HPC came, dyalu (Pine chips) or kerosene were our lighting – this would cost 150 trees for pine chips [in HPC's Panda working areas – 8 villages] for every year. This was saved when solar lighting arrived (2016-19).

Sugarcane Processing Machine
This project has acquired hand-operated mills for squeezing sugar cane juice. Many communities have been planting sugar cane as part of the agro-forestry planting activities so there is a plentiful supply of raw material. The aim is to be able to market the juice though in the short term it is a nourishing drink for local consumption. In total **4 machines** have been distributed, 2 in each district and all are in use.

Cloth recycling machine/training
This is a machine for recycling old/discarded cloth into useable cloth. Two machines have been provided in Surkhet and Humla. In Surkhet the machine has been retrofitted onto an existing multi-purpose mill in Pakhapani, but it is damaged and awaiting repairs at present. In Humla, the machine was to be fitted in the same way but in the advent of Municipality-wide solar and hydro electricity supply it will now be fitted in Seri village (Mastadev Krishi group) to run off electric. As such both machines are in place but outputs have not yet been seen.

Community agro-vet centre operation
In this program veterinary medicines and resources are sold through a cooperative, bought in bulk and sold at just above cost price. Farmers buy their services and materials to enable re-stocking and sustainable operation of the centre.

In this period **1,071 livestock** (618 Surkhet, 453 in Humla) have been treated via the Agro-vet centres for a range of ailments including worms, skin parasites and wounds. Over the past 18 months since the Agro-vet centre has been running, a total of **8,218 livestock** have been treated.

Farm produce and distribution centre
This activity aims to set up a cooperatively run centre to collect farm produce (including under vegetable production and chicken rearing partnerships) from member villages and organise their transport and selling at local town markets after grading and quality control. A structure to collect and store produce before taking to market has been constructed at the Tadikhet RC in this period but has not been used yet.

Farm tools community sales centre
In this activity useful tools and hardware are purchased in bulk by a local cooperative, similar to the agro-vet operation, and sold to group members at above cost price, but still cheaper than the wholesale rate on the bazaar, and saving the travel costs. Income is saved to purchase new materials. In this period **51 households** (Surkhet 31, Humla 20) have benefitted from this service, purchasing 473 different items of hardware, such as nails and screws, raw iron (that local blacksmiths are then able to process), shovels, sprinklers and garden pipe.

In total **331 households** have benefitted from this service since it started 18 months ago, generating **NRs 129,372/- of income** for the centres, which is re-invested in buying new tools.

Vegetable production partnership
This activity aimed to coordinate vegetable growing with 30 households from disadvantaged groups in HPC's working areas, enabling them to produce vegetables to enhance their diets as a priority and further be able to be sold through the Farm Produce and Distribution Centre described above or privately by the grower. At the end of 3 years there had been no activity; vegetable growing is increasing overall and with cooperatives being formed, PGS certification and overall higher market access it was realised that other activities should take priority and it was removed from the project.

Local chicken rearing partnership
In this activity selected low-income farmers are given support to invest in local chicken-rearing enterprises. Originally aimed at 12 low-income households by providing materials to build chicken coops and start-up breeding pairs of local stock, it has become a successful activity for **28 participating households**, 19 in Surkhet and 9 in Humla. Between them they have earned NRs 20,810/- in eggs and NRs 385,900/- in meat from local chickens in this reporting period alone, and **NRs 43,590 and 648,215/-** respectfully since the activity started in June 2021 (18 months ago). Participating farmers generally have been purchasing processed foodstock, and in the last 6 months HPC staff have been providing training to use more local foods, making a mix of maize, soya and wheat flour, rice husk, ground bone and ground egg shells. This has reduced the cost of feed and also means the chickens can be fed organically, as participating farmers are growing their crops organically anyway.

Radio permaculture program
This activity was aimed to produce permaculture and project-related material for broadcast over local radio in Surkhet and Humla. At the end of 3 years there had been no activity other than using local radio in Humla to advertise grafted apple trees gown in HPC groups' nurseries there (see above "Fruit Tree Sales"), it was seen that staff did not have the capacity to fully implement the activity, and it was realised that other activities need priority, so it was removed from the project.

Sewing training
Training has been completed in Surkhet after 12 women from 8 village groups were apprenticed for 3 months in Gurung Gaun. HPC partnered with the local Municipality who provided 5 out of 12 sewing machines and HPC provided the remaining 7 machines.

