Agrobiodiversity and Priority Food Plants for Inclusion in the School Mid Day Meal Program

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North East Slow Food and Agrobiodiversity Society

2019

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Preface

The North Eastern Region of India including Meghalaya has a rich agrobiodoversity but this rich diversity is declining. Much of this diversity has been part of the food culture of the indigenous communities of the region. However, in the present context, the diversity of diets has been greatly reduced by the onslaught of global and national forces. Research has shown that there is low diversity of food at the household level coupled with the poor health indices of especially children and women in the state of Meghalaya.

One of the programmes of the government to enhance nutritional status of children is the Mid Day Meal programme where school meals are given to children. In the state, these school meals are often limited to food grains, pulses, vegetables, oils and condiments. Even though it aims to increase enrolment and enhance nutritional status of children, but these meals needs to be enriched with more diversity of food before it can fully achieve its objectives.

Thus NESFAS while working with communities and in the area of food has found that there is much food diversity in the communities which has not been used although many local varieties of plants and wild edibles are very nutritious. Therefore NESFAS aims to work with schools and communities to enhance the existing school meal programme.

As part of this project, NESFAS has worked with communities to map the local plant resources that could be included in the school meal programme. As would be detailed in the chapters, the approach has been participatory in manner where communities have listed and prioritised the local food plants. This book contains the local food resources that have been mapped in the five different villages, Laitsohpliah, Umdiengpoh, Mawmihthied, Nongtraw and Dewlieh. It is hoped that this volume will help the cooks and youth to understand the availability of local plant resources in their villages for use in the school meal programme or even to be used by youth from an entrepreneurial perspective.

Melari Shisha Nongrum PhD
Executive Director, NESFAS
Shillong, Meghalaya

Contributors

Bhogtoram Mawroh

Bhogtoram Mawroh has got a PhD in Geography from the North Eastern Hill University. He is the Senior Associate for Research and Knowledge Management in NESFAS and has been working with the organisation since January 2018.

Stefan Wann Lyngdoh

Stefan Wann Lyngdoh has completed his Master of Arts in Environment and Social Development from Martin Luther Christian University, Meghalaya. He is a Research Assistant in NESFAS and has been working with the organisation since September 2018.

Adelene Pyngrope

Adelene Pyngrope has got her Masters degree in Environmental Science from North Eastern Hill University. She is a Research Assistant in NESFAS and has been working with the organisation since October 2018.

Ruth Bernadean Sohtun

Ruth Bernadean Sohtun has completed her Master of Social Work from St. Edmund's College, Shillong. She works as a Field Coordinator under Khatarshnong, Laitkroh Block and has been working with the organization since 2018.

Carinthia Balabet Nengnong

Carinthia Balabet Nengnong has completed her Masters of Social Work (MSW) with specialization in Public Health from Tata Institute of Social Sciences (TISS), Mumbai. She is the Field Coordinator in NESFAS and has been working with the organisation since September 2018.

Naphishisha Nongsiej

Naphishisha Nongsiej has completed her Master in Social Work from St. Edmunds College, Shillong. She is working in NESFAS as a field co-ordinator since September 2018.

Suklinshisha Paliar

Suklinshisha Paliar has completed her Master in Social Work specialisation in Family and Child Welfare from Bosco Institute, Jorhat, Assam. She has also received the Youth Involve Fellowship from Bosco Institute, Jorhat, Assam for the duration of one year. She works as the Research Assistant in NESFAS, and has been working from September 2018.

01
Introduction

According to the World Health Organisation (WHO) malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients. Malnutrition includes undernutrition (wasting, stunting, and underweight), inadequate vitamins or minerals, overweight, obesity, and resulting diet-related non-communicable diseases. 52 million children under 5 years of age are wasted, 17 million are severely wasted and 155 million are stunted, while 41 million are overweight or obese. Around 45% of deaths among children under 5 years of age are linked to undernutrition. These mostly occur in low- and middle-income countries. At the same time, in these same countries, rates of childhood overweight and obesity are rising (WHO, 2019).

India is one of those low middle income countries whose Gross National Income per capita is around $2000. Many reports including National Health & Family Survey, United Nations International Children's Emergency Fund, and WHO have brought out high rates of malnutrition among adolescent girls, pregnant and lactating women, and children in India. The National Family Health Survey 4 (2015-2016) revealed that although rates has declined over the years among children under 5, stunting

(low height for age) is at 38.4%, wasting (low weight for height) is at 21% and underweight (low weight for age) is at 35.7%. These are still worrisome figures.

To tackle the program of malnutrition the government of India initiated the National Programme of Nutritional Support to Primary Education (NP-NSPE) on 15 August 1995. The objective of the scheme was to help improve the effectiveness of primary education by improving the nutritional status of primary school children. In April 2001, the People's Union for Civil Liberties (PUCL) initiated the public interest litigation (Civil) No. 196/2001, People's Union for Civil Liberties v. Union of India & Others– popularly known as the "right to food" case. The PUCL argued that article 21 – "right to life" of the Indian constitution when read together with articles 39(a) and 47, makes the right to food a derived fundamental right which is enforceable by virtue of the constitutional remedy provided under article 32 of the constitution. The Supreme Court passed a mandate stating, "We direct the State Governments/Union Territories to implement the Mid-Day Meal Scheme by providing every child in every Government and Government assisted Primary School with a prepared mid-day meal." In 2007 the name of the scheme changed to Mid-Day Meal program. Under this program wholesome freshly-cooked lunch is served to children in government and government-aided schools in India. The Scheme was further extended in 2002 to cover not only children studying in Government, Government aided and local body schools, but also children studying in Education Guarantee Scheme (EGS) and Alternative & Innovative Education (AIE) centres. Revisions of the scheme happened in 2004 and 2006 and on 1st April 2008 it was extended all over the country (Government of India, 2019).

Like other states of the country Meghalaya is also facing problems of malnutrition. For children under 5 in the state, stunting rate is 43.8% and underweight rate is 29%. An additional burden that children in Meghalaya suffer from is anaemia which 40.7% (The Telegraph, 2018). From 2005-2015, Arunachal Pradesh, Mizoram and Nagaland were among the top 10 states who performed best in stunting reduction rates (India Development Review, 2018). Meghalaya was not one of them which reveal the challenge that underlies challenge that lies in front of the state.

Mid-Day Meal Scheme was introduced in the State of Meghalaya since 1995 by giving dry ration to LP schools only. As per directives of the Supreme Court Order, cooked meal is provided to all Govt. and Govt. Aided Lower Primary and Upper Primary Schools @ 100 grams for Primary and 150 grams for Upper Primary per child per day for 10 academic months. The main objective of Mid-Day Meal Programme in the State is to boost universalisation of elementary education. Mid-Day Meal Programme is to attract more children to come to school and in this way it will increase enrolment, attendance, retention and bring down drop-out rate, improving the nutritional status of children and encourage poor children to attend school regularly and help them to concentrate on classroom activities – stop classroom hunger (Government of Meghalaya, 2018).

NESFAS, while lauding the program, is also working on supplementing the program in an attempt to bring about greater nutritional benefit. Except for foodgrains which is supplied free by the Government of India to the states for the program, the other required vitamins and minerals are to come from local sources. While working on agro-ecology and agrobiodiversity among the local communities of Meghalaya and Nagaland, NESFAS was able to bring to light the tremendous degree of agrobiodiversity which exists in North East India in general and in Meghalaya and Nagaland in particular. An average of 200 food plants was recorded among communities from these two states. These again can be categorised into different food groups as provided by FAO (Food and Agricultural Organisation) which classifies foods obtained from different sources into ten groups, viz., grains, white roots and tubers, and plantains; pulses (beans, peas and lentils); nuts and seeds; dairy; meat, poultry and fish; eggs; dark green leafy vegetables; other vitamin A-rich fruits and vegetables; other vegetables; and other fruits. There is the additional category of condiments as well which is a minor food group. At the same time dietary diversity, a proxy for nutritonal adequacy, was found to be low espeically in case of pulses (beans, peas and lentils); nuts and seeds; dark green leafy vegetables; other vitamin A-rich fruits and vegetables; and other fruits. NESFAS is batting for the inclusion of these food groups dervied from the local agrobiodiversity in the Mid Day Meal program through the school garden initiative. This, NESFAS, believes will strengthen the landmark program which is the Mid Day Meal scheme and improve nutritonal outcome of children in the community.

Project villages

Five villages, viz., Nongtraw, Laitsohpliah, Dewlieh, Umdiengpoh and Mawmihthied, all belonging to Khatarshnong Laitkroh Block, East Khasi Hills Meghalaya are taking part in the initiative to link agrobiodiversity with Mid-Day Meal program. FPIC (Free Prior Informed Consent) was recieved from the community. This was done by discussing the objectives of the project with all the stakeholders in the community. After the communtiy had understood the various aims of the project, their assent was recorded.

Once communtiy particpation was confirmed a participatory mapping exercise was done with the community for getting data on local agrobiodiversity and selection of prioritised crops (for more details see methodology section). Child population, 0-6 years, was around 20% in all the villages with only Nongtraw having lesser. Females make up almost half of the population in all the villages. Literacy rates were quite high (around 90% or more) in almost all the villages except Laitsohpliah where it was lesser than the national average at just 67.86%. Male and female literarcy rates were very similar with Nongtraw and Dewlieh in fact having higher female literacy than men. In total, there are 249 households accomodating 1222 people in this project.

Village	Socio-Demographic Indicator	Gender	Number
Dewlieh	Total Households		20
	Total Population		91
		Male	42
		Female	49
	Child (0-6)		20
		Male	10
		Female	10
	Literacy		90.14
		Male	87.50
		Female	92.31
Nongtraw	Total Households		35
	Total Population		180
		Male	96
		Female	84
	Child (0-6)		29
		Male	12
		Female	17
	Literacy		86.09
		Male	83.33
		Female	89.55
Mawmihthied	Total Households		88
	Total Population		430
		Male	220
		Female	210
	Child (0-6)		89
		Male	47
		Female	42
	Literacy		95.01
		Male	96.53
		Female	93.45

Village	Socio-Demographic Indicator	Gender	Number
Umdiengpoh	Total Households		56
	Total Population		270
		Male	132
		Female	138
	Child (0-6)		60
		Male	27
		Female	33
	Literacy		84.76
		Male	85.71
		Female	83.31
Laitsohpliah	Total Households		50
	Total Population		251
		Male	133
		Female	118
	Child (0-6)		55
		Male	33
		Female	22
	Literacy		67.86
		Male	69.00
		Female	66.67

Source: *Census of India, 2011*

Methodology

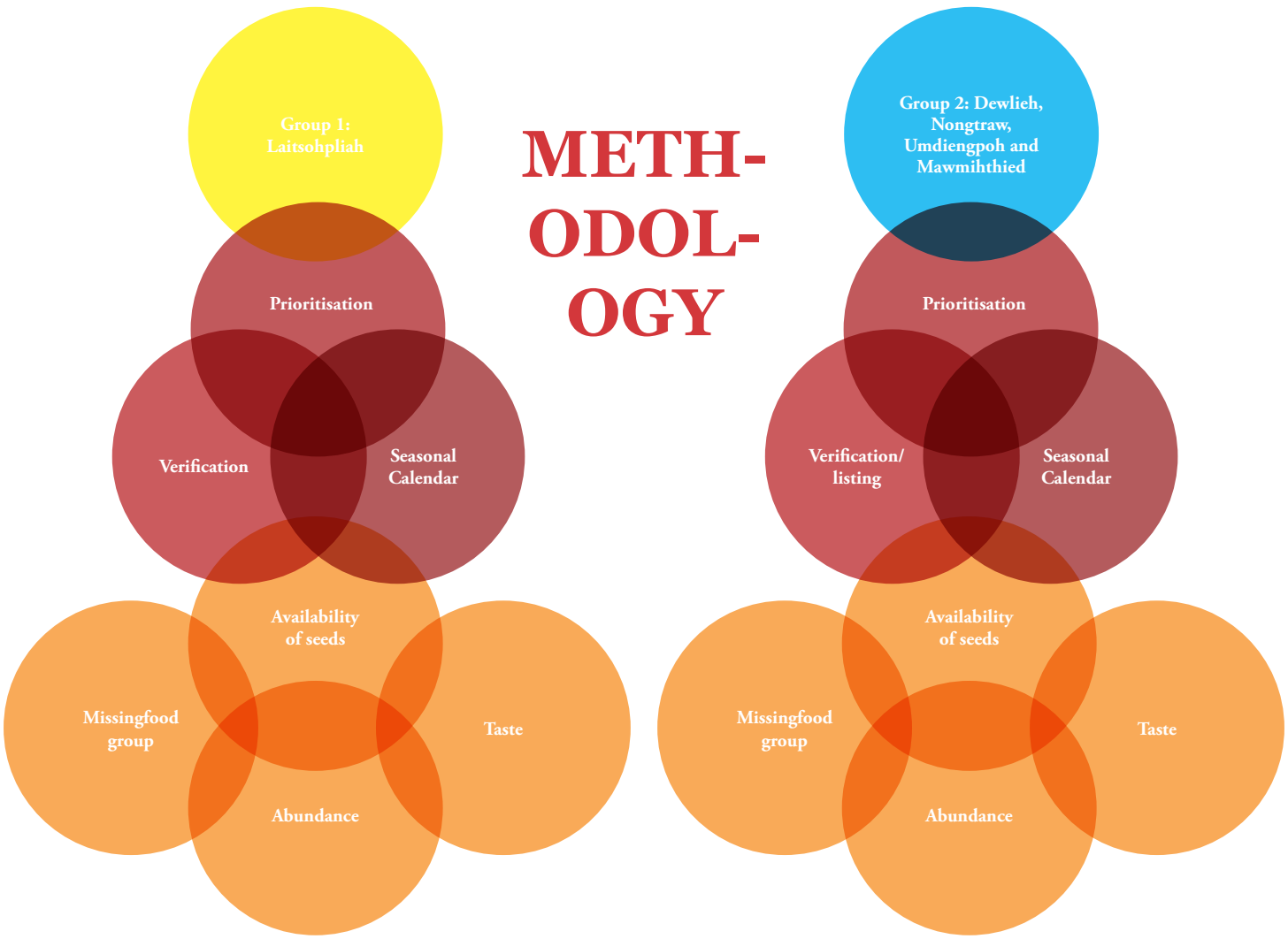
Among the villages selected for the project, in Laitsohpliah NESFAS had already done the participatory mapping exercise as part of the REC (Rural Electrical Corporation) supported project "No One Shall Be Left Behind Initiative: Biodiversity for Food, Nutrition and Energy Security, Meghalaya and Nagaland, North East India". Identification of micro-nutrient and climate resilient species for increasing consumption and production are one of the main goals of this project. Lukas Pawera, an ethno-botanist from the Czech University of Life Sciences, Prague in collaboration with NESFAS helped in designing a participatory methodology for documentation of agrobiodiversity from 32 project villages in Meghalaya and Nagaland, of which Latisohpliah was one such village. Therefore while particiaptory mapping exercise was an entirerly new activity for the other villages, in Latisohpliah, it was more about confirming the food plants recorded during the exercise and completing the seasonal calendar. Prioritisation of food crops for inclusion in school meal program though is an entirely new exercise for all the villages, including Laitsohpliah.

Confirming of food plants and seasonal calendar

There are two groups of villages in this exercise. Group 1 is Laitsohpliah in which participatory mapping has already been done which resulted in a list of the local agrobiodivesity found in the particular village. This gave a total of 192 food plants. In this case there is no need to do a participatory mapping exercise. Instead what is required is to verify the list of crops that was provided during the exercise. This is done by calling for an FGD, not less than 20 people. Gender parity in terms of composition of the group is followed. Also not less than a quarter of whom (i.e., 5) were custodian farmers. This is to ensure that the final list is as reliable as possible. There are two aspects which were dealt with while doing the verification. The first aspect is confirming the list and doing any addition or subtraction as required. The table below (see table 2) shows the data which was shared. The rows under section A are from the original list while the rows in section B are the modified list. For the first aspect only the first section was used. The community was asked whether the crops mentioned are found in the village and after a particular category is finished, in this case staple foods. After this was over, community was again asked whether any food plants have been missed which can be added. The new food plants are either new species or varieties of the same species. For example Presbin is mentioned to be found in the village. This is though only one variety with other varieties might have been missed. This is repeated for all the entries under all the food groups till the entire list is exhausted.

A (Original list)															
Local Category	**English Name**	**Local Name**	**Planting/ Harvesting**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Staple Foods	French Beans	Presbin	Harvesting								●	●			
	Raddish	Muli	Harvesting									●	●	●	●
	Squash	Biskot Lieh	Harvesting								●	●	●	●	●
B (Modified List)															
Staple Foods	French Beans	Presbin	Planting					●	●						
			Harvesting								●	●			
	Raddish	Muli	Planting		●	●									
			Harvesting									●	●	●	●
	Squash	Biskot Lieh	Planting		●										
			Harvesting								●	●	●	●	●

N.B: *Jan: January; Feb: February; Mar: March; Apr: April; May: May; Jun: June; Jul: July; Aug: August; Sep: September; Oct: October; Nov: November; Dec: December*



The second aspect is the regarding the seasonality calendar. The symbols in the cells in section (A) and (B) show the months when the food plant is available, i.e., can be harvested. In the second section (B) the list is repeated with a slight change that there is now an additional row which is blank. This row is now used for the entering information on the planting season. For example, August and September, as shown above are harvesting months while upon enquiry it was found that February is the planting season. In that case, information is entered in the February cells to indicate the planting season. This is done for all the crops in all the different food categories. In the end the planting as well as the harvesting months is recorded in the new table, i.e., section B.

Prioritisation of crops for Mid Day Meal

In both the Group 1 and Group 2 villages, after the verification and seasonal calendar has been created the next step was to prioritise the food plants from the local agrobiodiversity. The same FGD group was used for the purpose. This prioritisation was based on the following criteria:

1. **Missing food groups:** The DDS survey done as part of the participatory mapping brought to light the gaps in food consumption among selected villages (which includes Laitsohpliah) from Meghalaya and Nagaland. Data for the East Khasi Hills district DDS was used to identify the missing food groups which became the prioritised food groups for the villages in both Group 1 and Group 2. These missing food groups are viz., pulses, nuts and seeds, vitamin A rich plants, green leafy vegetables and other fruits.
2. **Availability of seeds:** Any food plant that is selected as a prioritised plant should not face any shortage of seeds. This is to ensure that there are no supply bottlenecks in the future. Availability of seeds was thus another criterion used for prioritisation.
3. **Abundance:** Limited production may hamper regular incorporation of the food plants into the Mid-Day Meal diet. The aim is to grow the food plants in the school garden. But in case of low yield, harvesting from the local farms is an option.
4. **Taste:** Taste, especially for children is a very important criterion. Therefore care was taken that the food plant chosen is something that is relished by the local community, esp. children.

Prioritisation was done using Visualization in Participatory Programmes (VIPP) tools to ensure that the exercise is participatory. In the end the entire process yielded the agrobiodiversity list together with the seasonal calendar and prioritized list.

Chapter Scheme

This document has been divided into three chapters. The first chapter gives an introduction about the malnutrition burden on India in general and Meghalaya in particular. Also included is a discussion on the Mid-Day Meal program and the need to strengthen the program by inclusion of local agrobiodiversity, rationale of the project. The chapter then goes into the methodology adopted for the participatory mapping exercise for listing local agrobiodiversity and selection of priority food plants. Chapter two looks into the agrobiodiveristy of participating villages. This it does by creating a seasonal calendar for individual food plants found in respective villages. Chapter three then brings out the priority list of the crops selected for inclusion into the Mid-Day Meal program. And finally, the last chapter, i.e., Chapter four summarise the whole document and puts forward some pertinent conclusions.


AGRO
BIODIVERSITY

02

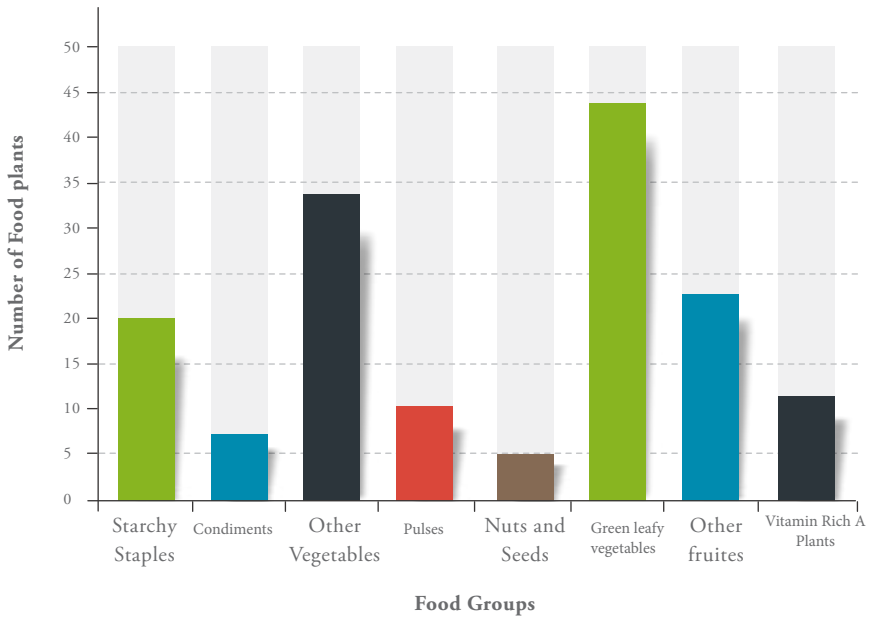
SEASONAL CALENDAR OF LOCAL AGROBIODIVERSTIY

Agrobiodiversity can be understood as the variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries. But in this document, only the food plants have been included. These include both cultivated as well as those harvested from the wild. These are again divided into the food groups as identified by FAO viz., Starchy Staples: Grains, White Roots and Tubers, and Plantains; Pulses (Beans, Peas and Lentils); Nuts and Seeds; Dairy; Meat, Poultry and Fish; Eggs; Dark Green Leafy Vegetables; Vitamin A-Rich Fruits; Other Vegetables; and Other Fruits. There is the additional category of Condiments as well which is a minor food group. An important point to consider while reviewing the list is that the same crop may occur more than once. This is because a single crop may have parts when consumed will consign it to different food groups. For example, pumpkin can either be in the Other Vegetable or Vitamin A Rich Plant category depending on the colour of its flesh. At the same time, when the leaves are consumed it is categorised as a Green Leafy Vegetable. Hence, in some cases double counting will occur.

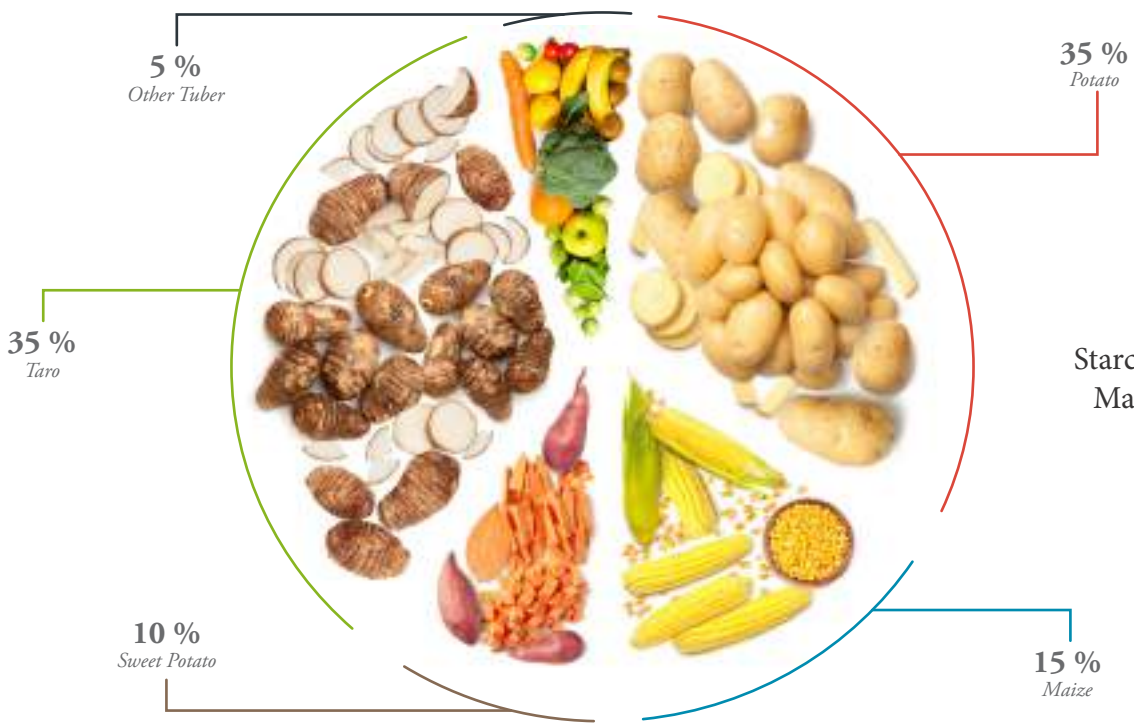
In this chapter the agrobiodiversity list of individual food plants from the participating villages of Mawmihthied, Latisohpliah, Nongtraw, Dewlieh and Umdiengpoh is shared. They are classified into food groups along with information on planting and harvesting of individual food plants. In case of food plants collected from the forest only the harvesting period is given. This is mostly the case with Green Leafy Vegetables, majority of whom infact are of the wild vareity. Similar is the case with Fruits, many of whom can only be found from the forest. In times of food shortage these plants are highly indispensable for the community. In lieu of their importance, there have been attempts to domesticate some of the wild varieties by incorporating them in the homestead gardens or the jhum fields. Results have been mixed. As long as forests thrive the communtiy can continue to depend on these wild food plants. At the same time, disapperance of the forests will also lead to the extinction of these food plants putting community's food security into jeopardy.