Training in sewing has now ceased, however income is still being recorded. In this period 6 sewing trainees in Surkhet and 3 in Humla have earned a combined total of **NRs 51,980/-** from sewing **386 items** such as *kurta-suruwal*, maxi, petticoat, blouse and lungi. They include sewing new clothes as well as repairing old ones.

Combined with the previous 12 months figures these tailors have earned a recorded **NRs 93,590/-** in the past 18 months, since taking the training and being provided with a sewing machine.

Blacksmith training
This involves providing basic and advanced blacksmithing skills' training and tools for farmers so they can learn the basic skills of tool manufacture and maintenance. Farmers taking this training are able to produce and maintain tools for their community while providing them with a significant proportion of income needs. In total 12 blacksmiths (7 in Surkhet and 5 in Humla) have received training from HPC and are active in applying their skills. In this period they have earned **NRs 296,790/-** from making or repairing **2,595 tools** for their respective communities**.**

Since the start of Phase 4, **12 blacksmiths** trained by HPC have earned a total of **NRs 1,380,465/- (GB£8,906)**.

Leatherworking training
In Humla, 4 Dalit-caste and 1 Chhetri farmers that were provided a training in leatherworking have continued their part-time work of shoe repair, mending 44 pairs for a combined income of NRs **6,800/-**.

Since records began 18 months ago, these leatherworkers have earned a total of **NRs 6,800/-** from their part-time work.

Furniture making training
This training aims to develop skills to start small-scale furniture cottage industries using local wood and timber. It was delayed due to Covid, and in this period 2 trainings have been provided in Surkhet (for 8 men) and Humla (for 12 men and 1 woman). In Surkhet 2 beds and a cabinet were made on the training, and participants also received follow-up practice apprenticing making the shelves and racks for the cold store. In Humla 3 cabinets were made. Previously 3 other furniture trainings have been held including 1 specialist bamboo training with Almost Heaven Farms in Ilam.

In this period 14 Carpentry training trainees have accumulated **NRs786,800/-** in income from their work, and overall in Phase 4 **NRs 1,056,000/- (GB£7,000)** has been earned.

5. CAPACITY BUILDING PROGRAM

Permaculture Design Course (PDC)
HPC is currently the only organisation in Nepal to be teaching the PDC in Nepali at farmers' level. The target was to run 3 of these international-standard courses for 50 farmers and staff in Phase 4, however due to Covid only 2 courses have been able to be delivered, for **8 women and 19 men**.

The course is especially for those farmers aiming to become Barefoot Consultants (BCs), to enable them to create and implement regenerative designs on their own land, in their own communities, and further for other communities and organisations within and beyond HPC's working areas.

The first part of the course focuses 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. The design section has the following elements:

Stage	Elements
Survey	Observation of land (soil, water, climate, slope, aspect, biodiversity, erosion, etc.) and client (vision/aims, resources, constraints, etc.)
Analysis	Assessment of functions needed; systems and elements to fulfil functions
Design	Placement of systems and elements to fulfil functions; integration of systems so needs/inputs are provided by outputs of other systems
Implementation	Plan of how the design is implemented including inputs, priorities and sequence of work over time
Maintenance	After implementation, how the design is maintained over time including inputs and outputs
Evaluation	On-going monitoring and evaluation of whether the design is achieving goals
Tweak	Changes and modifications to the design and implementation as required

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, and to share experiences of applying the knowledge and skills learned at their PDCs. Over the past 4 years this has been done 5

times (twice in Humla and 3 times in Surkhet) for 69 PDC participants (27 from Phase 4 and 42 from Phase 3).

Village Design Course
This is a basic, locally modified 5-day version of the PDC. It is designed to give background of the problems facing rural communities and show them how to assess their needs, resources and constraints. It also introduces how permaculture can help make changes and improvements as well as contribute to and strengthen traditional practices.

While the target was for 5 VDCs to 100 farmers, due to Covid only 2 have been able to be run for 41 farmers (**11 women and 30 men)**.

Trainers' Training
In Humla a 5-day Training of Trainers (ToT) course was run from the RC for **9 women and 14 men.** This training was aimed at BC capacity building so providing trainee BCs with basic group teaching and facilitation skills: confidence and competence in teaching their own practical skills to other groups. The ToT was led by Mr Raj B. Giri from Kathmandu Training Centre who has visited HPC's Humla area before to deliver organisational capacity building courses.
Key components of the ToT are:

- Learning principles and learning domains
- Training approaches
- Training cycle
- Participatory training methods and their use to teach knowledge, skill and attitude
- Training materials and their use to teach Knowledge , Skill and attitude
- Designing Session plan and its importance in teaching learning process
- Facilitation skills (presentation and Facilitation skills)
- Training Need Assessment (TNA) (tools and practice)
- Training Curriculum Design
- Micro session presentation and Video watching/feedback
- Qualities needed to be professional trainer
- Training Monitoring, evaluation and Follow up

Micro-ToT follow-up
In this period a new approach to the ToT was also piloted, where BCs were given a training assignment. They then had to go through a full training cycle with a village group, starting with their training needs assessment (TNA), selecting the topic to teach, constructing a training plan, delivering a session (1-2 hours in length), documenting, evaluating, and reporting on the training. This was observed by another BC who would also provide feedback to the trainer and to the wider facilitation group that included HPC staff as observers and mentors. In this way, 7 BCs in Surkhet went through the process, including 3 new BCs with no teaching experience, teaching 20 short technical trainings (between 1-3 hours) to 372 farmers. Meanwhile in Humla 2 BCs co-taught training in building a fruit nursery, and further trainings are in process as this report is being compiled.

Organisational Development
This program has had 2 main aims. Firstly it looks to increase the capacity of HPC to plan, design, implement, monitor and evaluate its programs. Many of the systems are already in place for this, and so it is the monitoring and evaluating that are the important outputs. The second aim is to develop the capacity of village groups to do likewise, which is a focus of Phase 4. In particular it is about ensuring that village groups have the infrastructure and skills to manage their own livelihood–related activities, including

the various community-based co-operatives that are planned and in the early stages of development (see above). Having the right skills and organisational structures are key to allowing such initiatives to be self-reliant and resilient.

Throughout Phase 4, **4 Organisational Development trainings** have been provided to **68 staff and group representatives**, in a range of topics including accounting, PGS, Monitoring and Evaluation, Cooperative structures and Cooperative management. These trainings have enabled village groups to form and manage the Farm tools community sales centre and the Community agro-vet centre, and are now involved in the PGS scheme and vegetable/fruit collection and distribution centre.

Business and Marketing Training
This training has been sought to build the capacity of and provide skills and information to enable HPC, its groups and new Cooperatives to effectively access markets with farm products. Due to the excess of workload in trying to complete delayed activities, to date HPC has been unable to source the appropriate training, however through collaboration with Organic Valley (OV), a private enterprise working with farmers to collect and process various products for export, including ginger, turmeric and Asian pepper, it is now hoping to gain expertise. HPC have been providing OV with farmers' training in Surkhet and Doti districts specifically for kitchen gardens and agroforestry, to supplement their farmers' cash-cropping activities.

Organic Certification
HPC has continued to research into methods of organic produce certification and in particular the **Participatory Guarantee System** (PGS) of certification following training in the previous period. Following an agreement made with the Social Work Institute of Kathmandu to be coordinated out of its branch in Kailali district, SWI has provided PGS training and implementation of a **community organic certification program** from 2020-2023, whereby SWI will provide all training and capacity building inputs to HPC staff and groups enabling them to certify various farm produce under the PGS system. Currently one barefoot consultant (BC) has been employed by SWI for this program and they are currently assembling data from groups in the area, including crop types, seasonal output, crop residue production (straw, etc.), composting methods, pest-management methods and seed saving.

Difficulties with the PGS certification have been mainly the time taken to gather the farm data required, involving mapping and recording farmers' plots and crops, while farmers themselves are busy dealing with climatic challenges (drought, erosion, pests and disease etc.) and trying to build and maintain soil fertility. The temptation to resort to agro-chemicals is great so putting in the quality control checks and balances is crucial. Meanwhile actual farm productivity and market access systems are also developing well, and partnerships being formed between cooperatives, marketing and local government being formed.