Mawmihthied

Mawmihthied recorded a total of 149 food plants from the local landscape. Out of this, the highest number of plants (>20%) are found among the Green Leafy Vegetables category followed very closely by the Other Vegetables, more than 30 food plants in both the categories. The least number of food plants (<5%) are from Nuts and Seeds and Condiments who have less than 10 food plants in their respective groups. Starchy Staples have just over 10% of the total food plants. Within this particular food group though five different species of food plants, viz., potato, maize, sweet potato, taro and other tuber, are found. In general, all the plant based food groups are available in the community.



Agrobiodiversity in Mawmihthied



Starchy staples in Mawmihthied

Starchy Staples

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phan Joyti	*Solanum sp.*	Planting												
		Harvesting												
Phan Syntiew	*Solanum sp.*	Planting												
		Harvesting												
Phan Imdieng	*Solanum sp.*	Planting												
		Harvesting												
Phan Sanminit	*Solanum tuberosum*	Planting												
		Harvesting												
Phan Lieh	*Solanum tuberosum*	Planting												
		Harvesting												
Phan Saw	*Solanum tuberosum*	Planting												
		Harvesting												
Phan Kophri Meikha	*Solanum sp.*	Planting												
		Harvesting												
Phan Karo Saw	*Ipomea batatas*	Planting												
		Harvesting												
Phan Karo Lieh	*Ipomea batatas*	Planting												
		Harvesting												
Riew Hadem Lieh	*Zea mays*	Planting												
		Harvesting												
Riew Hadem Stem	*Zea mays*	Planting												
		Harvesting												
Phan Karo Saw	*Zea mays*	Planting												
		Harvesting												
Shriew Knapblang	*Alocasia macrorrhiza*	Planting												
		Harvesting												
Shriew Pylleng	*Colocasia/alocasia/ remutsia sp.*	Planting												
		Harvesting												
Shriew Lyngkait	*Colocasia/alocasia/ remutsia sp.*	Planting												
		Harvesting												
Shriew Jrong	*Amorphophallus sp.*	Planting												
		Harvesting												
Shriew Blue	*Colocasia/alocasia/ remutsia sp.*	Planting												
		Harvesting												
Shriew Lyngkait	*Colocasia/alocasia/ remutsia sp.*	Planting												
		Harvesting												

Shriew Saw	*Colocasia/alocasia/ remutsia sp.*	Planting	
		Harvesting	
Soh Phlang	*Flemingia vestita*	Planting	
		Harvesting	

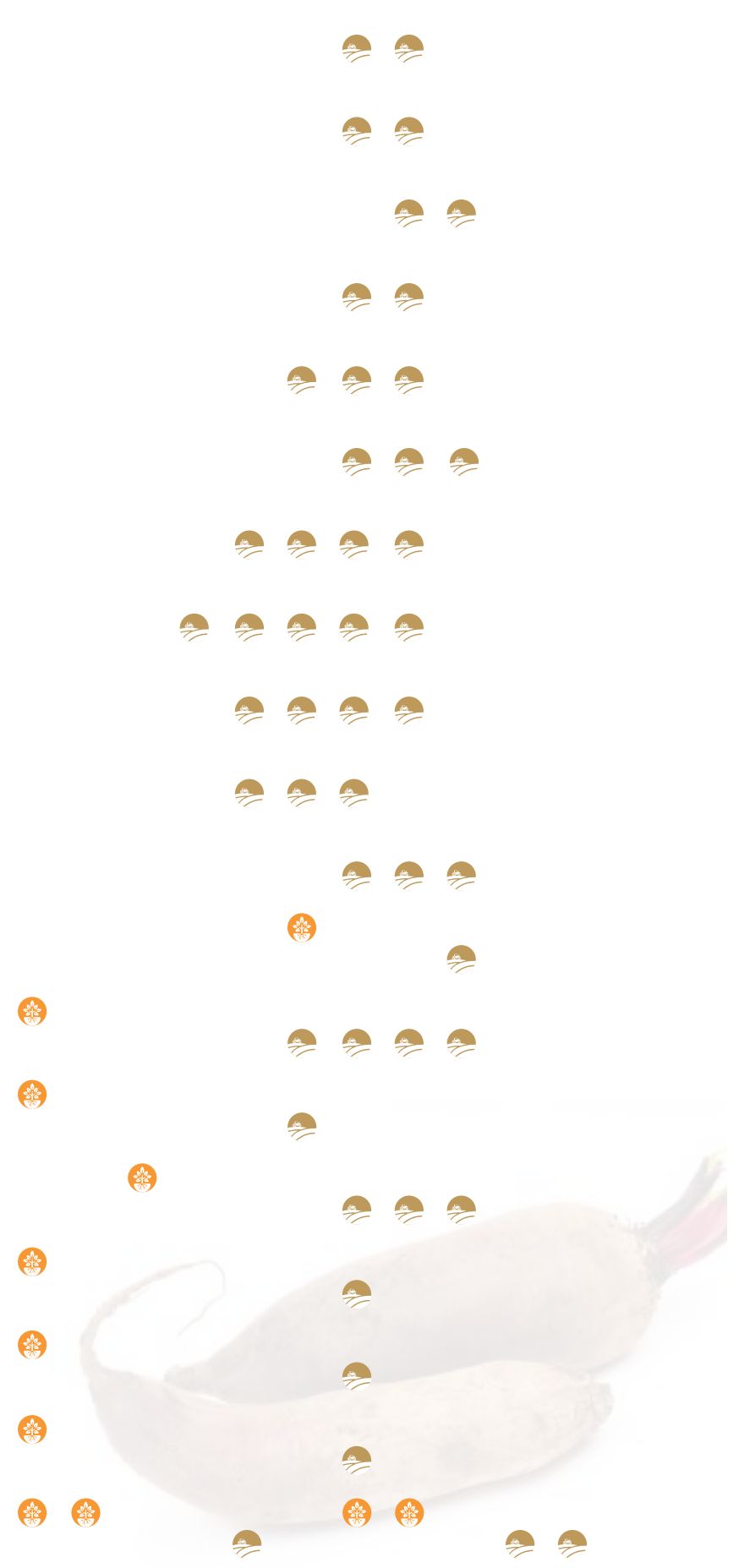
Condiments

Local Name	Scientific Name	Planting/ Harvesting
Pudina	*Mentha viridis*	Planting
		Harvesting
Dhania	*Coriandrum sativum*	Planting
		Harvesting
Shynrai Stem	*Curcuma longa*	Planting
		Harvesting
Kenbell	*Capsicum sp.*	Planting
		Harvesting
Ken Jrong	*Capsicum sp.*	Planting
		Harvesting
Rynsun	*Allium sativum*	Planting
		Harvesting
Soh krot (W)	*Smilax glaucophylla*	Planting
		Harvesting

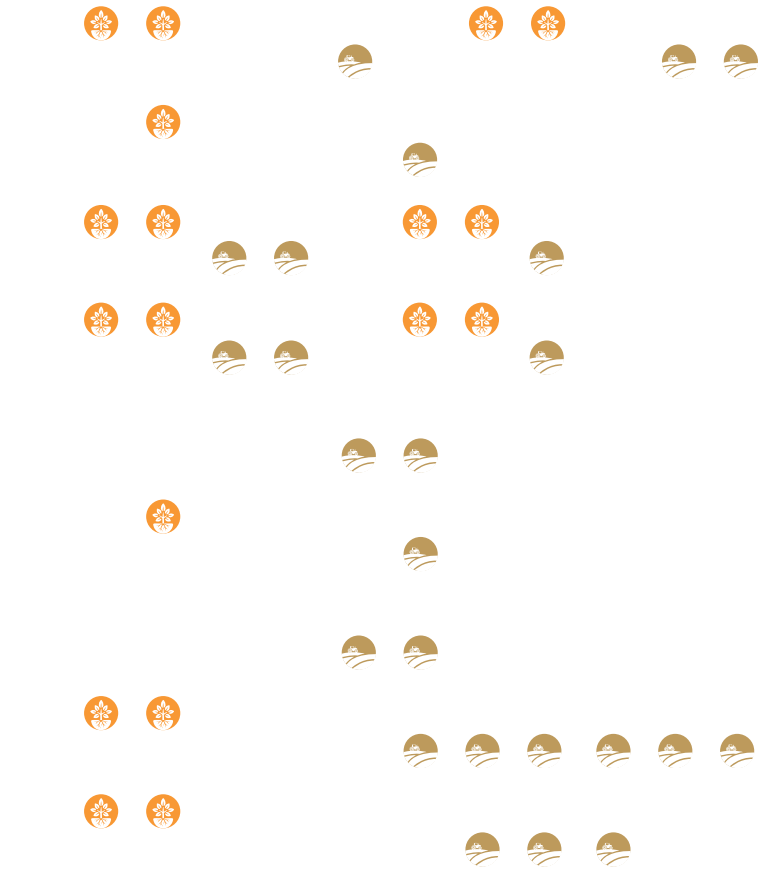
Other Vegetables

Local Name	Scientific Name	Planting/ Harvesting
Tit Tung (W)	*Lactarius volemus*	Planting
		Harvesting
Tit Stem/Tit Tynrai (W)	*Craterellus odoratus*	Planting
		Harvesting
Tit Tangrai	*NA*	Planting
		Harvesting
Tit Snier Blang (W)	*NA*	Planting
		Harvesting
Tit Tnaw Syiar (Stem/Lieh) (W)	*Clavulina sp.*	Planting
		Harvesting

Tit Doh (W)	*Lactarius volemus*	Planting / Harvesting
Tit Dud (W)	*NA*	Planting / Harvesting
Tit Kdait (W)	*Tricholoma viridiolivaceum*	Planting / Harvesting
Tit LbongHati (W)	*Ramaria sp.*	Planting / Harvesting
Tit Eit Masi (W)	*NA*	Planting / Harvesting
Tit Khoh/ Tyndong (W)	*Gomphus floccosus*	Planting / Harvesting
Tit Tah (W)	*NA*	Planting / Harvesting
Tit Sia (W)	*NA*	Planting / Harvesting
Tit Sopjat (W)	*NA*	Planting / Harvesting
Soh Khah (W)	*NA*	Planting / Harvesting
Soh Pen (W)	*Eriosema himalaicum*	Planting / Harvesting
Kubi	*Brassica oleracea var. capitata*	Planting / Harvesting
Jyllang	*Allium tuberosum*	Planting / Harvesting
Pathaw Risang	*Cucurbita sp.*	Planting / Harvesting
Soh Thliem	*Gomphogyne cissiformis*	Planting / Harvesting
Biskot Lieh	*Sechium edule*	Planting / Harvesting
Biskot Shiah	*Sechium edule*	Planting / Harvesting
Biskot Iong	*Sechium edule*	Planting / Harvesting
Muli lieh	*Raphanus sativus*	Planting / Harvesting



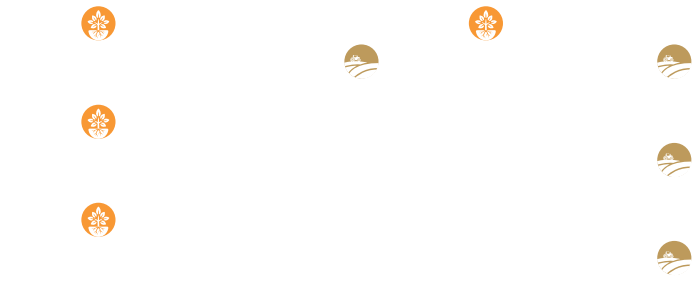
Local Name	Scientific Name	Planting/ Harvesting
Muli saw	*Raphanus sativus*	Planting / Harvesting
Sohkhia Khasi	*Cucumis sativus*	Planting / Harvesting
Piat	*Allium cepa*	Planting / Harvesting
Sohlakum	*Brassica rapa subsp. rapa*	Planting / Harvesting
Pashor kait (Siar kait)	*Musa paradisiaca*	Planting / Harvesting
Sohkhia Khnai	*Oxalis corniculata*	Planting / Harvesting
Syntiew jalymmut (W)	*NA*	Planting / Harvesting
Pathaw thohriew	*Cucurbita maxima*	Planting / Harvesting
Syntiew pathaw	*Cucurbita maxima*	Planting / Harvesting



Pulses

Local Name	Scientific Name	Planting/ Harvesting
Presbin	*Phaseolus vulgaris*	Planting / Harvesting
Ri Phyrngop	*Phaseolus vulgaris*	Planting / Harvesting
Ri Lyngknap Saw	*NA*	Planting / Harvesting
Ri Lyngknap Jyrngam	*NA*	Planting / Harvesting
Ri Ran/Majai	*Vicia faba*	Planting / Harvesting
Motor Shana	*Pisum sativum*	Planting / Harvesting
Motor Heh	*Pisum sativum*	Planting / Harvesting

Motor Ri	*Pisum sativum*	Planting / Harvesting
Rymbai Ja	*Vigna umbellata*	Planting / Harvesting
Rymbai Ktung	*Glycine max*	Planting / Harvesting

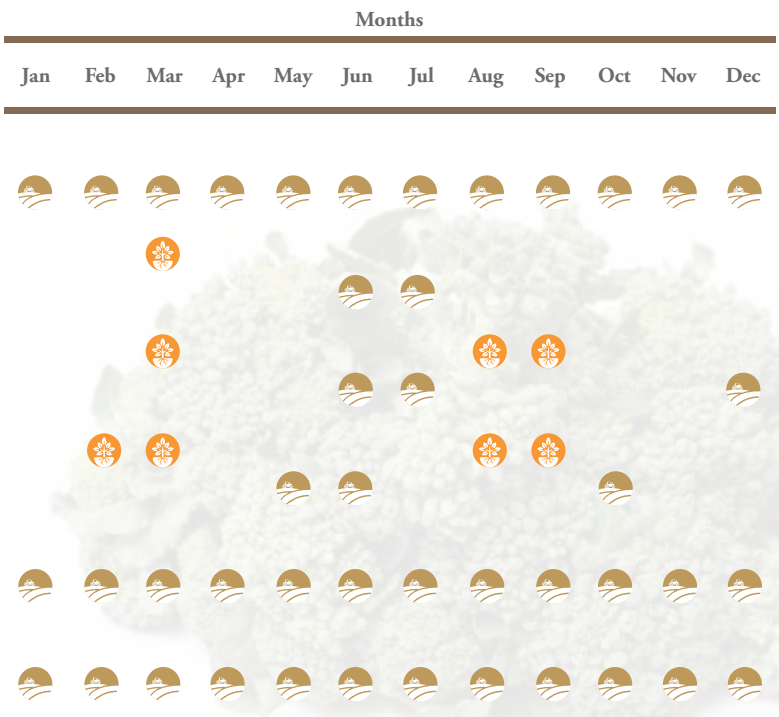


Nuts and Seeds

Local Name	Scientific Name	Planting/ Harvesting
Soh Ot Heh (W)	*Castanopsis indica*	Planting / Harvesting
Soh Ot rit (W)	*Castanopsis indica*	Planting / Harvesting
Neilieh	*Perilla frutescens*	Planting / Harvesting
Shyieng Pathaw	*Cucurbita maxima*	Planting / Harvesting
Shyieng Sohphie	*Myrica esculenta*	Planting / Harvesting

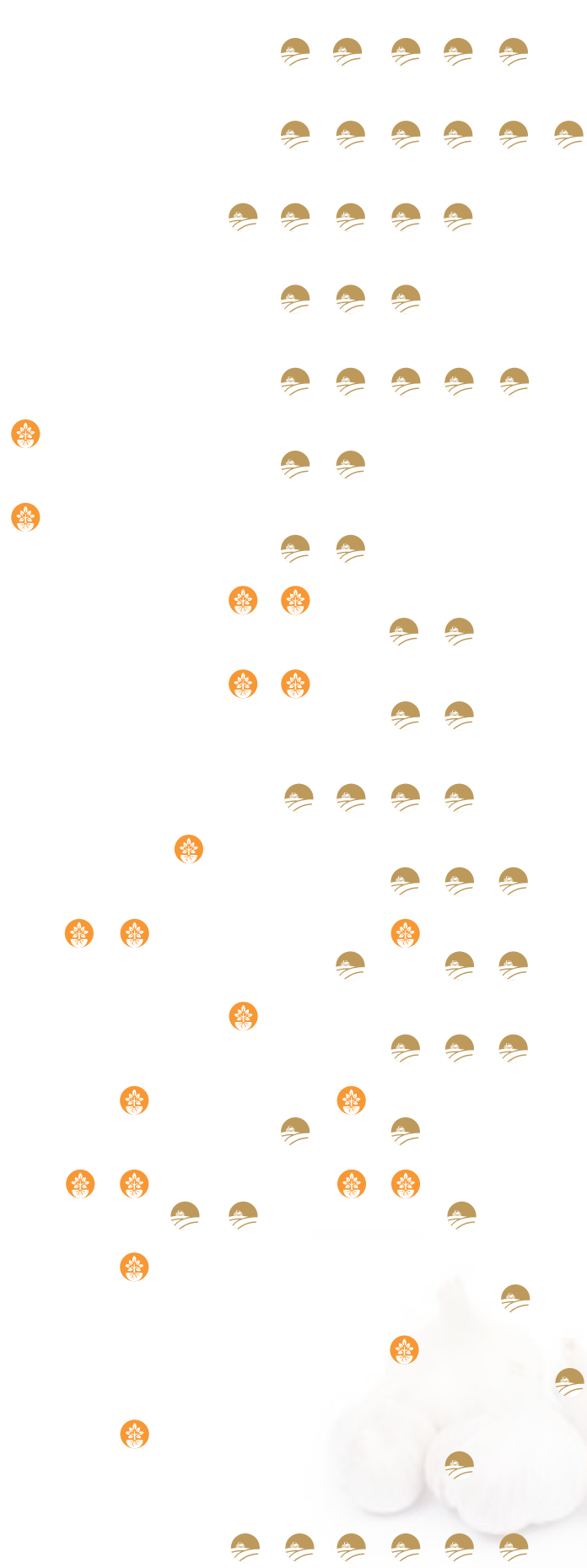
Green Leafy Vegetables

Local Name	Scientific Name	Planting/ Harvesting
Jaud (W)	*Allium hookeri*	Planting / Harvesting
Sla phul	*Brassica oleracea var. botrytis*	Planting / Harvesting
Salat	*Lactuca sativa*	Planting / Harvesting
Tyrso	*Brassica juncea*	Planting / Harvesting
Jamyrdoh (W)	*Houttuynia cordata*	Planting / Harvesting
Jatira (W)	*Oenanthe linearis*	Planting / Harvesting



Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bat Pyllon (W)	*Centella asiatica*	Planting / Harvesting						H	H	H	H	H		
Tyrkhang Iong (W)	*Diplazium esculentum*	Planting / Harvesting					H							
Jaiing	*Brassica nigra*	Planting / Harvesting			P	P		H	H					
Jathang (W)	*Neilla thyrsiflora*	Planting / Harvesting								H	H			
Jatwad (W)	*NA*	Planting / Harvesting		H	H			H	H					
Jawieh (W)	*NA*	Planting / Harvesting					H	H	H	H	H	H	H	
Latyrdop (W)	*NA*	Planting / Harvesting						H	H					
Jabuit (W)	*Polygonum muricatum*	Planting / Harvesting					H	H						
Jajew Khyndew (W)	*NA*	Planting / Harvesting					H	H	H	H				
Jajew Rben (W)	*NA*	Planting / Harvesting						H	H	H	H	H	H	H
Jali (W)	*Gynura nepalensis*	Planting / Harvesting							H	H	H			
JaKhria (W)	*Rhynchotechum ellipticum*	Planting / Harvesting						H	H	H	H			
Jalynniar (W)	*Sonchus arvensis*	Planting / Harvesting						H	H	H	H			
Jalynnoh (W)	*Polygonum orientale*	Planting / Harvesting						H	H	H	H			
Jahenwet/ Jhurswet (W)	*NA*	Planting / Harvesting						H	H	H	H			
Jangew Mawria/ Tangduma (W)	*NA*	Planting / Harvesting						H	H					
Jajer (W)	*NA*	Planting / Harvesting				H	H	H	H					

Jabal (W)	*NA*	Planting / Harvesting
Jajew Skhor Blang (W)	*NA*	Planting / Harvesting
Japung (W)	*Alternanthera philoxeroids*	Planting / Harvesting
Jasim (W)	*NA*	Planting / Harvesting
Jajew Kynih Syiar/ Jajew maw (W)	*Pothos curtizii*	Planting / Harvesting
Sla Wang	*Colocasia esculenta*	Planting / Harvesting
Sla Phankaro	*Ipomea batatas*	Planting / Harvesting
Sla Pathaw	*Cucurbita maxima*	Planting / Harvesting
Sla Biskot	*Sechium edule*	Planting / Harvesting
Sla Byrthti (W)	*NA*	Planting / Harvesting
Jhur Thlieh	*Gomphogyne cissiformis*	Planting / Harvesting
Sla Muli	*Raphanus sativus*	Planting / Harvesting
Sla Beet	*Beta vulgaris*	Planting / Harvesting
Sla Sohlakum	*Brassica rapa subsp. rapa*	Planting / Harvesting
Sla Piat	*Allium cepa*	Planting / Harvesting
Sla Kajor	*Daucus carota subdp. sativus*	Planting / Harvesting
Sla Rynsun	*Allium sativum*	Planting / Harvesting
Sla Jyllang	*Allium tuberosum*	Planting / Harvesting
Riew kai (W)	*NA*	Planting / Harvesting



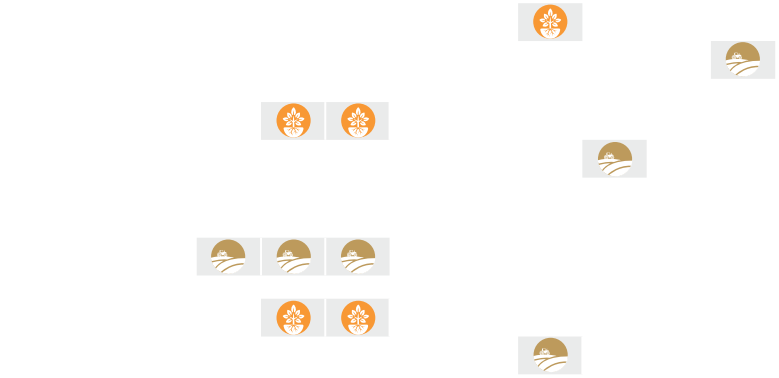
Other fruits

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sohshiah (W)	*Rubus ellipticus*	Planting / Harvesting						●	●					
Sohkhawiong (W)	*Rubus lasiocarpus*	Planting / Harvesting						●	●					
Sohpdung Ksuit (W)	*NA*	Planting / Harvesting	●	●	●	●	●	●	●	●	●	●	●	●
Sohryngkham (W)	*Vaccinium graffithianum*	Planting / Harvesting							●	●				
Sohphie Bah (W)	*Myrica esculenta*	Planting / Harvesting				●	●	●	●					
Sohphie Nam (W)	*Myrica nagi*	Planting / Harvesting				●	●	●	●					
Sohphie Liya (W)	*Myrica sp.*	Planting / Harvesting				●	●	●	●					
Sohlang Ja (W)	*NA*	Planting / Harvesting										●	●	
Sohshur (W)	*Pyrus pashia*	Planting / Harvesting						●	●					
Sohkhyllam (W)	*Elaeocarpus prunifolius*	Planting / Harvesting				●								
Sohlyngkait (W)	*Holboellia latifolia*	Planting / Harvesting							●	●				
Sohkynphor Shrieh	*Citrus dimorphocarpa*	Planting / Harvesting					●	●				●	●	
Soh khlur (W)	*Elaegnus pyriformis*	Planting / Harvesting											●	●
Soh Pai Risang (W)	*NA*	Planting / Harvesting										●		
Soh Um (W)	*Syzygium cumini*	Planting / Harvesting			●	●								
Soh kjup (W)	*NA*	Planting / Harvesting	●	●										●
Soh Lapong (W)	*Ficus gibbosa*	Planting / Harvesting										●		

Local Name	Scientific Name	Planting/ Harvesting
Kait Iong	*Musa sp.*	Planting / Harvesting
Kait Mon	*Musa paradisiaca*	Planting / Harvesting
Soh Jew Khasi	*Citrus aurantium*	Planting / Harvesting
Sohlang Dkhur (W)	*Morus australis*	Planting / Harvesting
Soh Phoh Nongkhlaw	*Pyrus communis*	Planting / Harvesting

Vitamin A Rich Plants

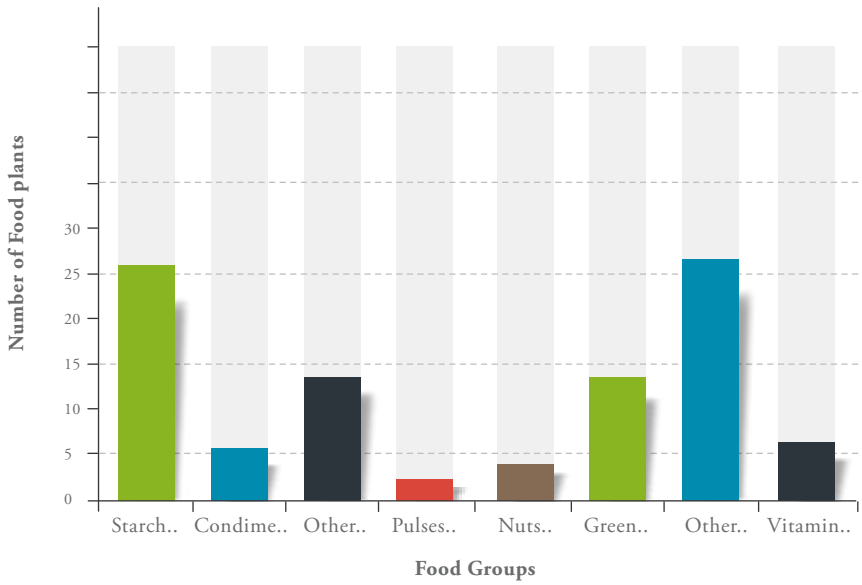
Local Name	Scientific Name	Planting/ Harvesting
Soh Phareng	*Prunus persica*	Planting / Harvesting
Soh Brab	*Passiflora edulis*	Planting / Harvesting
Sohshan (W)	*Duchesnea indica*	Planting / Harvesting
Sohbrab Khlaw (W)	*Passiflora edulis*	Planting / Harvesting
Kajor	*Daucus carota subdp. sativus*	Planting / Harvesting
Pathaw Bah/Heh	*Cucurbita maxima*	Planting / Harvesting
Sohbaingon dieng Saw	*Cyphomandra batacea*	Planting / Harvesting
Sohbaingon dieng Stem	*Cyphomandra batacea*	Planting / Harvesting



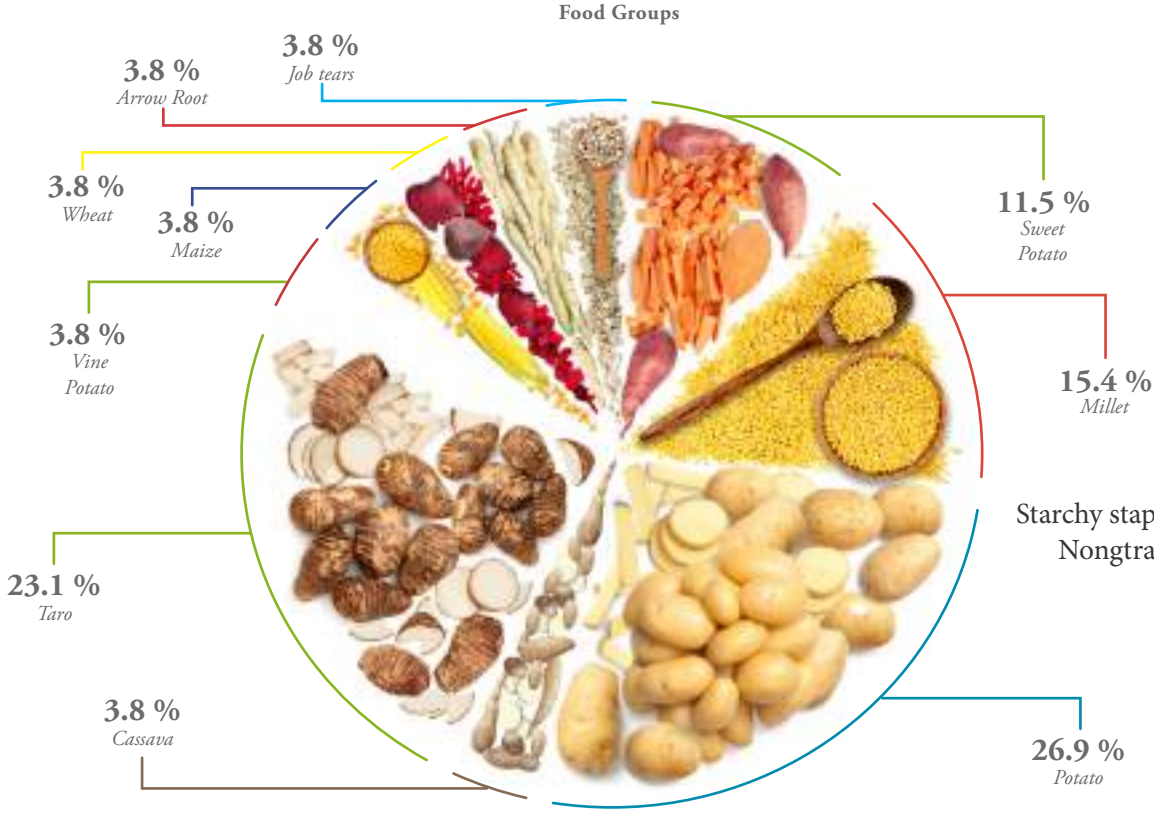
N.B: *W: Wild plant; NA: Not available*

Nongtraw

Nongtraw recorded a total of 92 food plants from the local landscape. Out of this, the highest number of plants (>25%) are found among the Other Fruits category followed very closely by Starchy Staples, more than 25 food plants in both the categories. The least number of food plants (<5%) are from, Pulses Nuts and Seeds and Condiments who have less than 5 food plants in their respecitve groups. Starchy Staples constitutes around 30% of the total food plants. Within this particular food group, again, ten different species of food plants, viz., potato, maize, sweet potato, taro, millet, tapioca, arrow root, wheat and vine potato, are found. In general, all the plant based food groups are available in the community.



Agrobiodiversity in Nongtraw



Starchy staples in Nongtraw

Starchy Staples

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phankaro Lieh	*Ipomea batatas*	Planting							●					
		Harvesting							●					
Phan Lyniong	*Solanum sp.*	Planting							●					
		Harvesting							●					
Phan Heh Sla	*Solanum sp.*	Planting							●					
		Harvesting							●					
Krai Truh	*Eleusine coracana*	Planting				●								
		Harvesting											●	
Krai Lon	*NA*	Planting				●								
		Harvesting											●	
Krai Jasheh	*NA*	Planting				●								
		Harvesting											●	
Krai Thohriaw	*NA*	Planting				●								
		Harvesting											●	
Phan Myngngor/ Phan Joyti	*Solanum sp.*	Planting			●									
		Harvesting						●						
Phan Saw	*Solanum tuberosum*	Planting			●									
		Harvesting							●					
Phan Imslem	*Solanum sp.*	Planting			●									
		Harvesting						●						
Phan Sawhoiń	*Solanum sp.*	Planting			●									
		Harvesting						●						
Phan Lyngseng	*Solanum sp.*	Planting			●									
		Harvesting						●						
Phan Jata	*Solanum sp.*	Planting			●									
		Harvesting						●						
Phan Shriew	*NA*	Planting			●									
		Harvesting						●						
Phandieng	*Manihot esculenta*	Planting			●									
		Harvesting								●				
Shriew Lieh	*Colocasia/Alocasia/ Remutsia sp.*	Planting				●								
		Harvesting												●
Shriew Saw	*Colocasia/Alocasia/ Remutsia sp.*	Planting				●								
		Harvesting												●

Shriew Phangong	*Colocasia/Alocasia/ Remutsia sp.*	Planting	
		Harvesting	
Shriew Lar	*Colocasia/Alocasia/ Remutsia sp.*	Planting	
		Harvesting	
Shriew Khnapblang	*Alocasia macrorrhiza*	Planting	
		Harvesting	
Shriew Lyngkait	*Colocasia/Alocasia/ Remutsia sp.*	Planting	
		Harvesting	
Kew	*Triticum aestivum*	Planting	
		Harvesting	
Sohlah	*Ipomoea racemosa*	Planting	
		Harvesting	
Riewhadem	*Zea mays*	Planting	
		Harvesting	
Alarut	*Maranta arundinacea*	Planting	
		Harvesting	
Soh riew	*Coix lachryma jobi*	Planting	
		Harvesting	

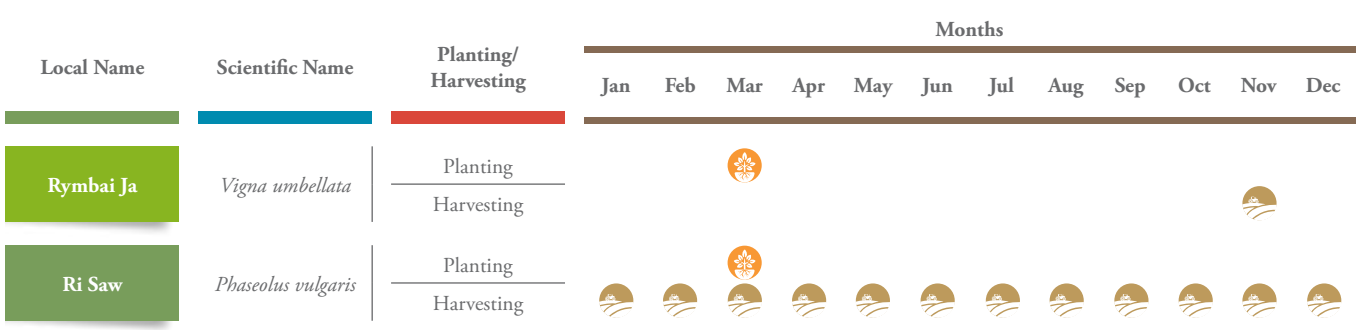
Condiments

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sying Bah	*Zingiber officinale*	Planting												
		Harvesting												
Sohmynken	*Capsicum frutescens*	Planting												
		Harvesting												
Pudina (W)	*Mentha viridis*	Planting												
		Harvesting												
Shynrai	*Curcuma longa*	Planting												
		Harvesting												

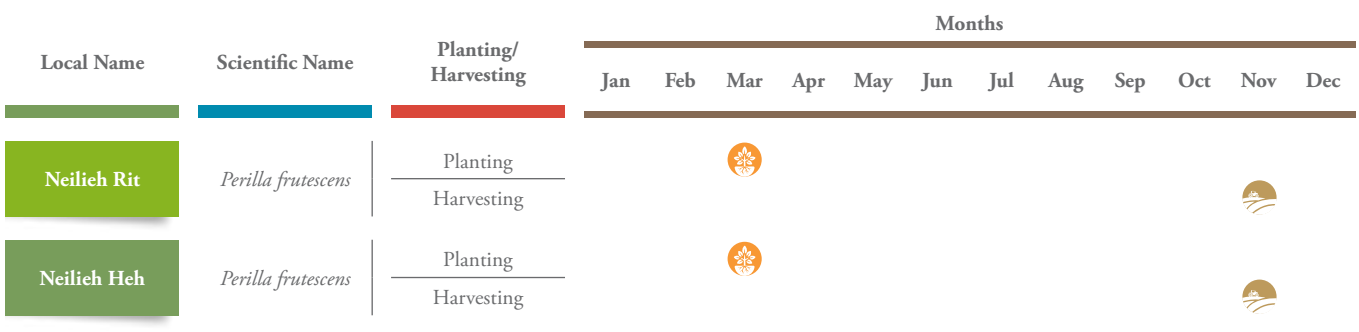
Other Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sohlakum	*Brassica rapa subsp. rapa*	Planting												
		Harvesting												
Sohkhia	*Cucumis sativus*	Planting												
		Harvesting												

Pulses



Nuts and Seeds



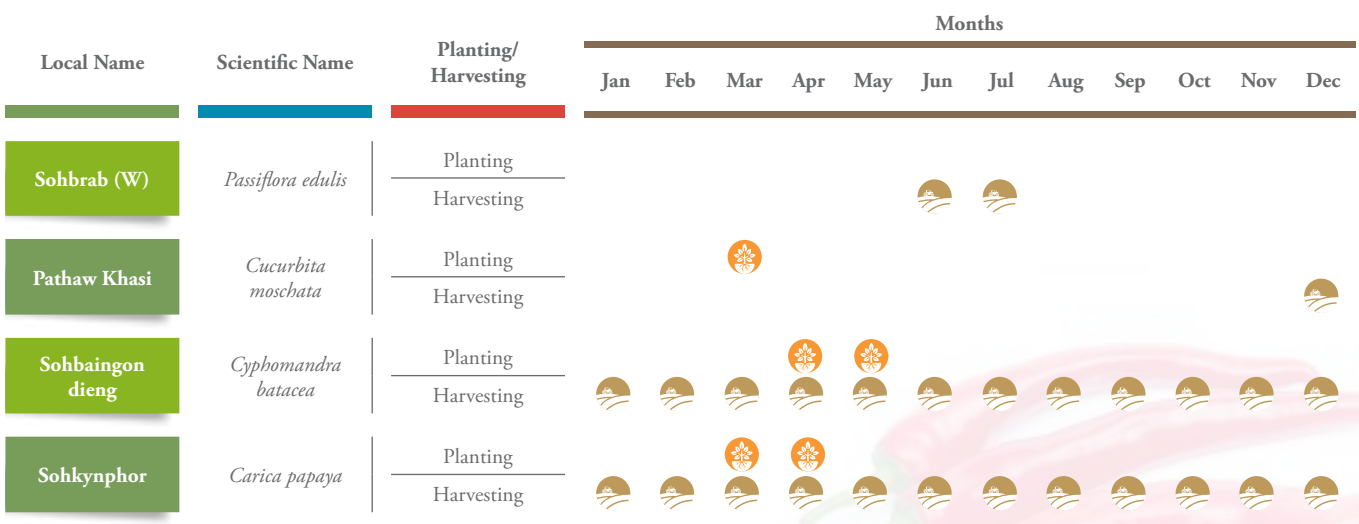
Sohot (W)	*Castanopsis indica*	Planting / Harvesting	Harvesting: Jan, Nov, Dec

Green Leafy Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months: Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jaiing	*Brassica nigra*	Planting			Mar									
		Harvesting					May							
Tyrso	*Brassica juncea*	Planting			Mar						Sep			
		Harvesting						Jun						Dec
Jaud	*Allium hookeri*	Planting				Apr								
		Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jamyrdoh	*Houttuynia cordata*	Planting				Apr								
		Harvesting						Jun	Jul	Aug	Sep	Oct		
Jali (W)	*Gynura nepalensis*	Planting												
		Harvesting							Jul	Aug	Sep			
Jarain (W)	*Fagopyrum dibotrys*	Planting												
		Harvesting							Jul	Aug	Sep			
Jakhria (W)	*Rhynchotechum ellipticum*	Planting												
		Harvesting						Jun	Jul	Aug	Sep			
Tangduma (W)	*NA*	Planting												
		Harvesting						Jun	Jul					
Tyrkhang (W)	*Diplazium esculentum*	Planting												
		Harvesting					May							
Japongdieng (W)	*NA*	Planting												
		Harvesting				Apr	May							
Jajew (W)	*Hibiscus sabdariffa*	Planting												
		Harvesting					May	Jun	Jul	Aug	Sep			
Sla Sohshiat (W)	*NA*	Planting												
		Harvesting				Apr	May							
Sla Tyrkain (W)	*NA*	Planting												
		Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Other Fruits

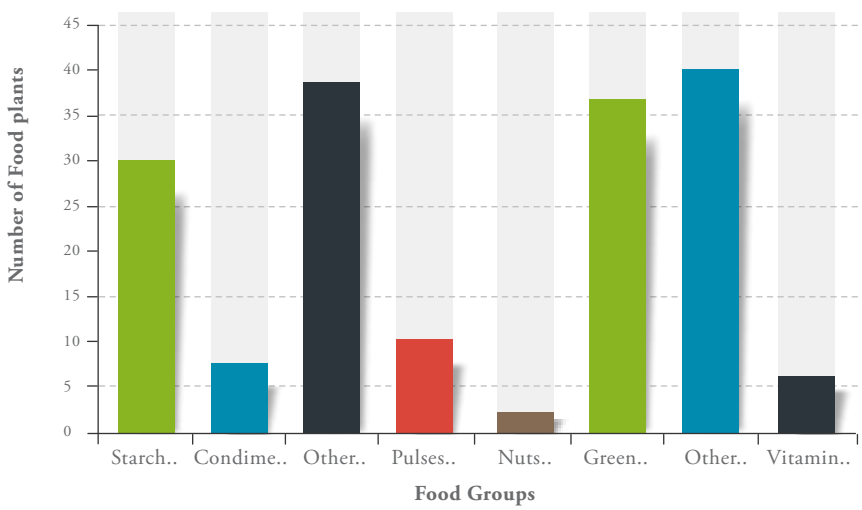
Vitamin A Rich Plants



N.B: *W: Wild plant; NA: Not available*

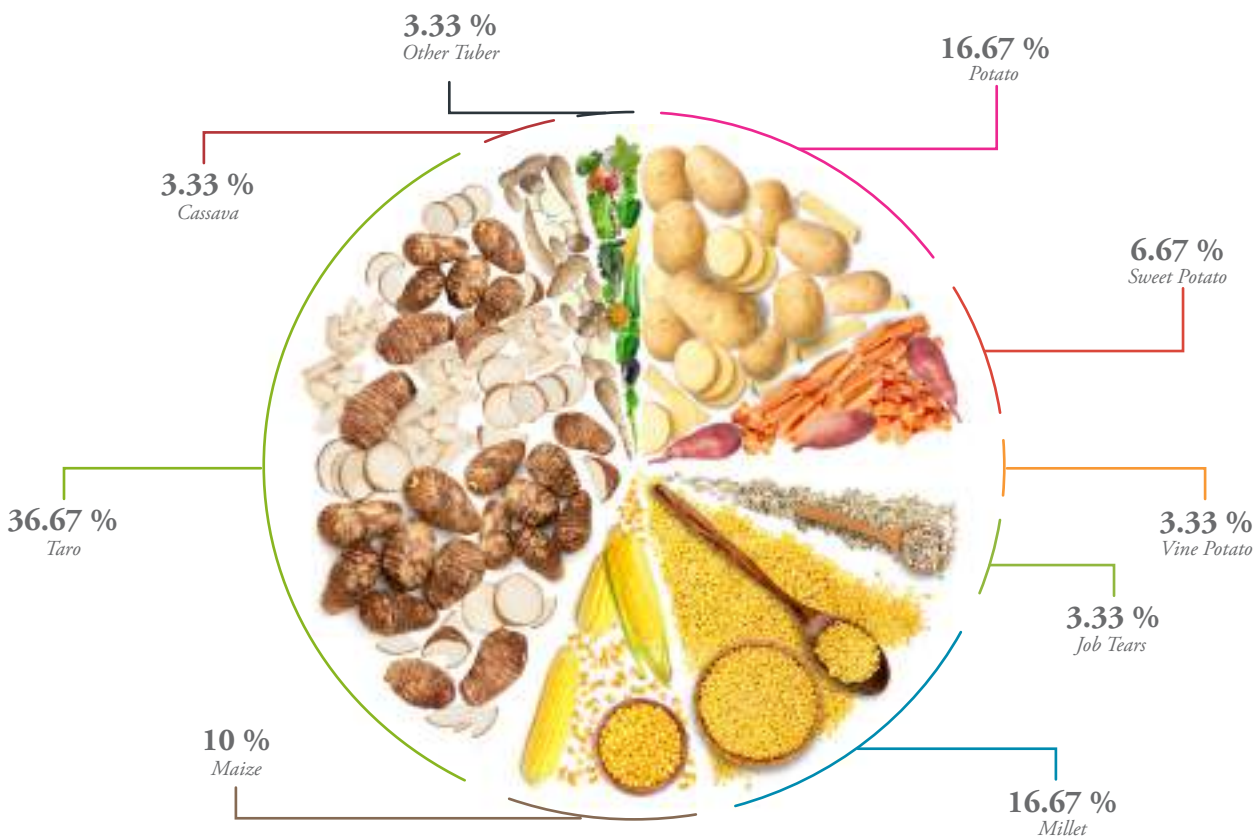
Laitsohpliah

Laitsohpliah recorded a total of 169 food plants from the local landscape. Out of this, the highest number of plants (>20%) are found among the Other Fruits, Other Vegetables categories followed very closely by Green Leafy Vegetables, more than 35 food plants in the all the three categories. The least number of food plants (<5%) are from Nuts and Seeds, Condiments and Vitamin A Rich plants who have less than 10 food plants in their respective groups. Starchy Staples have just over 15% of the total food plants. Within this particular food group though eight different species of food plants, viz., potato, maize, sweet potato, taro, vine potato, millet, job tears, and tapioca, are found. In general, all the plant based food groups are available in the community.