Farmers Field trips
Like many other activities this was also affected significantly by Covid, with travel and interaction restricted. Throughout Phase 4, farmers and staff have been involved in field trips to visit projects and areas where successful model activities have been running. There have been 4 Farmers' Field trips for 12 women and 56 men, 3 from Humla to Surkhet and 1 to visit Shrijanshil Permaculture Farm in Gurvakot Municipality in Surkhet. In addition there have been 3 SRI field trips for 8 women and 16 men.

Farmer-Farmer extension

A range of activities are happening in the Farmer-to-farmer exchange program as village groups take more responsibility for planning HPC programs. Representatives of groups meet together periodically to review activities and share exchange experience. Meetings are usually held quarterly unless important issues arise in which case they are more frequent. Topics discussed centre around review and evaluation of on-going activities and planning of future programs, and stories of various techniques and approaches are shared – what's working, what's challenging.

Barefoot Consultants' Workshop
Part of HPC's capacity building program involves production and monitoring of barefoot consultants (BCs) that are trained in many forms of agro-ecological techniques and approaches and then hired as consultants both within and outside of HPC working areas. Many of the farmers' trainings described above in 1.3 are now provided by BCs within HPC's 31 villages, but they are also contracted to move outside of the areas where and as required. In the current period **17 BCs** have provided various services in **20 occasions**, including women's health (health camp, gender, WHN and mobile health training), mobile farmers' training, furniture making training and cuttings' establishment training, and long-term consultancies in Dhading district (KAAA) and Kopila Valley School in Birendanagar.

To date **70 BCs** have been able to teach in HPC trainings both within its working areas and beyond. HPC has designated 3 categories according to their abilities:

Category 1 – have lead/facilitated a 5-day farmers' training, livestock health training, mobile training, mobile women's health training and any technical training
Category 2 – have supported a Category 1 trainer and co-facilitated similar trainings
Category 3 – have taught a single-subject technical training e.g. grafting, stove making, etc.

	Grade 1	Grade 2	Grade 3	**Total**
Surkhet	9	16	28	**53**
Humla	19	31	38	**88**
Total	**28**	**47**	**66**	**141**

Rice Breeding training
This training was due to be held in Pokhora, Begnas, where expert Surya Adhikari and his wife Saruswati have perfected methods for slelecting and breeding rice varieties. The training was continually delayed due to the trainer being sick, then Covid, and eventually was removed from the program.

HPC Festival
Every year in Surkhet and Humla with the exception of a lockdown period for Humla, HPC has held a agricultural festival near its 2 resource centres. In this period Humla's festival was held over 2 days, over 300 local villagers attended bringing farmer-produced exhibits of vegetables, fruits, grains and handicrafts. Local dance was performed and competitions of grafting and air layering held. The local Ward Office provided a donation of NRs 15,000/- towards the prizes for cultural dances at the festival.

The festivals provide an opportunity to celebrate the abundance of cultural and agricultural diversity, both in the local population, and with the principles and methods that HPC espouses. The mix of traditional culture with regenerative approaches and tools is apparent, and the synergy from their holistic integration works to help embed the solutions-based methods to build resilient communities.

Cultural Program
Once a forbidden activity for women, HPC helped local women's groups to resurrect the traditional Teej festival several years ago and it is now a regular event held during August. Women from all HPC's groups attend and dance, and women from outlying village have also started to attend.

Video film making
HPC has received training in video production in Phases2 and 3, and continue to produce short technical and awareness-raising videos about their work, as well as supporting others to. To date the following videos have been produced:

1. **Made by HPC:**

- HPC Introduction (10 min): https://www.youtube.com/watch?v=-8n9_WTi4dw&t=6s
- Women's Health (10 min): https://www.youtube.com/watch?v=6zn9LyqdkRA&t=196s
- Barefoot Consultants (10 min) https://www.youtube.com/watch?v=ud0cDdLCfUY
- Health and Nutrition (14 min): https://www.youtube.com/watch?v=EEc_iz70mN8 (this video alone has been viewed over **1,32,000 times** on You-tube)
- Farmers' Festival (1hr 12 min)
- White Discharge - What it is and How to cure it with Herbs: https://www.youtube.com/watch?v=dXxw1jq6D_8&list=PLUtvIa4Yp5ymtgLYCxZnGISf6FCsKgmV_&index=2
- Agroforestry (19 min)
- Making compost (24 min)
- Making videos (54 min)
- Improved/smokeless Stove (34 min): https://www.youtube.com/watch?v=lhzOK5GjqIA&t=7s
- Local Seed Saving (31 min): https://www.youtube.com/watch?v=0PQg7Pd1FJ4
- How to make Liquid Manure (31 min): https://www.youtube.com/watch?v=Ygnjcm9kbUc&list=PLUtvIa4Yp5ymtgLYCxZnGISf6FCsKgmV_&index=2&t=4s
- Song: https://www.youtube.com/watch?v=P1GoMmezNPE
- The subject of the 2018 MA dissertation at Oxford Brookes University, "Reincarnating Himalayan Resilience: A Permacultural Pathway by Lamis Jamil https://www.youtube.com/watch?v=lim2CStYsH0&t=1402s