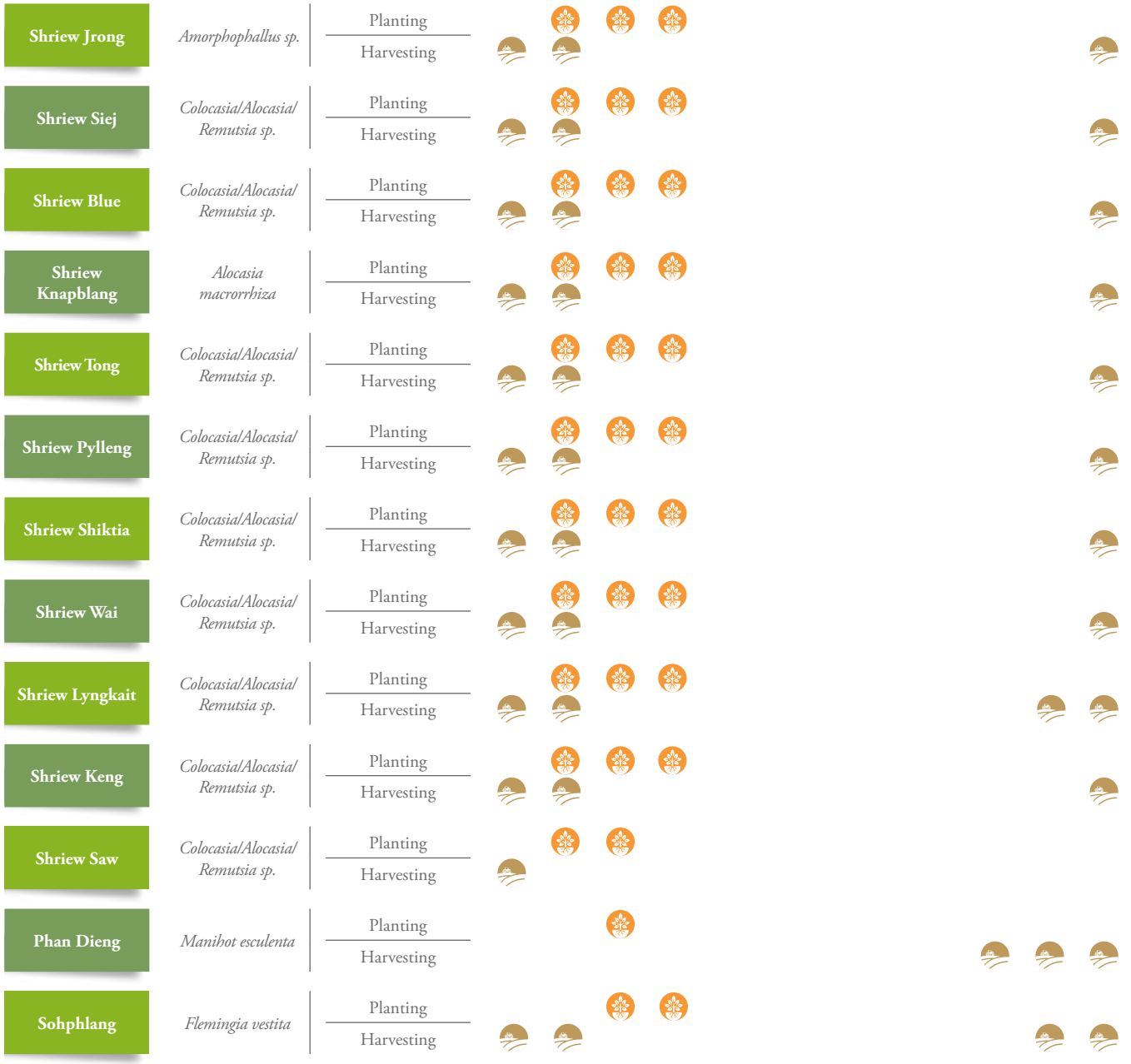
Agrobiodiversity in Laitsohpliah

Starchy staples in
Laitsohpliah



Starchy Staples

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phan Lieh	*Solanum tuberosum*	Planting		●	●									
		Harvesting						◐	◐	◐	◐	◐	◐	◐
Phan Saw	*Solanum tuberosum*	Planting		●	●									
		Harvesting						◐	◐	◐	◐	◐	◐	◐
Phan Syntiew	*Solanum sp.*	Planting		●	●									
		Harvesting						◐	◐	◐	◐	◐	◐	◐
Phan Imdieng	*Solanum sp.*	Planting		●	●									
		Harvesting	◐					◐	◐	◐	◐	◐	◐	◐
Phan San Minit	*Solanum tuberosum*	Planting		●	●									
		Harvesting						◐	◐	◐	◐	◐	◐	◐
Phan Karo Saw	*Ipomea batatas*	Planting					●	●						
		Harvesting											◐	
Phan Karo Lieh	*Ipomea batatas*	Planting					●	●						
		Harvesting											◐	
Sohlah	*Ipomoea racemosa*	Planting		●	●	●								
		Harvesting	◐	◐										◐
Sohriew	*Coix lachryma jobi*	Planting		●	●	●								
		Harvesting	◐	◐										◐
Krai Truh	*Eleusine coracana*	Planting		●	●									
		Harvesting											◐	◐
Krai Jasheh	*Eleusine coracana*	Planting		●	●									
		Harvesting											◐	◐
Krai Lon	*NA*	Planting		●	●									
		Harvesting											◐	◐
Krai Soh	*NA*	Planting		●	●									
		Harvesting											◐	◐
Krai Shan	*Paspalum sanguinale*	Planting		●	●									
		Harvesting											◐	◐
Riew Hadem Lieh	*Zea mays*	Planting		●	●	●								
		Harvesting								◐	◐			
Riew Hadem Stem	*Zea mays*	Planting		●	●	●								
		Harvesting								◐	◐			
Riew Hadem Saw	*Zea mays*	Planting		●	●	●								
		Harvesting								◐	◐			

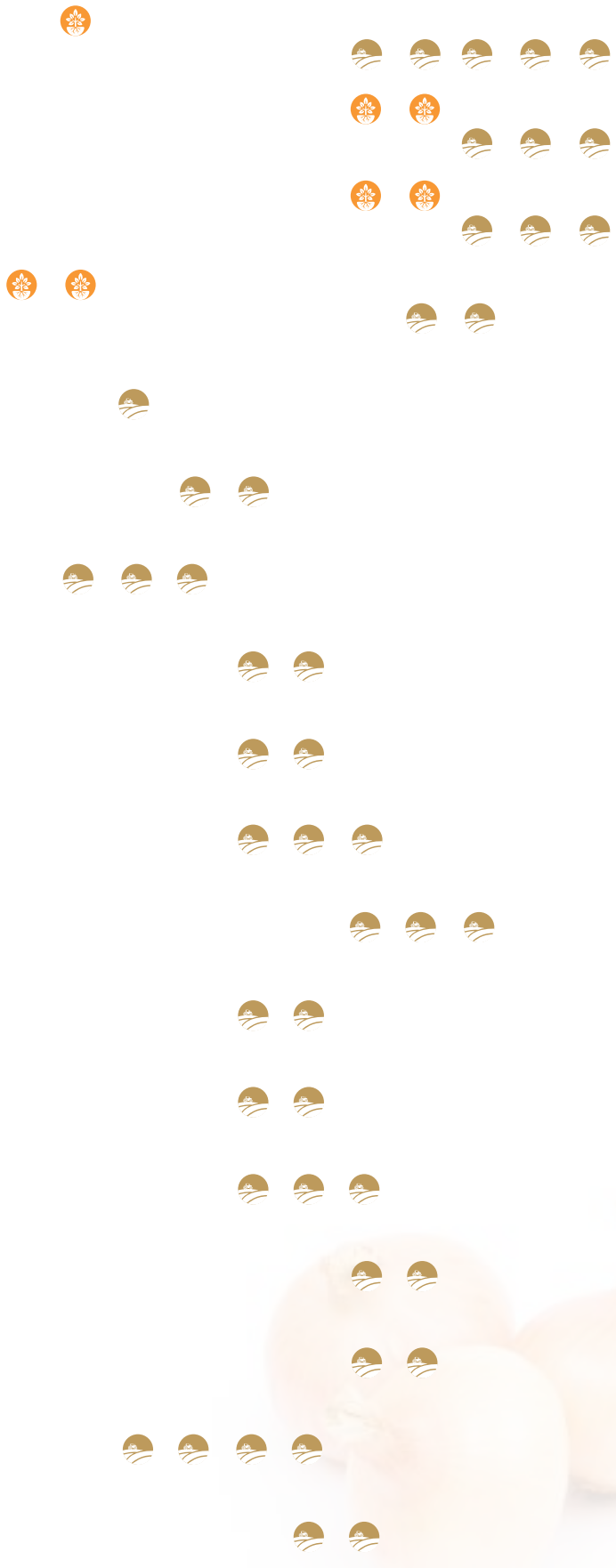


Condiments

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pudina (W)	*Mentha viridis*	Planting												
		Harvesting												
Dhania	*Coriandrum sativum*	Planting												
		Harvesting												
Sying Bah	*Zingiber officinale*	Planting												
		Harvesting												

Other Vegetables

Sohlakum	*Brassica rapa subsp. rapa*	Planting / Harvesting
Muli Lieh	*Raphanus sativus*	Planting / Harvesting
Muli Saw	*Raphanus sativus*	Planting / Harvesting
Tishub	*NA*	Planting / Harvesting
Tit Siaw (W)	*NA*	Planting / Harvesting
Tit Kor (W)	*NA*	Planting / Harvesting
Tit Tung (W)	*Lactarius volemus*	Planting / Harvesting
Tit Stem/Tit Tynrai (W)	*Craterellus odoratus*	Planting / Harvesting
Tit Tangrai (W)	*NA*	Planting / Harvesting
Tit Snier Blang (W)	*NA*	Planting / Harvesting
Tit Tnaw Syiar (Stem/Lieh) (W)	*Clavulina sp.*	Planting / Harvesting
Tit Doh (W)	*Lactarius volemus*	Planting / Harvesting
Tit Dud (W)	*NA*	Planting / Harvesting
Tit Kdait (W)	*Tricholoma viridiolivaceum*	Planting / Harvesting
Tit Tyngab (W)	*Laccaria lateritia*	Planting / Harvesting
Tit Lbonghati (W)	*Ramaria sp.*	Planting / Harvesting
Tit Eit Masi (W)	*NA*	Planting / Harvesting
Tit Khoh/ Tyndong (W)	*Gomphus floccosus*	Planting / Harvesting



Local Name	Scientific Name	Planting/ Harvesting
Tit Tah (W)	*NA*	Planting / Harvesting
Tit Sia (W)	*NA*	Planting / Harvesting
Tit Sohpailen (W)	*NA*	Planting / Harvesting
Tit Sopjat (W)	*NA*	Planting / Harvesting
Tit Oyster	*Pleurotus sp*	Planting / Harvesting
Soh Khah (W)	*NA*	Planting / Harvesting
Soh Pen (W)	*Eriosema himalaicum*	Planting / Harvesting
Pashor Kait (W)	*Musa paradisiaca*	Planting / Harvesting
Siar Kait (W)	*Musa paradisiaca*	Planting / Harvesting

Pulses

Months: Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

Local Name	Scientific Name	Planting/ Harvesting
Presbin	*Phaseolus vulgaris*	Planting / Harvesting
Ri Phyrngop	*Phaseolus vulgaris*	Planting / Harvesting
Ri Lyngknap Saw	*NA*	Planting / Harvesting
Ri Lyngknap Jyrngam	*NA*	Planting / Harvesting
Ri Ran/Majai	*Vicia faba*	Planting / Harvesting
Motor Heh	*Pisum sativum*	Planting / Harvesting
Motor Ri	*Pisum sativum*	Planting / Harvesting

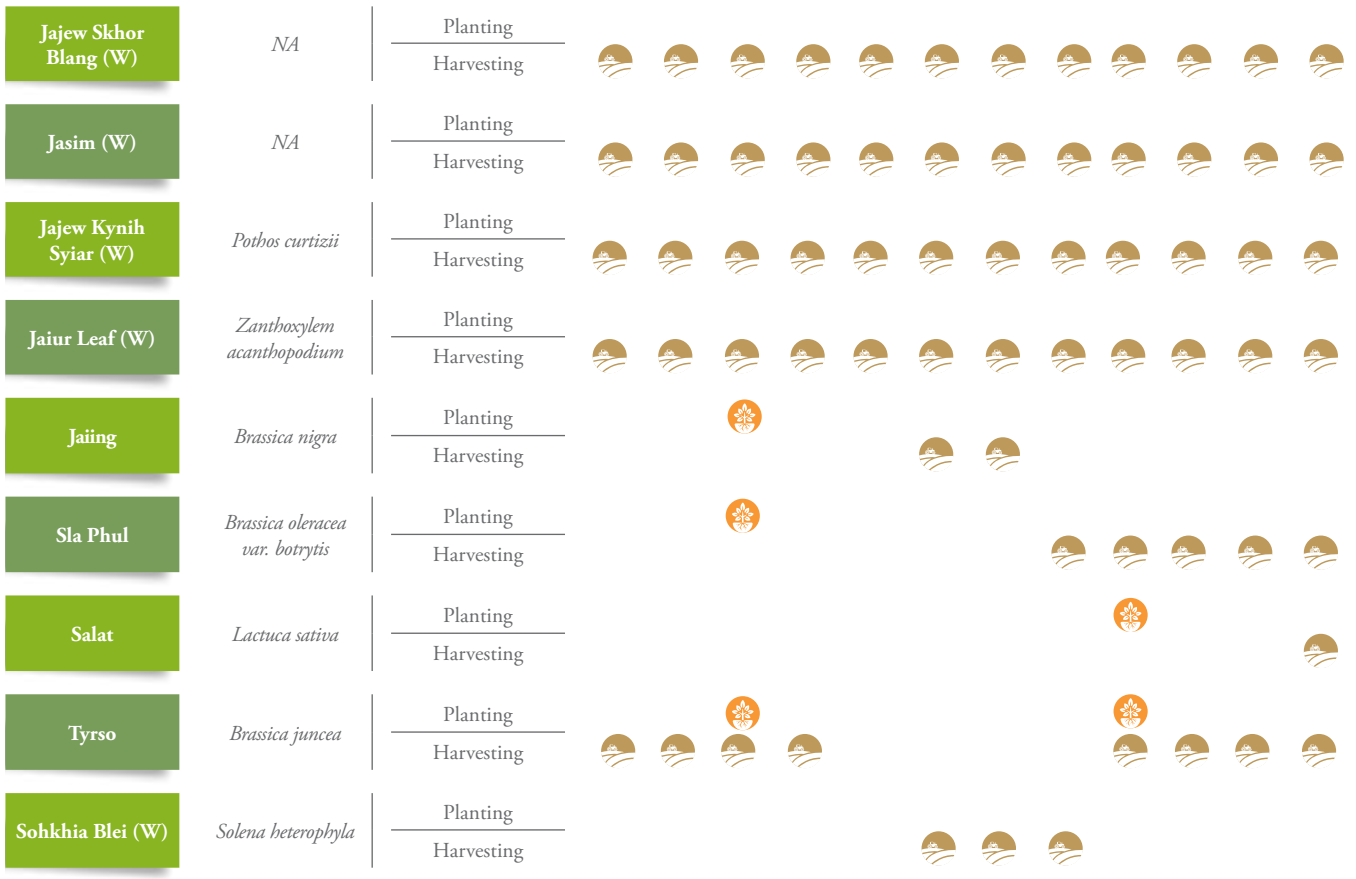
Nuts and Seeds

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Neilieh	*Perilla frutescens*	Planting												
		Harvesting												
Soh Ot (W)	*Castanopsis indica*	Planting												
		Harvesting												

Green Leafy Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jaud (W)	*Allium hookeri*	Planting												
		Harvesting												
Jamyrdoh (W)	*Houttuynia cordata*	Planting												
		Harvesting												
Jatira (W)	*Oenanthe linearis*	Planting												
		Harvesting												
Bat Pyllon (W)	*Centella asiatica*	Planting												
		Harvesting												
Tyrkhang Iong (W)	*Diplazium esculentum*	Planting												
		Harvesting												
Jajew Heh Sla (W)	*NA*	Planting												
		Harvesting												
Jathang (W)	*Neilla thyrsiflora*	Planting												
		Harvesting												
Jatwad (W)	*NA*	Planting												
		Harvesting												
Jawieh (W)	*NA*	Planting												
		Harvesting												
Jangew Kynthong (W)	*NA*	Planting												
		Harvesting												

Latyrdop (W)	*NA*	Planting / Harvesting	
Jabuit (W)	*Polygonum muricatum*	Planting / Harvesting	
Jajew Khyndew (W)	*NA*	Planting / Harvesting	
Jajew Rben (W)	*NA*	Planting / Harvesting	
Jajew Bsuh (W)	*NA*	Planting / Harvesting	
Jali (W)	*Gynura nepalensis*	Planting / Harvesting	
Jakhria (W)	*Rhynchotechum ellipticum*	Planting / Harvesting	
Jatira (W)	*Oenanthe linearis*	Planting / Harvesting	
Jangew Skei (W)	*NA*	Planting / Harvesting	
Jalynniar (W)	*Sonchus arvensis*	Planting / Harvesting	
Jalynnoh (W)	*Polygonum orientale*	Planting / Harvesting	
Jamiaw (W)	*Gentiana quadrifaria*	Planting / Harvesting	
Jahenwet (W)	*NA*	Planting / Harvesting	
Jangew Mawria (W)	*NA*	Planting / Harvesting	
Jajer (W)	*NA*	Planting / Harvesting	
Jabar (W)	*NA*	Planting / Harvesting	
Jatira Dkhar (W)	*NA*	Planting / Harvesting	
Jajew Shiliang (W)	*NA*	Planting / Harvesting	



Other Fruits

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sohshiah (W)	*Rubus ellipticus*	Planting / Harvesting												
Sohkhawiong (W)	*Rubus lasiocarpus*	Planting / Harvesting												
Sohpdung Ksuit (W)	*NA*	Planting / Harvesting												
Sohryngkham (W)	*Vaccinium graffithianum*	Planting / Harvesting												
Sohphie Bah (W)	*Myrica esculenta*	Planting / Harvesting												
Sohphie Nam (W)	*Myrica nagi*	Planting / Harvesting												
Sohphie Liya (W)	*Myrica sp.*	Planting / Harvesting												
Sohlang Ja (W)	*NA*	Planting / Harvesting												


Sohshur (W)
Pyrus pashia
Planting
Harvesting
Sohkhyllam (W)
Elaeocarpus prunifolius
Planting
Harvesting
Sohlyngkait (W)
Holboellia latifolia
Planting
Harvesting
Sohphoh Khasi (W)
Docynia indica
Planting
Harvesting
Sohmad (W)
Citrus medica
Planting
Harvesting
Sohma (Mluh) (W)
Rhus chinensis
Planting
Harvesting
Soh Khlur (W)
Elaegnus pyriformis
Planting
Harvesting
Sohlang Eit Ksew (W)
NA
Planting
Harvesting
Soh Kyrsiew (W)
NA
Planting
Harvesting
Soh Pai Risang (W)
NA
Planting
Harvesting
Soh Um (W)
Syzygium cumini
Planting
Harvesting
Soh Lyngdhur (W)
Morus australis
Planting
Harvesting
Soh Lyngkjup (W)
NA
Planting
Harvesting
Soh Iong (W)
Prunus nepalensis
Planting
Harvesting
Soh Tylliang (W)
NA
Planting
Harvesting
Soh Lapong (W)
Ficus gibbosa
Planting
Harvesting
Soh Shiat (W)
NA
Planting
Harvesting
Soh Nep Bah (W)
Rubus rugosus
Planting
Harvesting
Soh Pdok (W)
Solanum torvum
Planting
Harvesting

Local Name	Scientific Name	Planting/ Harvesting
Soh Krot (W)	*Smilax glaucophylla*	Planting / Harvesting
Soh Phie Shiteng Jait (W)	*Myrica sp.*	Planting / Harvesting
Soh Priam (W)	*Psidium guajava*	Planting / Harvesting
Sohphoh Nongkhlaw (W)	*Pyrus communis*	Planting / Harvesting
Soh Plom (W)	*Prunus domestica*	Planting / Harvesting
Sohphoh Lakun (W)	*Pyrus communis*	Planting / Harvesting
Sohmyndong (W)	*NA*	Planting / Harvesting
Kait Iong (W)	*Musa sp.*	Planting / Harvesting
Kait Mon (W)	*Musa x paradisiaca*	Planting / Harvesting
Kait Khar (W)	*Musa sp.*	Planting / Harvesting
Kait Shyieng (W)	*Musa sp.*	Planting / Harvesting
Sohkynphor Shrieh (W)	*Citrus dimorphocarpa*	Planting / Harvesting

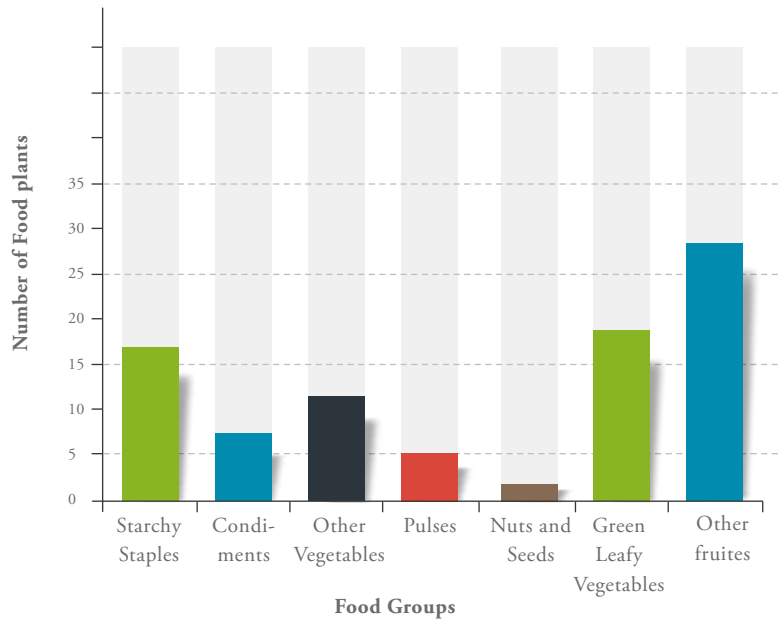
Vitamin A Rich Plants

Local Name	Scientific Name	Planting/ Harvesting	Months: Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sohshan (W)	*Duchesnea indica*	Planting / Harvesting												
Soh Phareng (W)	*Prunus persica*	Planting / Harvesting												
Soh Brab (W)	*Passiflora edulis*	Planting / Harvesting												
Sohbaingon Dieng (W)	*Cyphomandra batacea*	Planting / Harvesting												
Kajor	*Daucus carota subdp. sativus*	Planting / Harvesting												
Pathaw Bah/Heh	*Cucurbita maxima*	Planting / Harvesting												

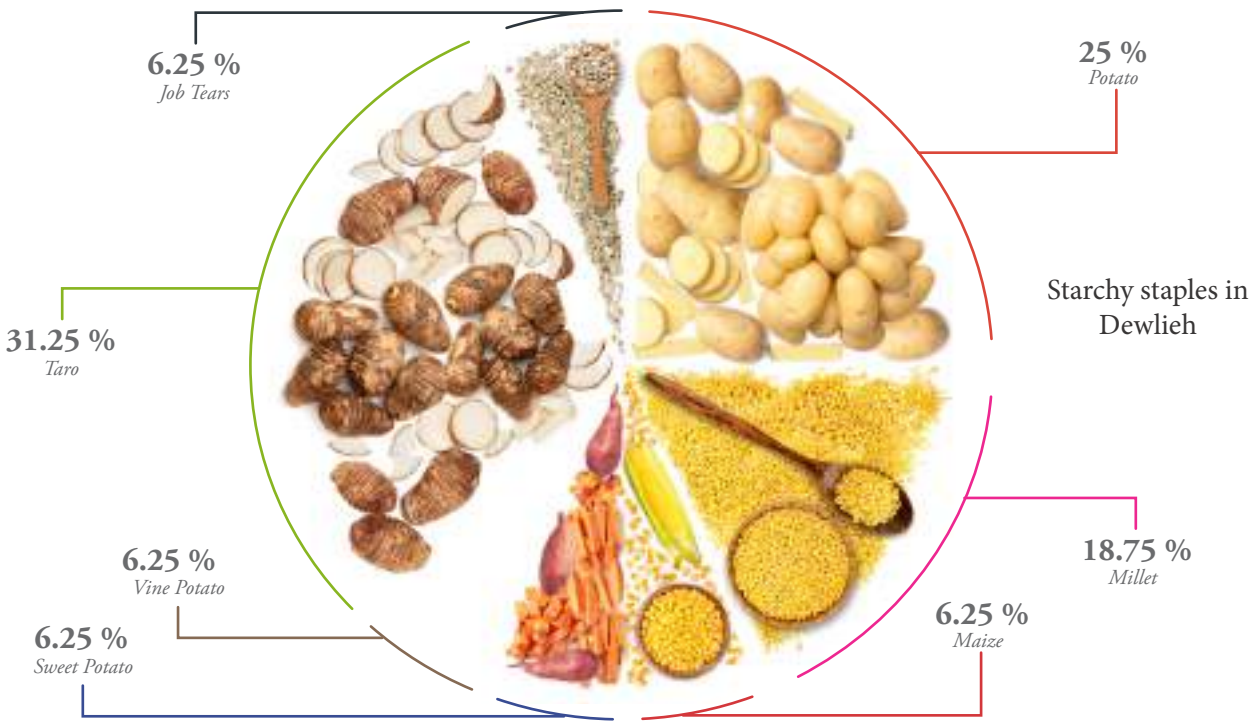
N.B: *W: Wild plant; NA: Not available*

Dewlieh

Dewlieh recorded a total of 87 food plants from the local landscape. Out of this, the highest number of plants (>30%) are found among the Other Fruits category which is followed by Green Leafy vegetables, just over 20%. The least number of food plants (<5%) are from Nuts and Seeds followed by Pulses and Condiments. There are no Vitamin A Rich plants in the village. Starchy Staples have just over 15% of the total food plants. Within this particular food group though eight different species of food plants, viz., potato, maize, sweet potato, taro, millet, vine potato and job tears are found. Except Vitamin A Rich plants, all the plant based food groups are available in the community.



Agrobiodiversity in Dewlieh



Starchy staples in Dewlieh

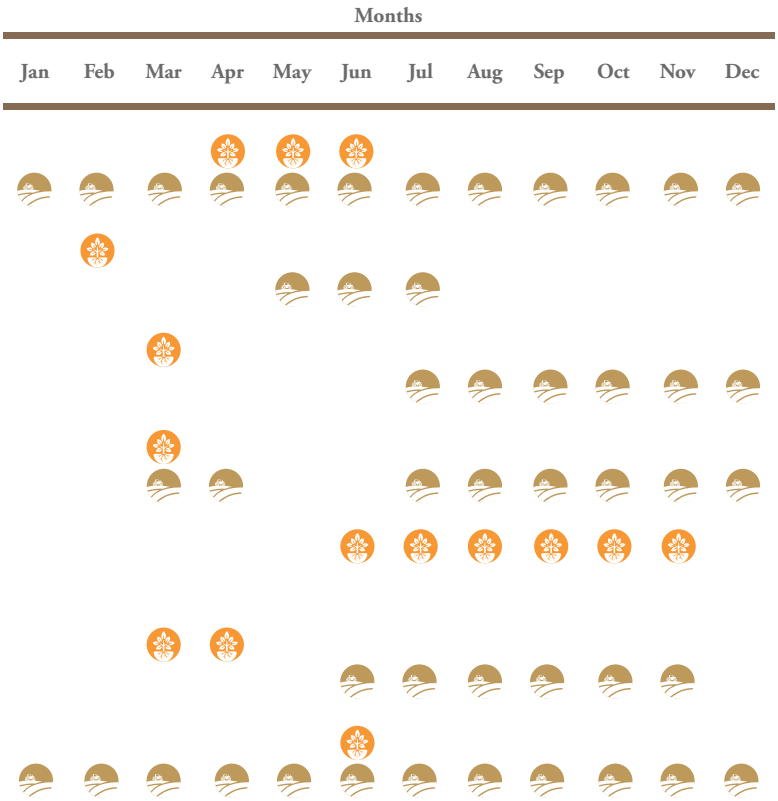
Starchy Staple

Other Fruits

Local Name	Scientific Name	Planting/ Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phan Joyti	*Solanum Sp.*	Planting												
		Harvesting												
Phan Lyngkait	*Solanum Sp.*	Planting												
		Harvesting												
Krai Truh	*Eleusine coracana*	Planting												
		Harvesting												
Krai Jasheh	*NA*	Planting												
		Harvesting												
Krai Lon	*NA*	Planting												
		Harvesting												
Riewhadem Stem	*Zea mays*	Planting												
		Harvesting												
Phan Dieng	*Manihot esculenta*	Planting												
		Harvesting												
Phan Imdieng	*Solanum Sp.*	Planting												
		Harvesting												
Phan Karo Saw	*Ipomea batatas*	Planting												
		Harvesting												
Sohlah	*Ipomoea racemosa*	Planting												
		Harvesting												
Shriew Tong	*Colocasia/Alocasia/ Remutsia Sp.*	Planting												
		Harvesting												
Shriew Pylleng	*Colocasia/Alocasia/ Remutsia Sp.*	Planting												
		Harvesting												
Shriew Shiktia	*Colocasia/Alocasia/ Remutsia Sp.*	Planting												
		Harvesting												
Shriew Saw	*Colocasia/Alocasia/ Remutsia Sp.*	Planting												
		Harvesting												
Shriew Khnap Blang	*Alocasia macrorrhiza*	Planting												
		Harvesting												
Sohriew	*Coix lachryma jobi*	Planting												
		Harvesting												

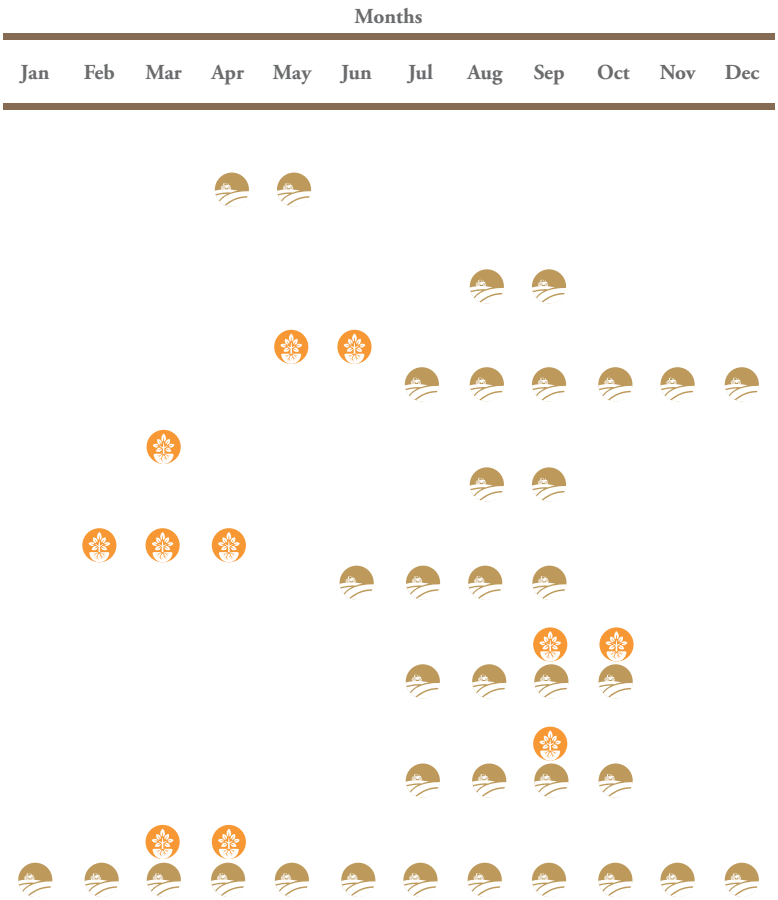
Condiments

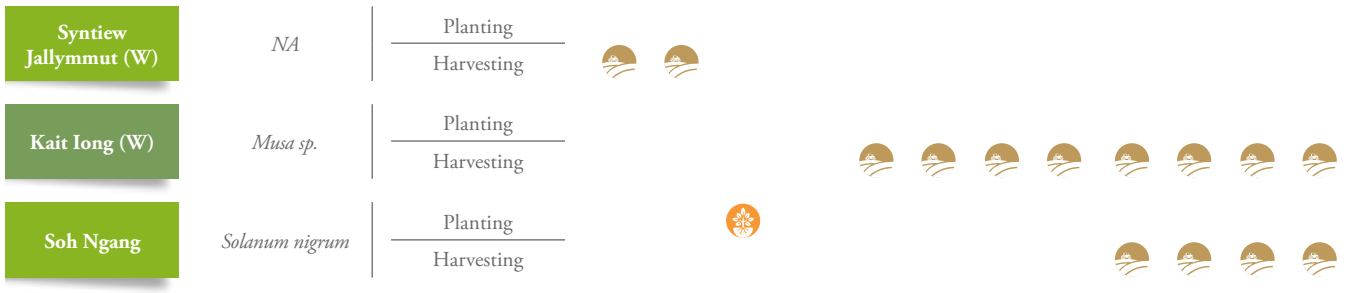
Local Name	Scientific Name	Planting/ Harvesting
Pudina	*Mentha viridis*	Planting / Harvesting
Dhania	*Coraindrum sativum*	Planting / Harvesting
Sying Bah	*Zingiber officinale*	Planting / Harvesting
Shynrai Stem	*Curcuma longa*	Planting / Harvesting
Sohmynken Pyllon	*Capsicum sp.*	Planting / Harvesting
Ken Jrong (Sohmynken)	*Capsicum sp.*	Planting / Harvesting
Sla Tyrpad	*Cinnamomum tamala*	Planting / Harvesting



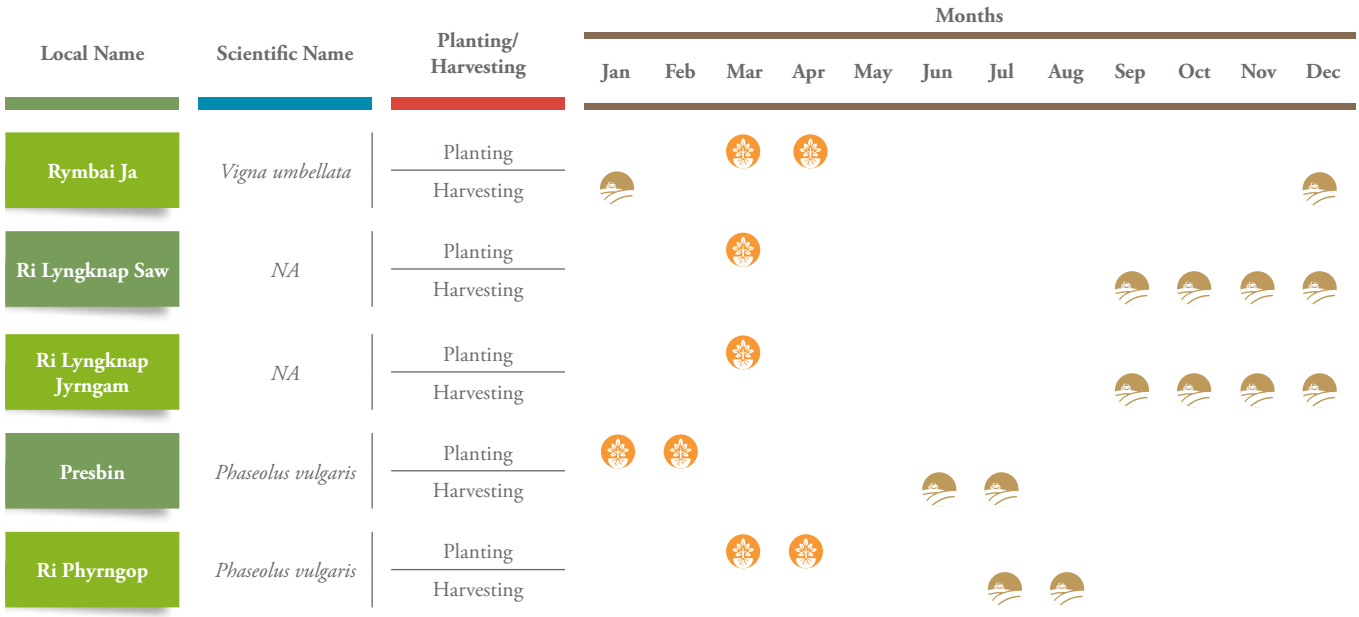
Other Vegetables

Local Name	Scientific Name	Planting/ Harvesting
Tit Tung (W)	*Lactarius volemus*	Planting / Harvesting
Tit Stem/Tit Tangrai (W)	*Craterellus odoratus*	Planting / Harvesting
Jyllang	*Allium tuberosum*	Planting / Harvesting
Soh Thliem	*Gomphogyne cissiformis*	Planting / Harvesting
Sohkhia Khasi	*Cucumis sativus*	Planting / Harvesting
Biskot Shiah	*Sechium edule*	Planting / Harvesting
Biskot Iong	*Sechium edule*	Planting / Harvesting
Pashor Kait	*Musa paradisiaca*	Planting / Harvesting

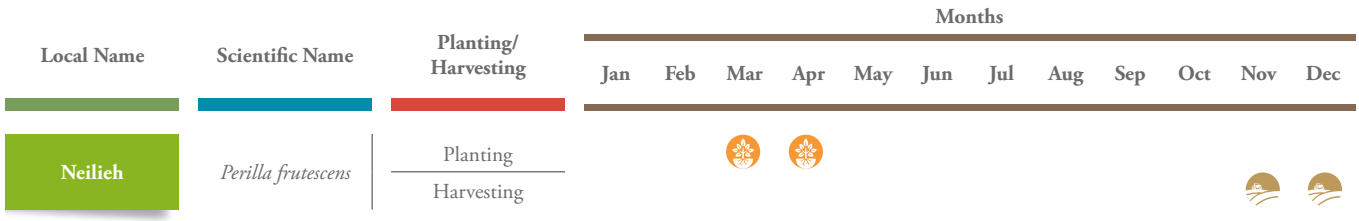




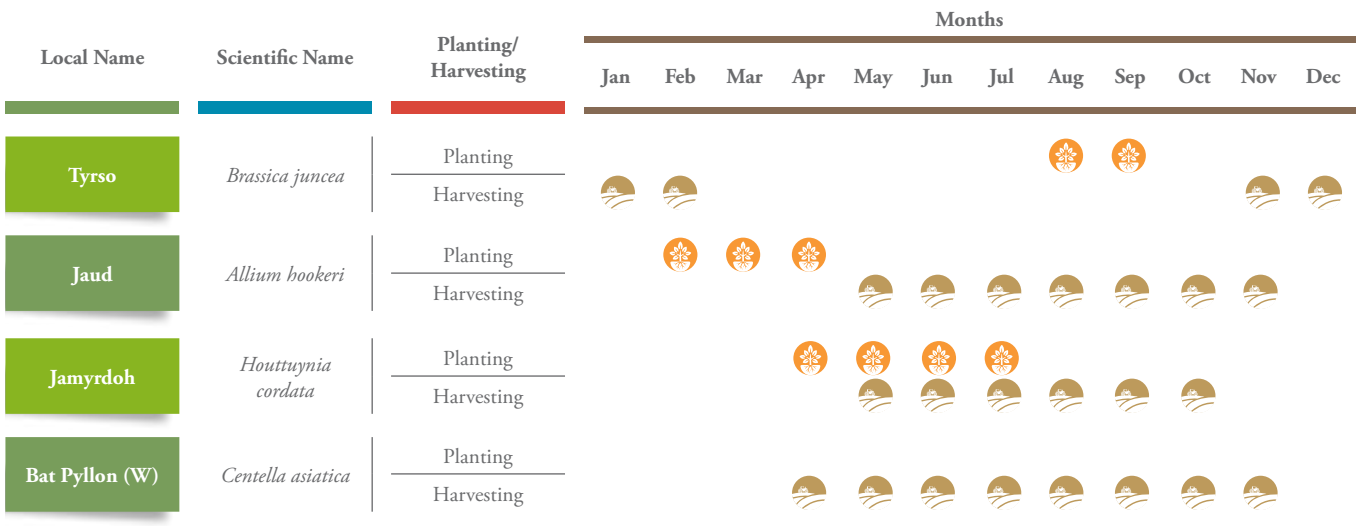
Pulses



Nuts and Seeds

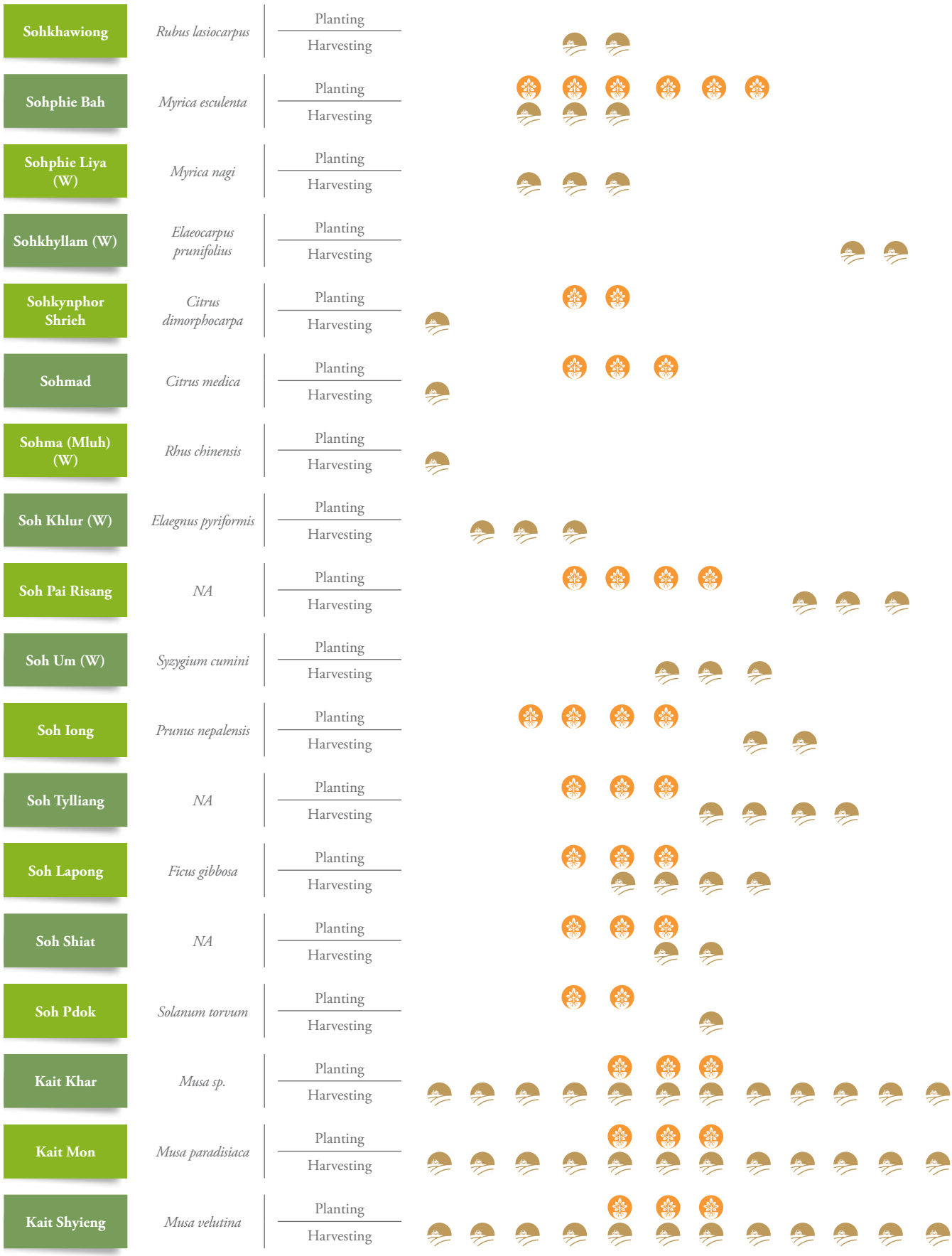


Green Leafy Vegetables



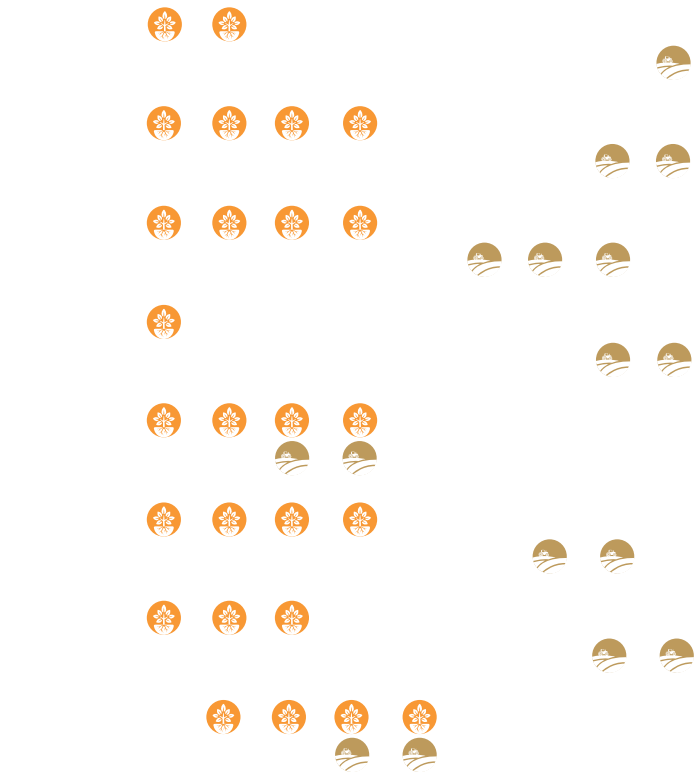
Other Fruits

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Soh Langdkhur	*Morus australis*	Planting Harvesting												
Sohphoh Nongkhlaw	*Pyrus communis*	Planting Harvesting												
Sohshiah	*Rubus ellipticus*	Planting Harvesting												


Sohkhawiong
Rubus lasiocarpus
Planting
Harvesting
Sohphie Bah
Myrica esculenta
Planting
Harvesting
Sohphie Liya (W)
Myrica nagi
Planting
Harvesting
Sohkhyllam (W)
Elaeocarpus prunifolius
Planting
Harvesting
Sohkynphor Shrieh
Citrus dimorphocarpa
Planting
Harvesting
Sohmad
Citrus medica
Planting
Harvesting
Sohma (Mluh) (W)
Rhus chinensis
Planting
Harvesting
Soh Khlur (W)
Elaegnus pyriformis
Planting
Harvesting
Soh Pai Risang
NA
Planting
Harvesting
Soh Um (W)
Syzygium cumini
Planting
Harvesting
Soh Iong
Prunus nepalensis
Planting
Harvesting
Soh Tylliang
NA
Planting
Harvesting
Soh Lapong
Ficus gibbosa
Planting
Harvesting
Soh Shiat
NA
Planting
Harvesting
Soh Pdok
Solanum torvum
Planting
Harvesting
Kait Khar
Musa sp.
Planting
Harvesting
Kait Mon
Musa paradisiaca
Planting
Harvesting
Kait Shyieng
Musa velutina
Planting
Harvesting

Soh Lyngkjup	*NA*	Planting / Harvesting	
Soh Priam	*Psidium guajava*	Planting / Harvesting	
Soh Myndong	*NA*	Planting / Harvesting	
Soh Kyrsiew	*NA*	Planting / Harvesting	
Soh Khylwiat	*NA*	Planting / Harvesting	
Soh Lyngwai	*NA*	Planting / Harvesting	
Soh Thri	*Calamus erectus*	Planting / Harvesting	
Soh Phan	*Artocarpus heterophyllus*	Planting / Harvesting	

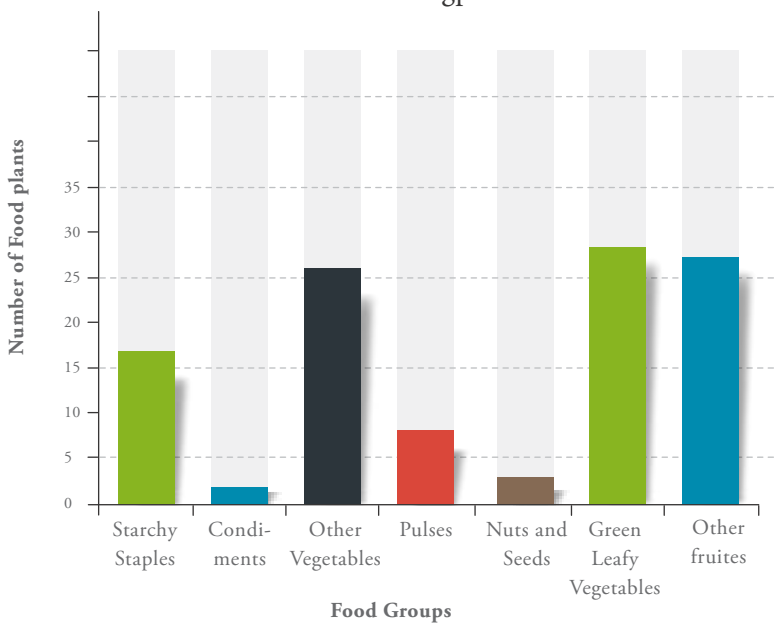
N.B: *W: Wild plant;*

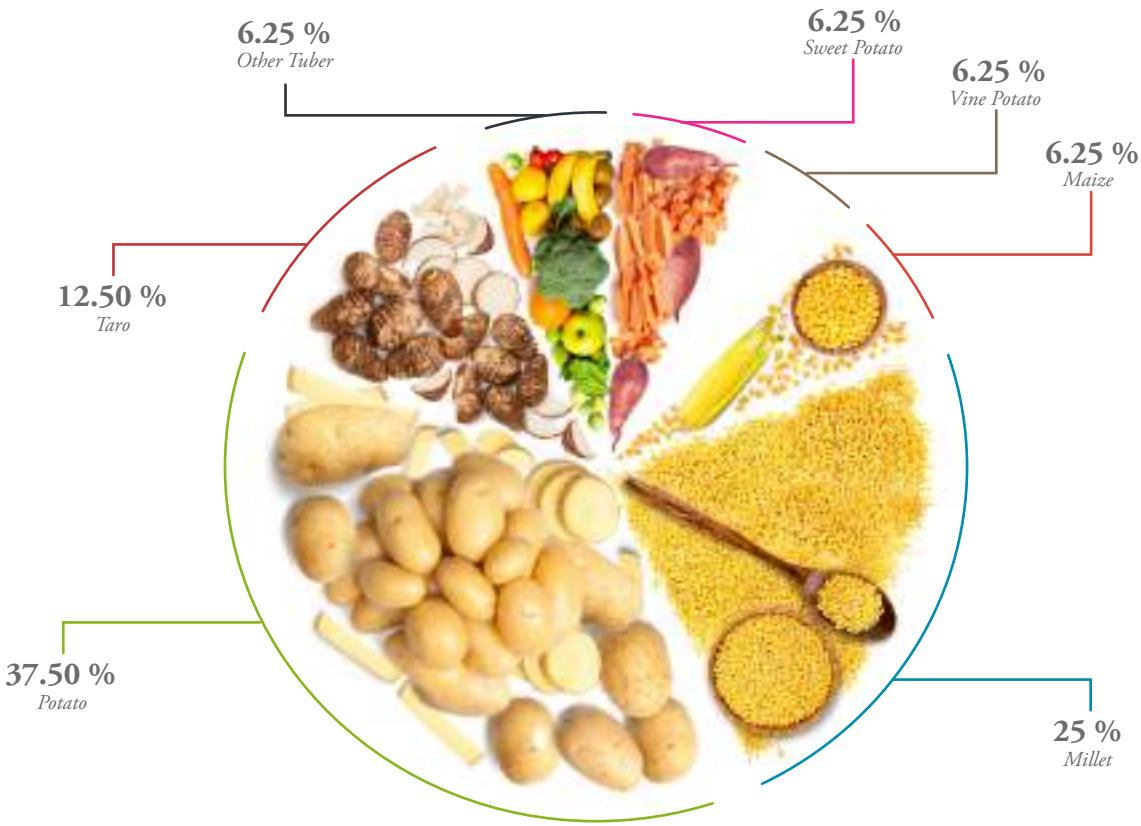


Umdiengpoh

Umdiengpoh recorded a total of 107 food plants from the local landscape. Out of this, the highest number of plants (>25%) are found among the Other Fruits, and Green Leafy Vegetables. The least number of food plants (<5%) are from Condiments and Nuts and Seeds. There are no Vitamin A Rich plants in the village. Starchy Staples have just over 10% of the total food plants. Within this particular food group though six different species of food plants, viz., potato, maize, sweet potato, taro, vine potato and millet are found. Except Vitamin A Rich plants, all the plant based food groups are available in the community.