2. **Made by other projects in partnership with HPC:**

Videos made in partnership between HPC and Almost Heaven Farms:

1. Introduction to Permaculture: https://www.youtube.com/watch?v=dRZBUBlHgWE
2. Kimchi Fermented Foods: https://www.youtube.com/watch?v=UgSKuJHdExk
3. Rocket Stoves: https://www.youtube.com/watch?v=Ey_mYlYb60E

Peace Corps Nepal:

- Leaf Pots: https://www.youtube.com/watch?v=6LjH0p50bUs&t=36s

- Water collection: https://www.youtube.com/watch?v=wZB77nV9Yhw

Sustainable Action Nepal (Producers):
https://www.youtube.com/watch?v=GLiBJxhY_m8
Scythe project: https://www.youtube.com/watch?v=6kgblvM26DM

PRA Training
This activity is aimed at training 100 group members in Participatory Rural Appraisal (PRA) techniques, enabling village groups to use PRA to survey and map existing conditions (such as resources and constraints) in their community as well as design improvements.
In this period 1, 3-day training has been provided to 22 participants (18 men and 4 women) in Humla. Participants learned different methods and approaches of PRA for surveying local villages. Delays in the program has resulted in only 1 out of 4 trainings being provided

Leadership Training
This activity is aimed at providing Leadership training to 80 representatives of local groups, enabling them to lead facilitation of their groups' activities in a transparent, democratic, effective and sustainable way.

- Roles and responsibilities
- Participation
- Community skills analysis and audit
- Communications
- Decision making processes
- Leadership skills
- Meeting processes
- Monitoring and evaluation

Proposal writing training
As part of HPC capacity-building program to enable village groups to become more self-reliant, and as part of HPC's exit strategy, a training in proposal writing has been provided in this period to 20 staff and village representatives (18 men and 2 women) from Surkhet and Humla.

While it is too early to see the outputs of this particular training, HPC has recorded that several participants of earlier trainings had been successful in securing local government funds including 1 successful proposal for 2 lakhs for erosion control in Tanjakot Humla. In Surkhet after receiving the training, Purnaman Pulami of Pragatishil Krishak group in Salgadhi made an application to the ward municipality for support to a local cultural group to repair and maintain their musical instruments, and was awarded NRs 25,000/- a year for a 5-year project, raising NRs 250,000/-.

Community contributions
Community contributions to activities in Surkhet and Humla show a total contribution of **1004 person days** with a monetary value of **NRs 692,800/- (GB£4,618).** Activities include maintaining community infrastructure (paths, bridges, water courses, mills, schools and community learning centres), and direct contributions to HPC programs such as porterage of equipment, and construction of PLC classrooms.

Throughout Phase 4 a total community contribution of **9,369 person days** has been recorded with a financial value of **6,464,610/- (GB£43,000).**

HPC Website

HPC's website, www.himalayanpermaculture.com was created February 2009. Over the past year to the date of this report (Nov. 2022) **1,078 hits** have been recorded of which **24%** were from within Nepal. In total over 310,000 hits have been recorded.

Other HPC mentions in:

FAO website: http://www.fao.org/3/a-bs179e.pdf

LUSH website: https://www.lushusa.com/charitypot-partners/himalayan_permaculture_centre.html

WeADAPT platform (this includes the video on Making Smokeless Stoves - see above): https://www.weadapt.org/subject/himalayan-permaculture-centre?width=500&height=&inline=true

International Permaculture Education Network Case Study: https://www.ipenpermaculture.org/resource/himalayan-permaculture-centre-hpc/

Article on health/nutrition and permaculture research in Nepal based on research with HPC: https://www.ennonline.net//fex/59/permaculturenepal

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