Agrobiodiversity in Umdiengpoh





Starchy staples inUmdiengpoh

Starchy Staples

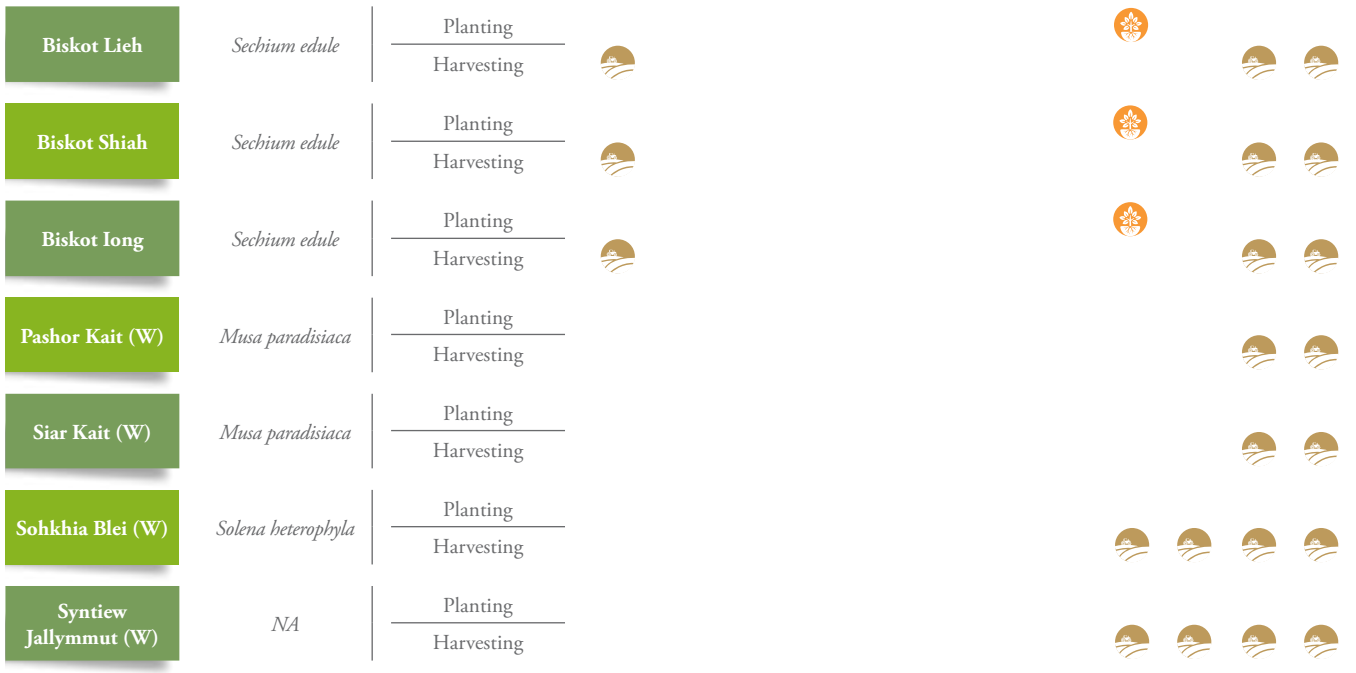
Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phan Karo Saw	*Ipomea batatas*	Planting												
		Harvesting												
Sohlah	*Ipomoea racemosa*	Planting												
		Harvesting												
Riew Hadem Lieh	*Zea mays*	Planting												
		Harvesting												
Krai Truh	*Eleusine coracana*	Planting												
		Harvesting												
Krai Jasheh	*NA*	Planting												
		Harvesting												
Krai Lon	*NA*	Planting												
		Harvesting												
Krai Soh	*NA*	Planting												
		Harvesting												
Phan Saw	*Solanum sp.*	Planting												
		Harvesting												
Phan Joyti	*Solanum sp.*	Planting												
		Harvesting												
Phan Syntiew	*Solanum sp.*	Planting												
		Harvesting												
Phan Imdieng	*Solanum sp.*	Planting												
		Harvesting												
Phan Sanminit	*Solanum tuberosum*	Planting												
		Harvesting												
Phan Lieh	*Solanum sp.*	Planting												
		Harvesting												
Shriew Lyngkait	*Colocasia/Alocasia/ Remutsia Sp.*	Planting												
		Harvesting												
Shriew Shiktia	*Colocasia/Alocasia/ Remutsia Sp.*	Planting												
		Harvesting												
Soh Phlang	*Flemingia vestita*	Planting												
		Harvesting												

Condiments

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pudina	*Mentha viridis*	Planting												
		Harvesting												

Other Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tit Kor (W)	*NA*	Planting / Harvesting									●			
Tit Tung (W)	*Lactarius volemus*	Planting / Harvesting				●								
Tit Stem/Tit Tynrai (W)	*Craterellus odoratus*	Planting / Harvesting									●			
Tit Snier Blang (W)	*NA*	Planting / Harvesting									●			
Tit Tnaw Syiar (Stem/Lieh) (W)	*Clavulina sp.*	Planting / Harvesting									●			
Tit Doh (W)	*Lactarius volemus*	Planting / Harvesting									●			
Tit Dud (W)	*NA*	Planting / Harvesting									●			
Tit Tyngab (W)	*Laccaria lateritia*	Planting / Harvesting									●			
Tit Lbonghati (W)	*Ramaria sp.*	Planting / Harvesting									●			
Tit Eit Masi (W)	*NA*	Planting / Harvesting									●			
Tit Tah (W)	*NA*	Planting / Harvesting									●			
Tit Sopjat (W)	*NA*	Planting / Harvesting									●			
Soh Pen (W)	*Eriosema himalaicum*	Planting / Harvesting											●	●
Kubi	*Brassica oleracea var. capitata*	Planting / Harvesting							◆			●		
Jyllang	*Allium tuberosum*	Planting / Harvesting		◆	◆				●		◆			
Soh Thliem	*Gomphogyne cissiformis*	Planting / Harvesting				◆	◆					●		
Sohkhia Khasi	*Cucumis sativus*	Planting / Harvesting			◆	◆					●	●		
Sohlakum	*Brassica rapa subsp. rapa*	Planting / Harvesting				◆	●							
Muli	*Raphanus sativus*	Planting / Harvesting			◆		●				◆		●	●



Pulses

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rymbai Ja	*Vigna umbellata*	Planting				●	●							
		Harvesting											●	●
Rymbai Ktung	*Glycine max*	Planting				●	●							
		Harvesting											●	●
Motor Shana	*Pisum sativum*	Planting							●	●				
		Harvesting										●	●	
Motor Heh	*Pisum sativum*	Planting							●	●				
		Harvesting										●	●	
Motor Ri	*Pisum sativum*	Planting							●	●				
		Harvesting										●	●	
Presbin	*Phaseolus vulgaris*	Planting		●										
		Harvesting									●	●		
Ri Phyrngop	*Phaseolus vulgaris*	Planting							●					
		Harvesting										●	●	●

Nuts and Seeds

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Soh Ot (W)	*Castanopsis indica*	Planting	Wild											
		Harvesting											●	●
Neilieh	*Perilla frutescens*	Planting			●	●								
		Harvesting											●	●

Green Leafy Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jasim (W)	*NA*	Planting												
		Harvesting	●	●							●	●	●	●
Jajew Kynih Syiar/ Jajew Maw (W)	*Pothos curtizii*	Planting												
		Harvesting									●	●	●	●
Sla Phul	*Brassica oleracea var. botrytis*	Planting						●	●	●				
		Harvesting	●	●								●	●	●
Salat	*Lactuca sativa*	Planting				●	●			●	●			
		Harvesting						●	●				●	●
Jakhria (W)	*Rhynchotechum ellipticum*	Planting												
		Harvesting					●	●	●	●	●	●	●	
Tyrso	*Brassica juncea*	Planting							●	●	●	●		
		Harvesting	●	●									●	●
Jaud	*Allium hookeri*	Planting			●	●	●	●	●	●				
		Harvesting			●	●	●	●	●	●				
Jamyrdoh	*Houttuynia cordata*	Planting		●	●	●	●	●	●	●				
		Harvesting			●	●	●	●	●	●	●	●		
Jatira (W)	*Oenanthe linearis*	Planting												
		Harvesting			●	●	●	●	●	●	●	●		
Bat Pyllon (W)	*Centella asiatica*	Planting												
		Harvesting			●	●	●	●	●	●	●	●		
Tyrkhang Iong (W)	*Diplazium esculentum*	Planting												
		Harvesting									●	●	●	●
Jaiing (W)	*Brassica nigra*	Planting												
		Harvesting					●	●	●	●	●	●		
Jajew Heh Sla (W)	*NA*	Planting												
		Harvesting									●	●	●	●
Jathang (W)	*Neilla thyrsiflora*	Planting												
		Harvesting									●	●		
Jatwad (W)	*NA*	Planting												
		Harvesting					●	●	●	●	●	●	●	●
Jawieh (W)	*NA*	Planting												
		Harvesting								●	●	●	●	
Latyrdop (W)	*NA*	Planting												
		Harvesting								●	●	●	●	
Jabuit (W)	*Polygonum muricatum*	Planting												
		Harvesting						●	●	●	●	●	●	

Local Name	Scientific Name	Planting/ Harvesting
Jajew Khyndew (W)	*NA*	Planting / Harvesting
Jajew Rben (W)	*NA*	Planting / Harvesting
Jali (W)	*Gynura nepalensis*	Planting / Harvesting
Jangen Skei (W)	*NA*	Planting / Harvesting
Jalynniar (W)	*Sonchus arvensis*	Planting / Harvesting
Jalynnoh (W)	*Polygonum orientale*	Planting / Harvesting
Jamiaw (W)	*Gentiana quadrifaria*	Planting / Harvesting
Jahenwet (W)	*NA*	Planting / Harvesting
Jangew Mawria (W)	*NA*	Planting / Harvesting
Jabar (W)	*NA*	Planting / Harvesting

Other Fruits

Local Name	Scientific Name	Planting/ Harvesting
Sohlyngdkhur	*Morus australis*	Planting / Harvesting
Sohphoh Nongkhlaw	*Pyrus communis*	Planting / Harvesting
Sohphoh Lakun	*Pyrus communis*	Planting / Harvesting
Sohshiah (W)	*Rubus ellipticus*	Planting / Harvesting
Sohkhawiong (W)	*Rubus lasiocarpus*	Planting / Harvesting
Sohpdung Ksuit	*NA*	Planting / Harvesting
Sohryngkham (W)	*Vaccinium graffithianum*	Planting / Harvesting
Sohphie Bah	*Myrica esculenta*	Planting / Harvesting

Months: Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec

Sohphie Nam	*Myrica nagi*	Planting / Harvesting
Sohphie Liya	*Myrica nagi*	Planting / Harvesting
Sohlang Ja	*NA*	Planting / Harvesting
Sohshur	*Pyrus pashia*	Planting / Harvesting
Sohkhyllam (W)	*Elaeocarpus prunifolius*	Planting / Harvesting
Sohlyngkait	*Holboellia latifolia*	Planting / Harvesting
Sohphoh Khasi	*Docynia indica*	Planting / Harvesting
Sohkynphor Shrieh (W)	*Citrus dimorphocarpa*	Planting / Harvesting
Sohmad (W)	*Citrus medica*	Planting / Harvesting
Sohma (Mluh) (W)	*Rhus chinensis*	Planting / Harvesting
Soh Khlur (W)	*Elaegnus pyriformis*	Planting / Harvesting
Soh Eit Ksew (W)	*NA*	Planting / Harvesting
Soh Kyrsiew	*NA*	Planting / Harvesting
Soh Pai Risang (W)	*NA*	Planting / Harvesting
Soh Um	*Syzygium cumini*	Planting / Harvesting
Soh Iong (W)	*Prunus nepalensis*	Planting / Harvesting
Soh Lapoqng (W)	*Ficus gibbosa*	Planting / Harvesting
Soh Shiat (W)	*NA*	Planting / Harvesting
Soh Pdok	*Solanum torvum*	Planting / Harvesting

N.B: *W: Wild plant; NA: Not available*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03

PRIORITISED FOOD PLANTS FOR INCLUSION IN MID-DAY MEAL

For inclusion into the Mid-Day Meal program, crops have been selected from the local agrobiodiversity. This selection is based on the following criteria:

1. Missing food groups: The DDS survey done as part of the participatory mapping brought to light the gaps in food consumption among selected villages (which includes Laitsohpliah) from Meghalaya and Nagaland. Data for the East Khasi Hills district DDS was used to identify the missing food groups which became the prioritised food groups for the villages. These missing food groups are viz., pulses, nuts and seeds, vitamin A rich plants, green leafy vegetables and other fruits.

2. Availability of seeds: Any food plant that is selected as a prioritised plant should not face any shortage of seeds. This is to ensure that there are no supply bottlenecks in the future. Availability of seeds was thus another criterion used for prioritisation.

3. Abundance: Limited production may hamper regular incorporation of the food plants into the Mid-Day Meal diet. The aim is to grow the food plants in the school garden. But in case of low yield, harvesting from the local farms is an option.

4. Taste: Taste, especially for children is a very important criterion. Therefore care was taken that the food plant chosen is something that is relished by the local community, esp. children.

The community was provided with the list of the local agrobiodiversity. They were then asked to select food plants from the missing food groups on the basis of the additional three criteria. Every village come up with a list of their own. This makes the selection village specific removing the danger of generalisation. The community members from their respective villages then create plans, facilitated by NESFAS, to include these selected food plants into the Mid-Day Meal program.

Mawmihthied

The community from Mawmihthied selected a total of 52 food plants for inclusion into the Mid-Day Meal program. Majority of these crops are from the Green Leafy Vegetables category followed by Other Vegetables and Other Fruits. Other vegetables were not part of the missing food group, but the community felt the need to include it as part of the prioritized food group. The least number of food plants came from Pulses, Nuts and Seeds and Vitamin A Rich Plants (<10%). The prioritised list of food plants included both cultivated as well as wild varieties.

Food Group	Number Of Food Plants
Green Leafy Vegetables	15
Pulses	4
Vitamin A Rich Plant	3
Nuts and Seeds	4
Other Fruits	12
Other Vegetables*	14
Total	52

N.B: ** Extra food group*

Table 8: Prioritised food group in Mawmihthied

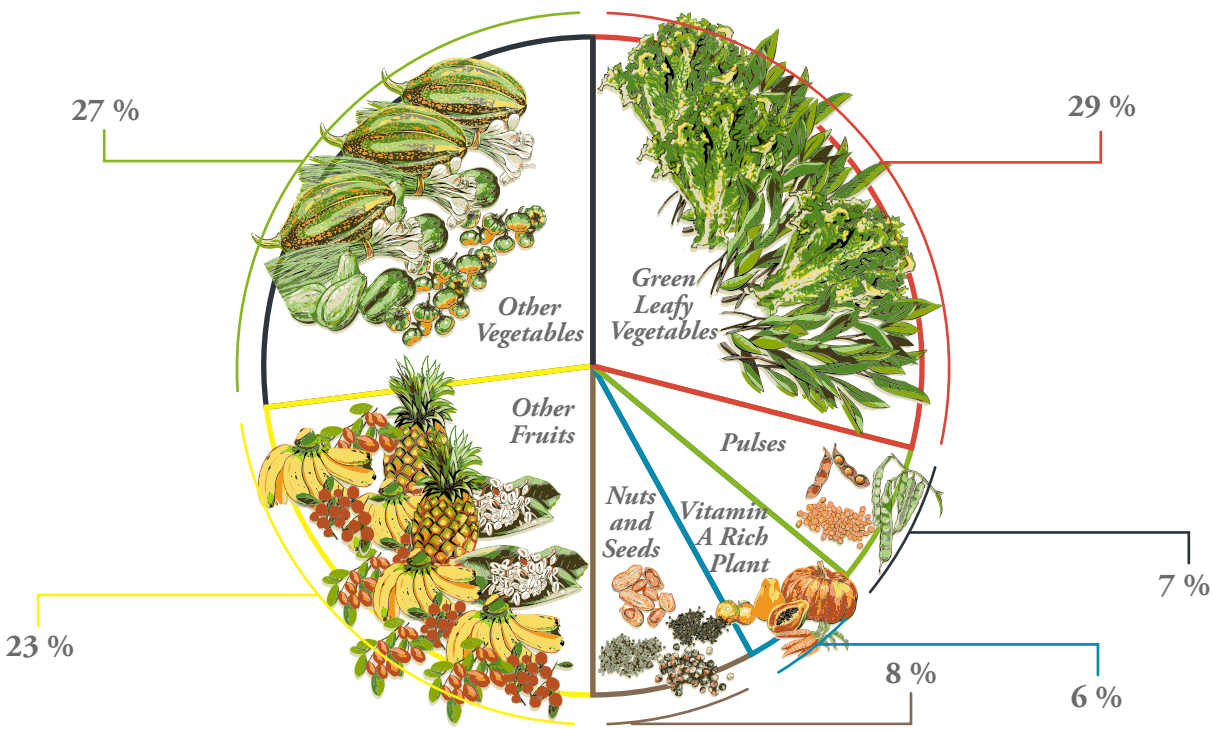


Figure 7: Prioritised food plants from Mawmihthied

Other Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tit Tung (W)	*Lactarius volemus*	Planting												
		Harvesting						●	●	●				
Tit Tnaw Syiar (Stem/Lieh) (W)	*Clavulina sp.*	Planting												
		Harvesting								●	●			
Tit Dud (W)	*NA*	Planting												
		Harvesting								●	●			
Tit Eit Masi (W)	*NA*	Planting												
		Harvesting							●	●	●			
Kubi	*Brassica oleracea var. capitata*	Planting							●					
		Harvesting										●		
Jyllang	*Allium tuberosum*	Planting		●										
		Harvesting							●	●	●	●		
Soh Thliem	*Gomphogyne cissiformis*	Planting				●								
		Harvesting								●	●	●		
Biskot Lieh	*Sechium edule*	Planting		●										
		Harvesting								●				
Muli Lieh	*Raphanus sativus*	Planting		●	●									
		Harvesting						●		●	●		●	●
Sohkhia Khasi	*Cucumis sativus*	Planting			●									
		Harvesting							●					
Syntiew Jalymmut (W)	*NA*	Planting												
		Harvesting						●	●					
Pathaw Thohriew	*Cucurbita maxima*	Planting		●	●									
		Harvesting							●	●	●	●	●	●
Syntiew Pathaw	*Cucurbita maxima*	Planting		●	●									
		Harvesting								●	●	●		
Sohlakum	*Brassica rapa subsp. rapa*	Planting		●	●				●	●				
		Harvesting				●	●				●			

Pulses

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ri Phyrngop	*Phaseolus vulgaris*	Planting			●							●		
		Harvesting							●	●	●		●	●
Ri Lyngknap Saw	*NA*	Planting				●								
		Harvesting									●			

Local Name	Scientific Name	Planting/ Harvesting
Ri Ran/Majai	*Vicia faba*	Planting / Harvesting
Rymbai Ja	*Vigna umbellata*	Planting / Harvesting

Nuts and Seeds

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Soh Ot rit (W)	*Castanopsis indica*	Planting / Harvesting												
Neilieh	*Perilla frutescens*	Planting / Harvesting												
Shyieng Pathaw	*Cucurbita maxima*	Planting / Harvesting												
Shyieng Sohphie (W)	*Myrica esculenta*	Planting / Harvesting												

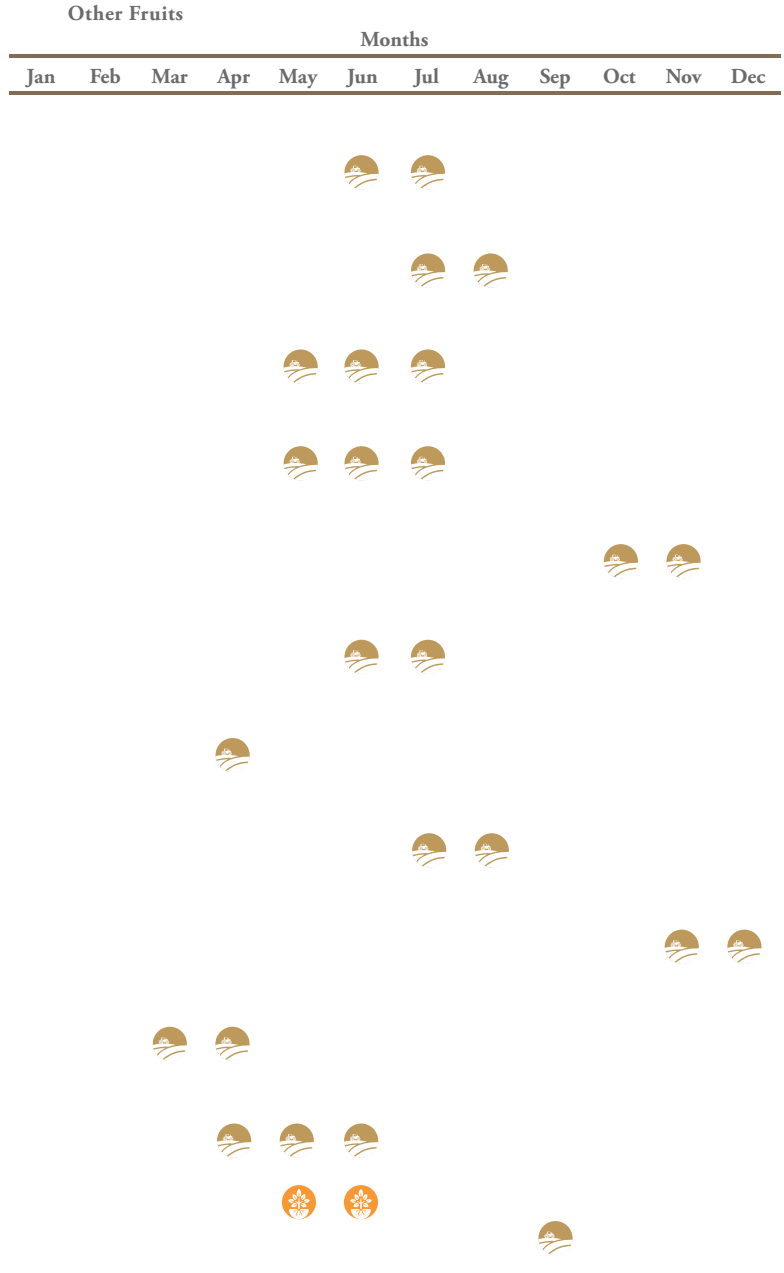
Green Leafy Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jaud (W)	*Allium hookeri*	Planting / Harvesting												
Tyrso	*Brassica juncea*	Planting / Harvesting												
Jamyrdoh (W)	*Houttuynia cordata*	Planting / Harvesting												
Jatira (W)	*Oenanthe linearis*	Planting / Harvesting												
Bat Pyllon (W)	*Centella asiatica*	Planting / Harvesting												
Jangew Mawria/ Tangduma (W)	*NA*	Planting / Harvesting												
Jajer (W)	*NA*	Planting / Harvesting												
Jabal (W)	*NA*	Planting / Harvesting												
Sla Phankaro	*Ipomea batatas*	Planting / Harvesting												
Sla Pathaw	*Cucurbita maxima*	Planting / Harvesting												

Local Name	Scientific Name	Planting/ Harvesting
Sla Biskot	*Sechium edule*	Planting / Harvesting
Sla Byrthti (W)	*NA*	Planting / Harvesting
Sla Muli	*Raphanus sativus*	Planting / Harvesting
Sla Jyllang	*Allium tuberosum*	Planting / Harvesting
Jalynniar (W)	*Sonchus arvensis*	Planting / Harvesting

Other Fruits

Local Name	Scientific Name	Planting/ Harvesting
Sohshiah (W)	*Rubus ellipticus*	Planting / Harvesting
Sohryngkham (W)	*Vaccinium graffithianum*	Planting / Harvesting
Sohphie Nam (W)	*Myrica nagi*	Planting / Harvesting
Sohphie Liya (W)	*Myrica sp.*	Planting / Harvesting
Sohlang Ja (W)	*NA*	Planting / Harvesting
Sohshur (W)	*Pyrus pashia*	Planting / Harvesting
Sohkhyllam (W)	*Elaeocarpus prunifolius*	Planting / Harvesting
Sohlyngkait (W)	*Holboellia latifolia*	Planting / Harvesting
Soh khlur (W)	*Elaegnus pyriformis*	Planting / Harvesting
Soh Um (W)	*Syzygium cumini*	Planting / Harvesting
Sohlang Dkhur (W)	*Morus australis*	Planting / Harvesting
Sohphoh Nongkhlaw	*Pyrus communis*	Planting / Harvesting



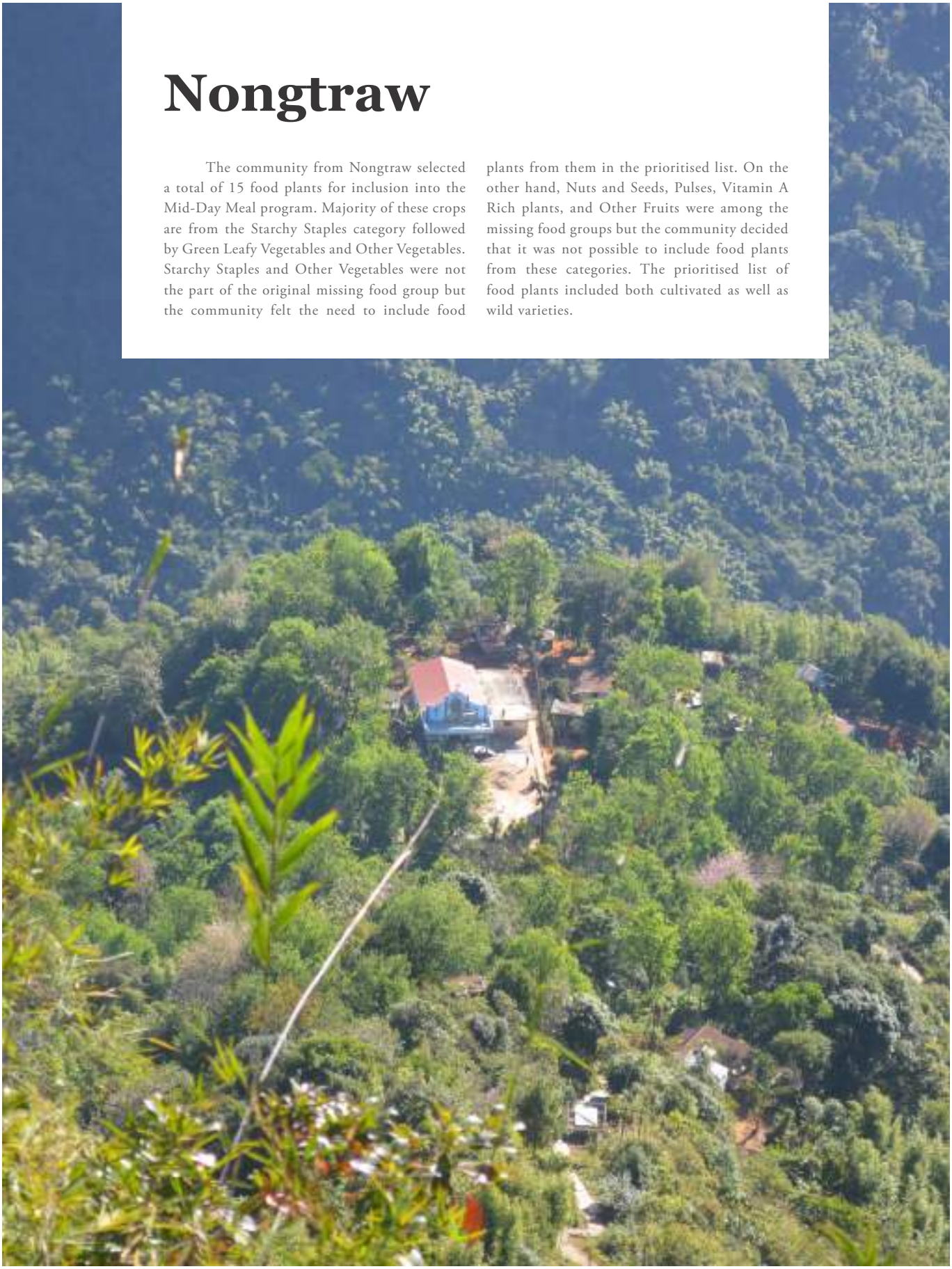
Vitamin A Rich Plants

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Soh Brab	*Passiflora edulis*	Planting				●	●							
		Harvesting						●	●					
Kajor	*Daucus carota subdp. sativus*	Planting		●										
		Harvesting								●	●			
Pathaw Bah/Heh	*Cucurbita maxima*	Planting		●	●									
		Harvesting								●	●			

N.B: *W: Wild plant; NA: Not available*

Nongtraw

The community from Nongtraw selected a total of 15 food plants for inclusion into the Mid-Day Meal program. Majority of these crops are from the Starchy Staples category followed by Green Leafy Vegetables and Other Vegetables. Starchy Staples and Other Vegetables were not the part of the original missing food group but the community felt the need to include food plants from them in the prioritised list. On the other hand, Nuts and Seeds, Pulses, Vitamin A Rich plants, and Other Fruits were among the missing food groups but the community decided that it was not possible to include food plants from these categories. The prioritised list of food plants included both cultivated as well as wild varieties.



Food Group	Number Of Food Plants
Starchy Staples*	6
Green Leafy Vegetables*	5
Other Vegetables	4
Total	15

N.B: ** Extra food group*

Table 9: Prioritised food groups in Nongtraw

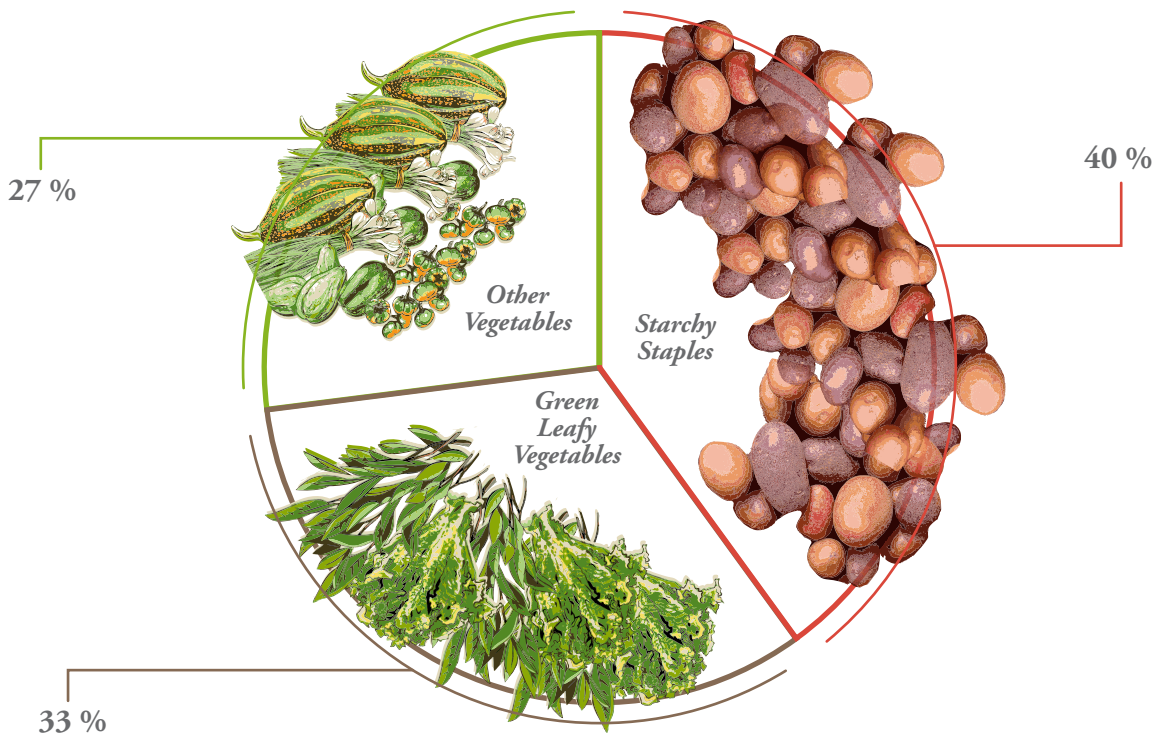


Figure 8 : Prioritised food group in Nongtraw

Starchy Staples

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phan Saw	*Solanum tuberosum*	Planting												
		Harvesting												
Phan Imslem	*Solanum sp.*	Planting												
		Harvesting												
Phan Sawhoiń	*Solanum sp.*	Planting												
		Harvesting												
Phan Lyngseng	*Solanum sp.*	Planting												
		Harvesting												
Phan Jata	*Solanum sp.*	Planting												
		Harvesting												
Phan Shriew	*Solanum sp.*	Planting												
		Harvesting												

Other Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sohkhia	*Cucumis sativus*	Planting												
		Harvesting												
Jyllang	*Allium tuberosum*	Planting												
		Harvesting												
Siar Kait (W)	*Musa paradisiaca*	Planting												
		Harvesting												
Khoit Kait (W)	*Musa paradisiaca*	Planting												
		Harvesting												

Green Leafy Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jaiing	*Brassica nigra*	Planting												
		Harvesting												
Tyrso	*Brassica juncea*	Planting												
		Harvesting												
Jali (W)	*Gynura nepalensis*	Planting												
		Harvesting												
Jarain (W)	*Fagopyrum dibotrys*	Planting												
		Harvesting												
Jakhria (W)	*Rhynchotechum ellipticum*	Planting												
		Harvesting												

N.B: *W: Wild plant; NA: Not available*

Laitsohpliah

The community from Laitsohpliah selected a total of 37 food plants for inclusion into the Mid-Day Meal program. Majority of these crops are from the Green Leafy Vegetables category followed by Starchy Staples. From among the prioritised food plants, plants from Starchy Staples and Other Vegetables were not the part of the original missing food group but the community felt the need to include food plants from them in the prioritised list. Nuts and Seeds, Pulses, Vitamin A Rich plants, and Other Fruits were among the missing food groups and were included by the community. The prioritized list of food plants included both cultivated as well as wild varieties.

Food Group	Number Of Food Plants
Starchy Staples*	10
Other Vegetables*	5
Pulses	3
Nuts And Seeds	1
Green Leafy Vegetables	11
Other Fruits	6
Vitamin A Rich Plants	1
Total	37

N.B: ** Extra food group*

Table 10: Prioritised food group in Laitsohpliah

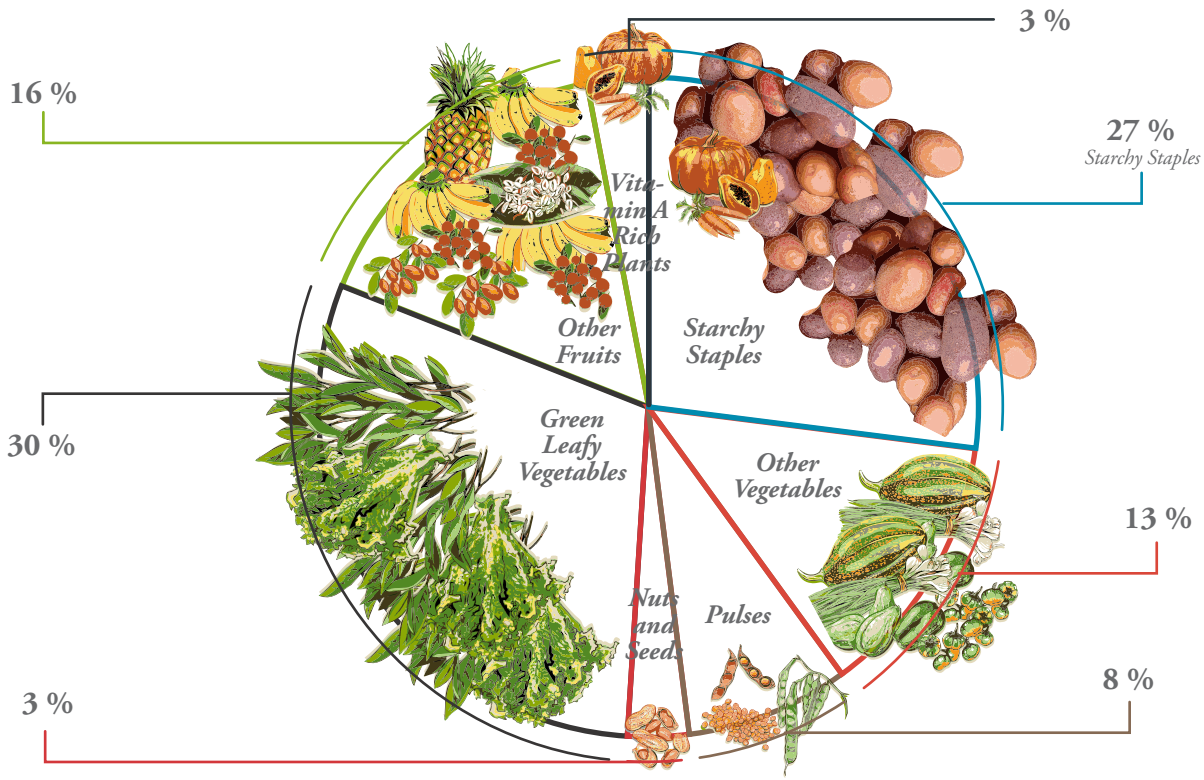


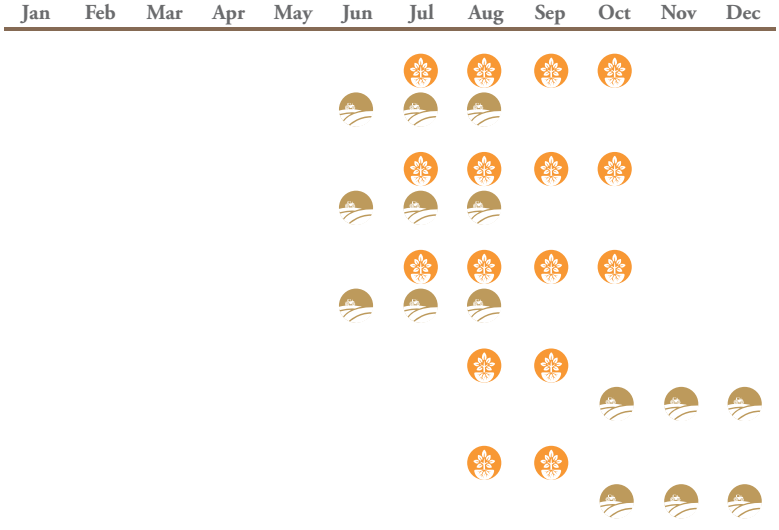
Figure 9: Prioritised food group in Laitsohpliah

Starchy Staples

Local Name	Scientific Name	Planting/ Harvesting
Phan Lieh	*Solanum tuberosum*	Planting / Harvesting
Phan Saw	*Solanum tuberosum*	Planting / Harvesting
Phan Syntiew	*Solanum sp.*	Planting / Harvesting
Phan Imdieng	*Solanum sp.*	Planting / Harvesting
Phan San Minit	*Solanum tuberosum*	Planting / Harvesting
Phan Karo Saw	*Ipomea batatas*	Planting / Harvesting
Phan Karo Lieh	*Ipomea batatas*	Planting / Harvesting

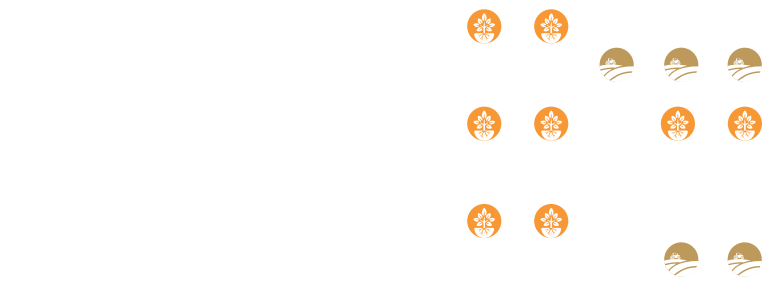
Other Vegetables

Local Name	Scientific Name	Planting/ Harvesting
Biskot Lieh	*Sechium edule*	Planting / Harvesting
Biskot Shiah	*Sechium edule*	Planting / Harvesting
Biskot Iong	*Sechium edule*	Planting / Harvesting
Muli Lieh	*Raphanus sativus*	Planting / Harvesting
Muli Saw	*Raphanus sativus*	Planting / Harvesting



Pulses

Local Name	Scientific Name	Planting/ Harvesting
Presbin	*Phaseolus vulgaris*	Planting / Harvesting
Motor Heh	*Pisum sativum*	Planting / Harvesting
Motor Ri	*Pisum sativum*	Planting / Harvesting



Nuts and Seeds

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Soh Ot (W)	*Castanopsis indica*	Planting												
		Harvesting	●	●	●								●	●

Green Leafy Vegetables

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jaud (W)	*Allium hookeri*	Planting												
		Harvesting						●	●	●	●	●	●	●
Jamyrdoh (W)	*Houttuynia cordata*	Planting												
		Harvesting	●	●	●	●	●	●	●	●	●	●	●	●
Bat Pyllon (W)	*Centella asiatica*	Planting												
		Harvesting						●	●	●	●	●	●	●
Jangew Kynthong (W)	*NA*	Planting												
		Harvesting					●	●						
Jali (W)	*Gynura nepalensis*	Planting												
		Harvesting	●	●	●	●	●	●	●	●	●	●	●	●
Jatira (W)	*Oenanthe linearis*	Planting												
		Harvesting						●	●	●	●	●		
Jalynniar (W)	*Sonchus arvensis*	Planting												
		Harvesting	●	●	●	●	●	●	●	●	●	●	●	●
Jangew Mawria (W)	*NA*	Planting												
		Harvesting					●	●	●	●	●	●		
Jabar (W)	*NA*	Planting												
		Harvesting				●	●	●	●	●	●	●		
Jaiing	*Brassica nigra*	Planting			✿									
		Harvesting						●	●					
Tyrso	*Brassica juncea*	Planting			✿						✿			
		Harvesting	●	●	●	●					●	●	●	●
									✿	✿				

Other Fruits

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sohshiah (W)	*Rubus ellipticus*	Planting												
		Harvesting				●	●							
Sohkhawiong (W)	*Rubus lasiocarpus*	Planting												
		Harvesting					●							
Sohphie Bah (W)	*Myrica esculenta*	Planting												
		Harvesting				●	●	●						

Local Name	Scientific Name	Planting/ Harvesting
Sohphie Nam (W)	*Myrica nagi*	Planting / Harvesting
Sohphie Liya (W)	*Myrica sp.*	Planting / Harvesting
Soh Lyngdhur (W)	*Morus australis*	Planting / Harvesting
Kajor	*Daucus carota subdp. sativus*	Planting / Harvesting

Vitamin Rich A Plants

	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sohphie Nam (W)						●	●					
Sohphie Liya (W)						●	●					
Soh Lyngdhur (W)						●	●					
Kajor		●	●	●				●	●	●	●	●

N.B: *W: Wild plant; NA: Not available*

Dewlieh

The community from Dewlieh selected a total of 49 food plants for inclusion into the Mid-Day Meal program. Majority of these crops (>50%) are from the Other Fruits category followed by Green Leafy Vegetables. Vitamin A rich Fruits were not found in the village so no food plants were selected from this category. The least number of food plants came from Nuts and Seeds (<5%) followed by Pulses. The prioritised list of food plants included both cultivated as well as wild varieties.

Food Group	Number Of Food Plants
Green Leafy Vegetables	16
Pulses	5
Nuts and Seeds	1
Other Fruits	27
Total	49

N.B: ** Extra food group*

Table 11: Prioritised food group in Dewlieh

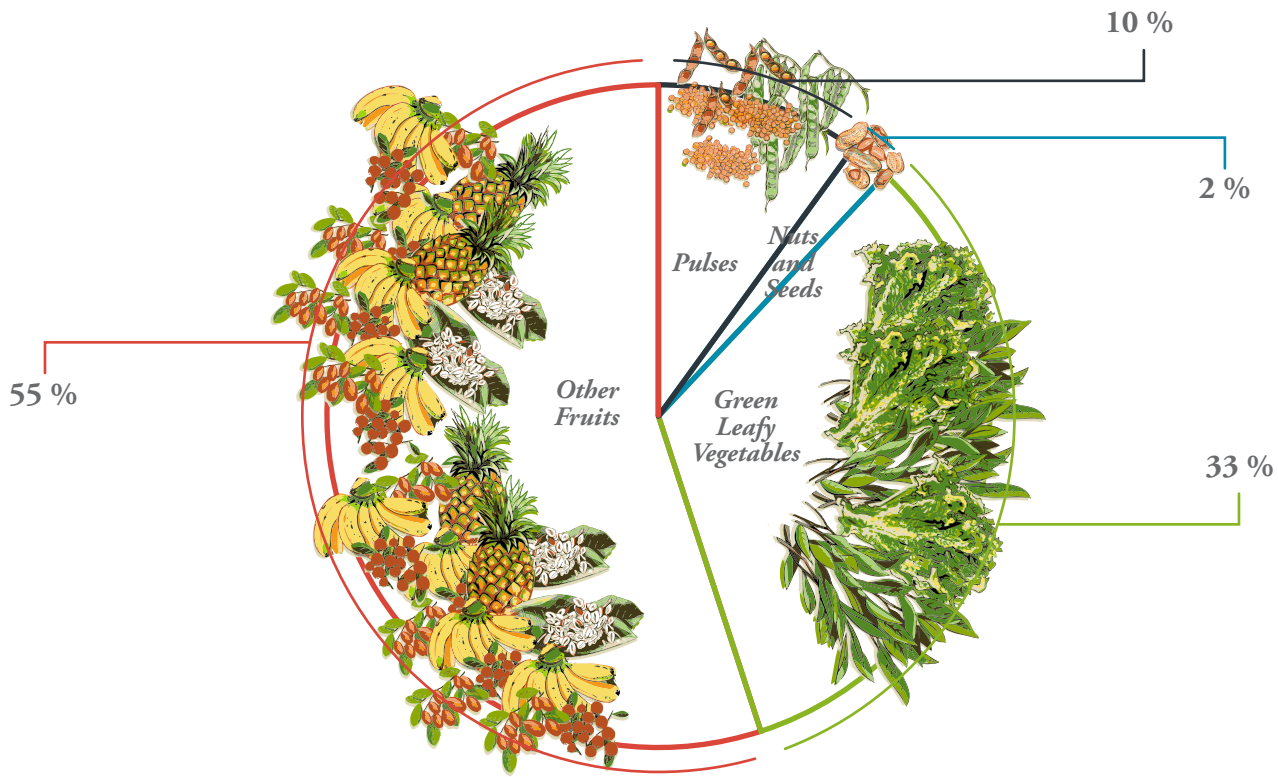


Figure 10: Prioritised food plants from Dewlieh

Pulses

Local Name	Scientific Name	Planting/ Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Months											
Rymbai Ja	*Vigna umbellata*	Planting			●	●								
		Harvesting	●											●
Ri Lyngknap Saw	*NA*	Planting			●									
		Harvesting									●	●	●	●
Ri Lyngknap Jyrngam	*NA*	Planting			●									
		Harvesting									●	●	●	●
Presbin	*Phaseolus vulgaris*	Planting	●	●										
		Harvesting						●	●					
Ri Phyrngop	*Phaseolus vulgaris*	Planting			●	●								
		Harvesting							●	●				

Nuts and Seeds

Local Name	Scientific Name	Planting/ Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Months											
Neilieh	*Perilla frutescens*	Planting			●	●								
		Harvesting											●	●

Green Leafy Vegetables

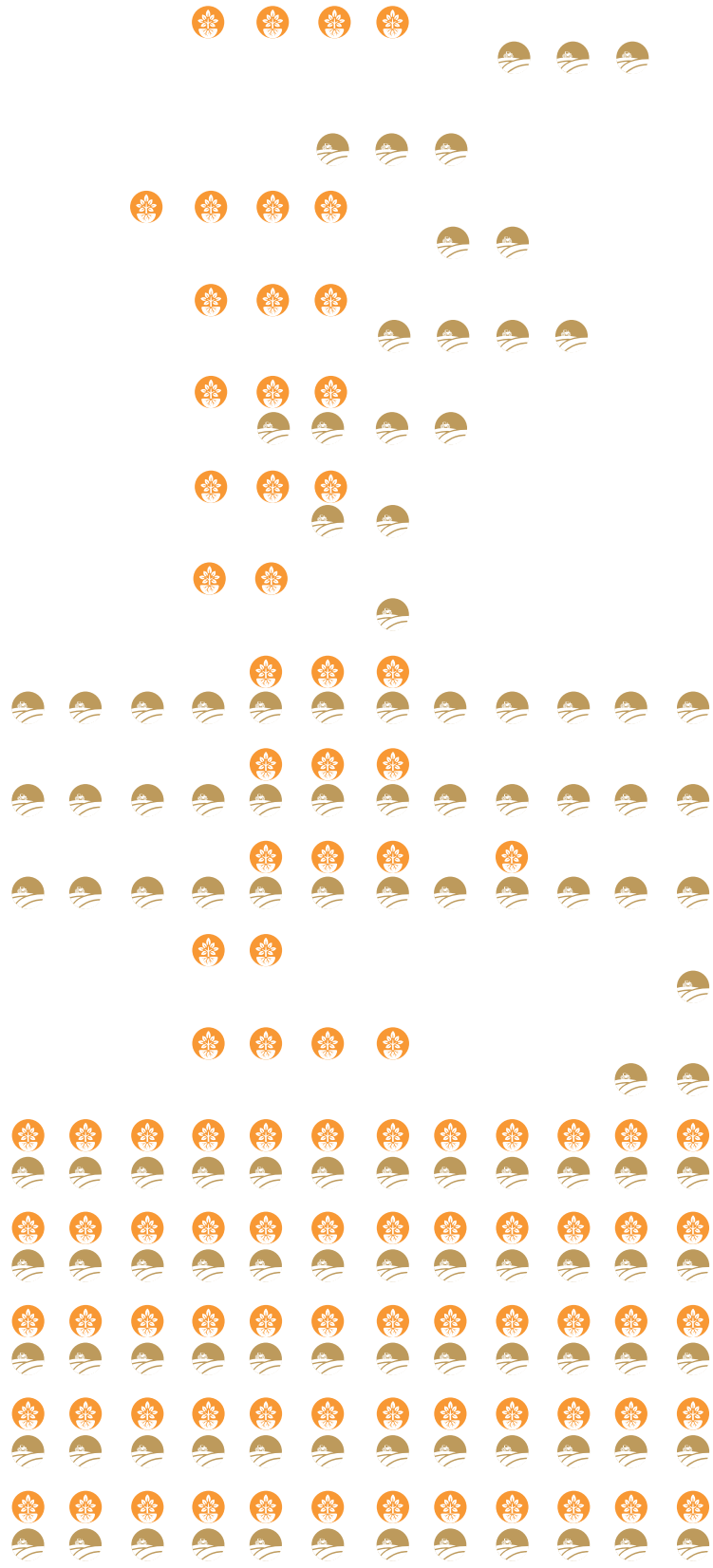
Local Name	Scientific Name	Planting/ Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Months											
Tyrso	*Brassica juncea*	Planting								●	●			
		Harvesting	●	●									●	●
Jaud	*Allium hookeri*	Planting		●	●	●								
		Harvesting					●	●	●	●	●	●	●	
Jamyrdoh	*Houttuynia cordata*	Planting				●	●	●	●					
		Harvesting					●	●	●	●	●	●		
Bat Pyllon (W)	*Centella asiatica*	Planting												
		Harvesting				●	●	●	●	●	●	●	●	
Jaiing	*Brassica nigra*	Planting		●	●									
		Harvesting					●	●	●	●				
Jajew Heh Sla (W)	*NA*	Planting												
		Harvesting	●	●	●	●	●	●	●	●	●	●	●	●
Jawieh (W)	*NA*	Planting												
		Harvesting	●	●	●	●	●	●	●	●	●	●	●	●
Jabuit (W)	*Polygonum muricatum*	Planting												
		Harvesting	●	●	●	●	●	●	●	●	●	●	●	●

Local Name	Scientific Name	Planting/ Harvesting
Jali (W)	*Gynura nepalensis*	Planting / Harvesting
Jalynniar (W)	*Sonchus arvensis*	Planting / Harvesting
Tangduma (W)	*NA*	Planting / Harvesting
Jajew Skhor Blang (W)	*NA*	Planting / Harvesting
Jasim (W)	*NA*	Planting / Harvesting
Jajew Maw/Jajew Kynih Syiar (W)	*Pothos curtizii*	Planting / Harvesting
Jakhria (W)	*Rhynchotechum ellipticum*	Planting / Harvesting
Jarain (W)	*Fagopyrum dibotrys*	Planting / Harvesting

Other Fruits

Local Name	Scientific Name	Planting/ Harvesting	Months											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Soh Langdkhur	*Morus australis*	Planting / Harvesting												
Sohshiah	*Rubus ellipticus*	Planting / Harvesting												
Sohkhawiong	*Rubus lasiocarpus*	Planting / Harvesting												
Sohphie Bah	*Myrica esculenta*	Planting / Harvesting												
Sohphie Liya (W)	*Myrica nagi*	Planting / Harvesting												
Sohkhyllam (W)	*Elaeocarpus prunifolius*	Planting / Harvesting												
Sohmad	*Citrus medica*	Planting / Harvesting												
Sohma (Mluh) (W)	*Rhus chinensis*	Planting / Harvesting												
Soh Khlur (W)	*Elaegnus pyriformis*	Planting / Harvesting												

Soh Pai Risang	*NA*	Planting / Harvesting
Soh Um (W)	*Syzygium cumini*	Planting / Harvesting
Soh Iong	*Prunus nepalensis*	Planting / Harvesting
Soh Tylliang	*NA*	Planting / Harvesting
Soh Lapong	*Ficus gibbosa*	Planting / Harvesting
Soh Shiat	*NA*	Planting / Harvesting
Soh Pdok	*Solanum torvum*	Planting / Harvesting
Kait Khar	*Musa sp.*	Planting / Harvesting
Kait Mon	*Musa paradisiaca*	Planting / Harvesting
Kait Shyieng	*Musa velutina*	Planting / Harvesting
Soh Lyngkjup	*NA*	Planting / Harvesting
Soh Priam	*Psidium guajava*	Planting / Harvesting
Soh Myndong	*NA*	Planting / Harvesting
Soh Kyrsiew	*NA*	Planting / Harvesting
Soh Khylwiat	*NA*	Planting / Harvesting
Soh Lyngwai	*NA*	Planting / Harvesting
Soh Phan	*Artocarpus heterophyllus*	Planting / Harvesting



N.B: *W: Wild plant; NA: Not available*

Umdiengpoh

The community from Umdiengpoh selected a total of 56 food plants for inclusion into the Mid-Day Meal program. Majority of these crops (>45%) are from the Other Fruits category followed by Green Leafy Vegetables (>40%). Vitamin A rich Fruits were not found in the village so no food plants were selected from this category. The least number of food plants came from Nuts and Seeds (<5%). The prioritized list of food plants included both cultivated as well as wild varieties.

Food Group	Number Of Food Plants
Green Leafy Vegetables	23
Pulses	5
Nuts and Seeds	2
Other Fruits	26
Total	56

N.B: ** Extra food group*

Table 12: Prioritised food group in Umdiengpoh

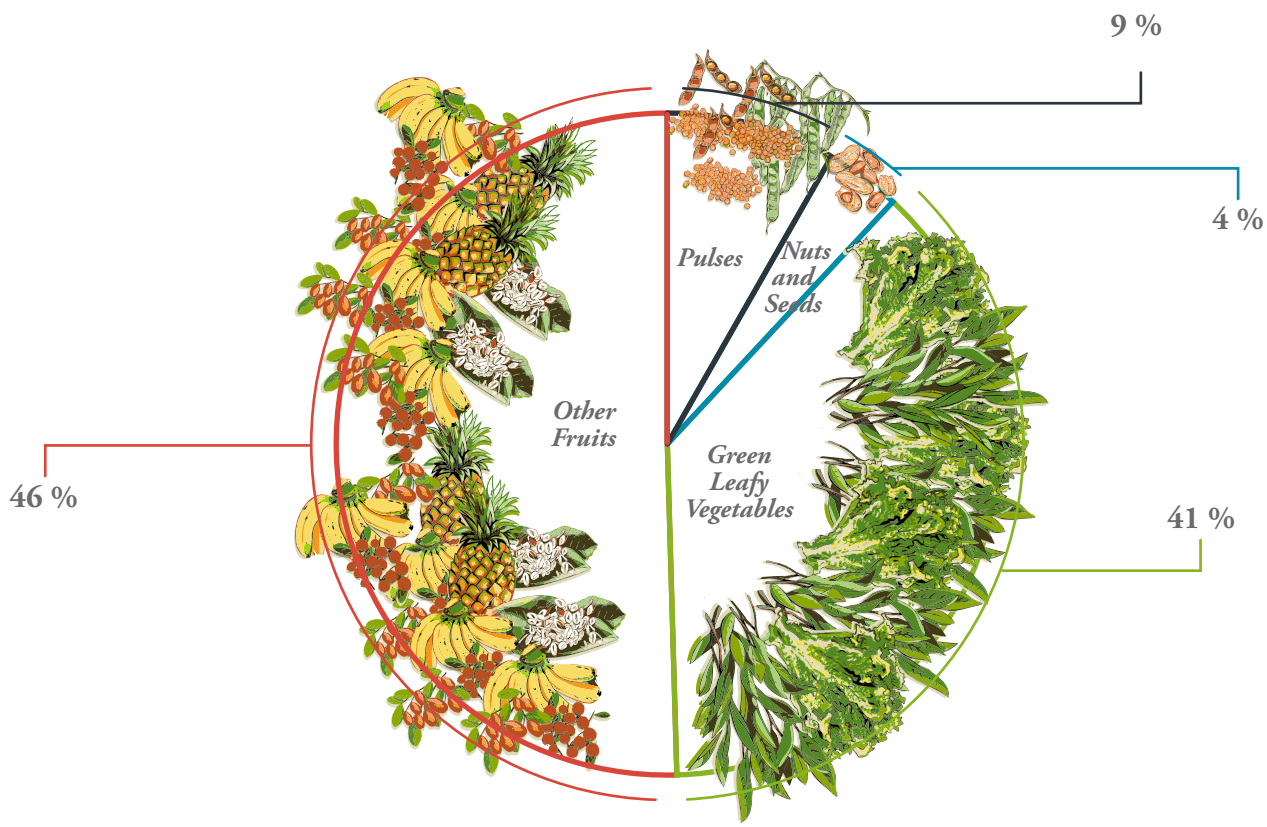


Figure 11: Prioritised food plants from Umdiengpoh

Pulses

Local Name	Scientific Name	Planting/ Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Months											
Rymbai Ja	*Vigna umbellata*	Planting				●	●							
		Harvesting											●	●
Motor Shana	*Pisum sativum*	Planting							●	●				
		Harvesting										●	●	
Motor Heh	*Pisum sativum*	Planting							●	●				
		Harvesting										●	●	
Motor Ri	*Pisum sativum*	Planting							●	●				
		Harvesting										●	●	
Ri Phyrngop	*Phaseolus vulgaris*	Planting							●					
		Harvesting										●	●	●

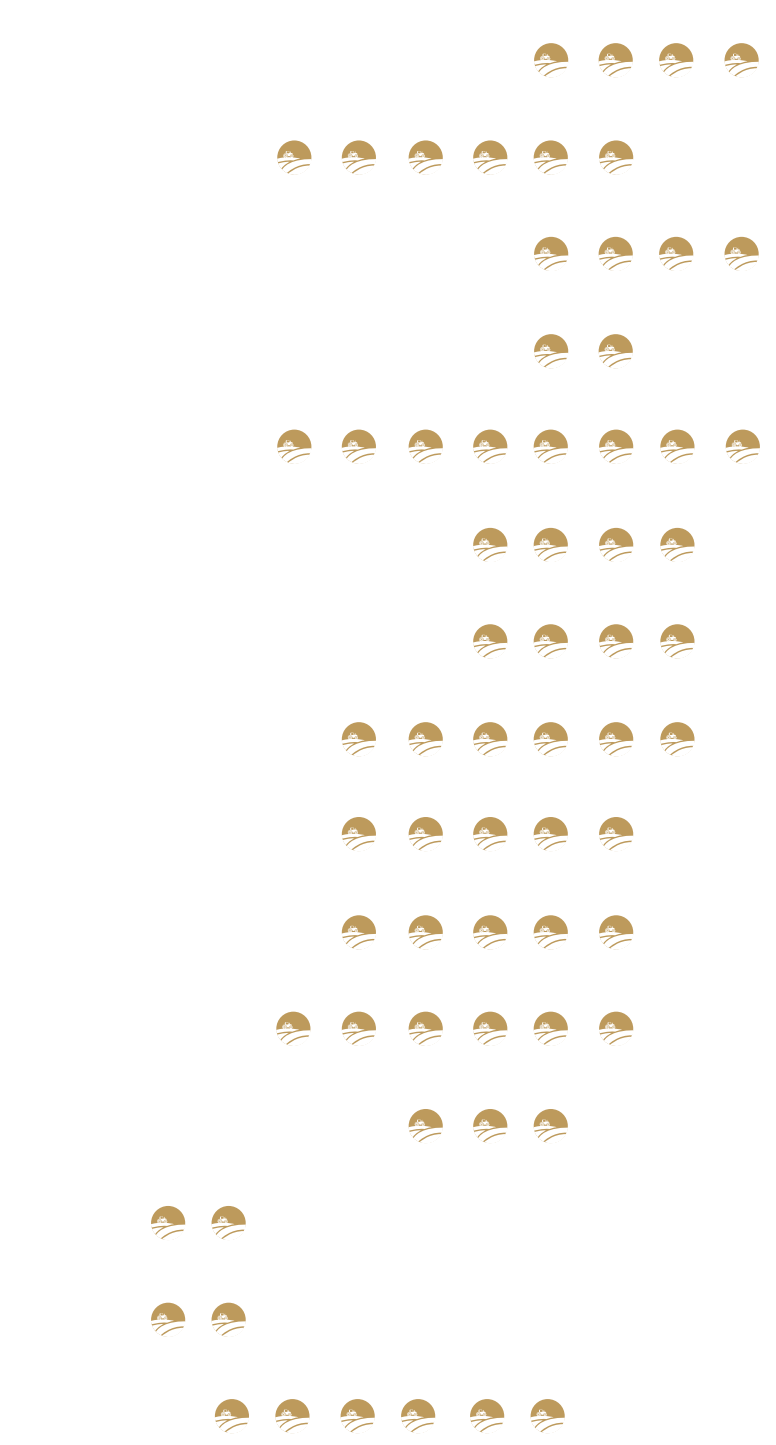
Nuts and Seeds

Local Name	Scientific Name	Planting/ Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Months											
Soh Ot (W)	*Castanopsis indica*	Planting	Wild											
		Harvesting											●	●
Neilieh	*Perilla frutescens*	Planting			●	●								
		Harvesting											●	●

Green Leafy Vegetables

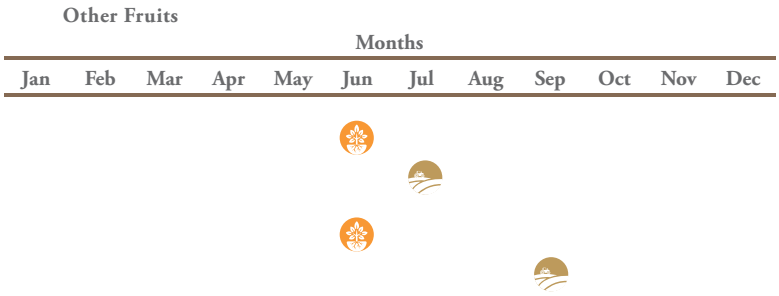
Local Name	Scientific Name	Planting/ Harvesting	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			Months											
Jasim (W)	*NA*	Planting												
		Harvesting	●	●							●	●	●	●
Jajew Kynih Syiar/ Jajew Maw (W)	*Pothos curtizii*	Planting												
		Harvesting									●	●	●	●
Salat	*Lactuca sativa*	Planting				●	●			●	●			
		Harvesting						●	●				●	●
Tyrso	*Brassica juncea*	Planting							●	●	●	●		
		Harvesting	●	●	●								●	●
Jaud	*Allium hookeri*	Planting			●	●	●	●	●	●				
		Harvesting			●	●	●	●	●	●				
Jamyrdoh	*Houttuynia cordata*	Planting		●	●	●	●	●	●	●				
		Harvesting			●	●	●	●	●	●	●	●		
Jatira (W)	*Oenanthe linearis*	Planting												
		Harvesting			●	●	●	●	●	●	●	●		
Bat Pyllon (W)	*Centella asiatica*	Planting												
		Harvesting			●	●	●	●	●	●	●	●		

Local Name	Scientific Name	Planting/ Harvesting
Tyrkhang Iong (W)	*Diplazium esculentum*	Planting / Harvesting
Jaiing (W)	*Brassica nigra*	Planting / Harvesting
Jajew Heh Sla (W)	*NA*	Planting / Harvesting
Jathang (W)	*Neilla thyrsiflora*	Planting / Harvesting
Jatwad (W)	*NA*	Planting / Harvesting
Jawieh (W)	*NA*	Planting / Harvesting
Latyrdop (W)	*NA*	Planting / Harvesting
Jabuit (W)	*Polygonum muricatum*	Planting / Harvesting
Jajew Khyndew (W)	*NA*	Planting / Harvesting
Jajew Rben (W)	*NA*	Planting / Harvesting
Jali (W)	*Gynura nepalensis*	Planting / Harvesting
Jalynniar (W)	*Sonchus arvensis*	Planting / Harvesting
Jalynnoh (W)	*Polygonum orientale*	Planting / Harvesting
Jahenwet (W)	*NA*	Planting / Harvesting
Jabar (W)	*NA*	Planting / Harvesting



Other Fruits

Local Name	Scientific Name	Planting/ Harvesting
Sohlyngdkhur	*Morus australis*	Planting / Harvesting
Sohphoh Nongkhlaw	*Pyrus communis*	Planting / Harvesting



Sohphoh Lakun	*Pyrus communis*	Planting / Harvesting
Sohshiah (W)	*Rubus ellipticus*	Planting / Harvesting
Sohkhawiong (W)	*Rubus lasiocarpus*	Planting / Harvesting
Sohpdung Ksuit	*NA*	Planting / Harvesting
Sohryngkham (W)	*Vaccinium graffithianum*	Planting / Harvesting
Sohphie Bah	*Myrica esculenta*	Planting / Harvesting
Sohphie Nam	*Myrica nagi*	Planting / Harvesting
Sohphie Liya	*Myrica nagi*	Planting / Harvesting
Sohlang Ja	*NA*	Planting / Harvesting
Sohshur	*Pyrus pashia*	Planting / Harvesting
Sohkhyllam (W)	*Elaeocarpus prunifolius*	Planting / Harvesting
Sohlyngkait	*Holboellia latifolia*	Planting / Harvesting
Sohphoh Khasi	*Docynia indica*	Planting / Harvesting
Sohkynphor Shrieh (W)	*Citrus dimorphocarpa*	Planting / Harvesting
Sohmad (W)	*Citrus medica*	Planting / Harvesting
Sohma (Mluh) (W)	*Rhus chinensis*	Planting / Harvesting
Soh Khlur (W)	*Elaegnus pyriformis*	Planting / Harvesting
Soh Pai Risang (W)	*NA*	Planting / Harvesting

Soh Um	*Syzygium cumini*	Planting	
		Harvesting	
Soh Iong (W)	*Prunus nepalensis*	Planting	
		Harvesting	
Soh Lapong (W)	*Ficus gibbosa*	Planting	
		Harvesting	
Soh Shiat (W)	*NA*	Planting	
		Harvesting	
Soh Pdok	*Solanum torvum*	Planting	
		Harvesting	

N.B: *W: Wild plant; NA: Not available*


2018

04
CONCLUSION

Chyne *et al* (2018) found that undernutrition (malnutrtion) was unacceptably high among the Khasis despite rich food biodiversity. In the five villages that are participating in the project the average food plants recorded is 120 and it ranged from a minimum of 87 food plants in Dewlieh to a maximum of 169 food plants from Latisohpliah. This includes both cultivated as well as wild varieties. Highest numbers of food plants (>20%) were found from the Other Fruits and Green Leafy Vegetables categories. Mawmithied and Laitsohpliah had the highest number of food plants from these categories. The lowest number of food plants was from the Nuts and Seeds category with Dewlieh having only one food plant under this category. Vitamin A Rich plants were missing from Umdiengpoh, Nongtraw and Dewlieh. Thus even though there is a high degree of agrbiodiversity it is concentrated in certain food groups while in others diversity can be augemented. Still, in general, agrobiodiversity is very high in the project villages.

At the same time the prevalence of malnurtion in the State of Meghalaya in general gives hint to the fact that there is a gap between agrobiodiversity and nutrition. NESFAS endeavours to bridge this gap with the partnership with GIZ being a latest step towards this direction. The Government of India has introduced nutritional intervention programs such as Integrated Child Development Services, Mid Day Meal, and the Public Distribution System will improve the nutrient intake and nutritional status of the population. In this particular project NESFAS is working to improve the Mid Day Meal program by supplementing the existing diet with food plants derived from the local agrobiodiversity.

After having listed the agrobiodiversity found in the community, members were asked to select food plants that would be prioritised for inclusion in the Mid Day Meal program. An average of 39 food plants was selected by the community. The highest number of food plants (56) is from Umdiengpoh while the lowest is from Nongtraw, only 15 food plants. The maximum numbers of food plants selected are from Green Leafy Vegetables and Other Fruits with the highest coming from Umdiengpoh. According to the methodology five food groups were given to the community for choosing the selected food plants, viz., Green Leafy Vegetables, Pulses, Nuts and Seeds, Vitamin A Rich plants and Other Fruits. Vitamin A Rich plants were missing from Umdiengpoh, Nongtraw and Dewlieh, so no food plants could be selected from these groups. Starchy Staples and Other Vegetables were not the prioritised food groups but communities of Nongtraw, Mawmithied and Laitsohpliah wanted them to be included. Food plants from the two extra groups were thus selected as well. Respective communities thus had an individual list based on local agrobiodiversity and prioritised food plants. Since the entire exercise was done in consultation and with participation of the community, sustainability of the initiative is assured.

To tackle the problem of nutrition in India Prime Minister Narendra Modi launched Poshan Abhiyaan to address problem of malnutrition by reducing stunting, low birth weight and anaemia amongst children, adolescent girls, pregnant and nursing mothers (The Times of India, 2018). In collaboration with GIZ NESFAS is trying to do its bid by linking the local agrbiodiversity with the Mid Day Meal program. This document is a contribution towards that and will help guide activities taken forward in realisation of that goal. Malnutriton free Meghalaya is very much possible and with support of GIZ and the local communities it will become a reality soon.

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Agrobiodiversity And Priority Food Plants For Inclusion In The School Mid Day Meal Program

Published by **NESFAS**
Kerie Ville, Arbuthnott Road, Behind Nazareth Hospital, Laitumkhrah, Shillong
Meghalaya 793003.

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