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# Wild Edible Plants as Pillars of Food Security: Insights from Indigenous Knowledge System of Adi Tribe of Arunachal Pradesh

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**Abstract:** The current research focuses on the indigenous knowledge regarding wild edible plants among the Adi tribe of Arunachal Pradesh. Upper Siang District, Siang District and East Siang District were the areas considered for this study. These districts have high biodiversity value and possess different types of wild edible plants which are widely used by indigenous populations for various purposes including food security. These plants contribute greatly towards the food security of these areas because sometimes access to cultivated plants can be difficult. Hence, the present research attempts to study these wild edible plants and their significance along with their uses among the indigenous population of the region. These plants are used for food and medicines and are very valuable sources of nutrition and medicine respectively. They have indigenous names given to them by the Adi tribe, thus, their documentation is important in order to sustain such traditional knowledge. The tribe uses wild edible plants as a source of their nutrition and these plants also serve as vegetables, fruits, spices and medicines. The other topic covered in the present paper is the role of wild edible plants as a source of food security. However, with all rapid changes caused by modernization, urbanization and deforestation, traditional knowledge regarding wild edible plants is deteriorating day by day.

### Introduction

Food security is one of the most pertinent issues facing the world today due to factors such as climate change, rapid population growth and economic instability that are posing challenges to ensuring stable access to nutritious food. It is in light of this fact that wild edible plants come into focus as another natural yet sustainable source of food. As part of our natural environment, but ignored in conventional farming practices, wild edible plants have formed an essential component of traditional diets for generations to generations. By understanding their value, we can improve food security, conserve biodiversity and adapt to climate change at the same time. In an era where global food security is under threat as a result of climate change, population growth, destruction of habitats and conflict, the role of

underutilized resources in improving food security has become increasingly prominent. Of particular interest amongst these resources are wild edible plants (WEPs). Naturally growing plant species that are consumed by local communities, WEPs have been used by humans for generations. Identifying the role of wild edible plants as one of the basic building blocks for ensuring food security is crucial for developing resilient, sustainable and culturally relevant food systems. Indigenous knowledge regarding wild edible plants must be recorded and archived for future use because it would otherwise get lost over time due to the impact of modernization. Wild Edible Plants and Food Security is discussed in terms of four aspects that contribute to food security; these include availability, access, utilization and stability. The Adi community has rich knowledge through names and classification of plant species along with information on edibility and processing techniques to mitigate toxins. The present paper seeks to explore the role of wild edible plants in food security in these three districts. Specifically, it aims to illustrate how wild edible plants support the four pillars: availability, access, utilization and stability amid the factors driving change such as road development, urbanization, climatic variation and market integration

- **Wild Edible Plants:** Wild edible plants are naturally growing plants that are found in the forest, fields, mountains, valleys and wetlands and they can be safely consumed by humans. These plants include leaves, roots, fruits, seeds, barks and flowers that provide essential nutrients. Some common examples are dandelions, wild garlic, nettles, chickweed, so on. Wild edible plants have been used for food, medicine and survival. However, proper identification is crucial as some wild plants can be toxic. Foraging should be done responsibly, ensuring sustainability and respect for nature. Wild edible plants are refer to species of plants that are neither cultivated nor domesticated but available from natural habitat and are used as sources of food. But these days many wild edible plants are cultivated by the tribal communities of Arunachal Pradesh.
- **Food Security:** Food security refers to the state in which all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Indigenous Knowledge System Indigenous Knowledge System refers to the traditional and local knowledge that is unique to a specific culture or society. It is passed down from generation to generation and is used by Indigenous communities to understand and interact with their environment. It includes knowledge about food, agriculture, medicine, ecology, spirituality, governance so on.
- **Indigenous Knowledge System on Wild Edible Plants:** Indigenous communities worldwide have long relied on wild edible plants for sustenance, medicines and cultural practices. The Adi tribe of Arunachal Pradesh too has indigenous knowledge to identify wild edible plants. The knowledge that has evolved through the years has shaped not only the food security but also the practices of ecological conservation. Unfortunately, however, modernization and even environmental and socio-cultural changes have resulted in a gradual decline of this invaluable asset. An understanding of the importance of Indigenous knowledge system on wild edible plants and factors contributing to its decline is extremely important. The knowledge about indigenous wild edible plants has been acquired through long years of practice with communities identifying nutritional and medicinal qualities of different species. They include:
  - **Identification and Classification:** Indigenous tribes develop special ways of classification according to the edibility and season of the plants.
  - **Sustainable Harvesting Practice:** There are special techniques used to guarantee sufficient population of the plants through rotation of harvesting and saving seeds.
  - **Culinary Uses:** Wild plants become part of the diet and may be consumed as staple foods, emergency food or even used as flavors.
  - **Medicinal Applications:** Some of the edible plants are also utilized as medicines.

#### Problem of the Statement

The role played by WEPs has yet to be fully appreciated within national nutrition and agriculture policy. These are viewed as minor forest products or non-timber forest products with no substantial effort being made towards documenting and conserving them or adding value to them. Such an attitude is causing Indigenous Knowledge System to decline posing a risk to biodiversity.

### Objectives

- Examine the role of wild edible plants as one of the pillars of food security.
- Documentation of indigenous knowledge on wild edible plants consumed by the Adi tribe.
- To discuss the strategies for revitalization and preservation of wild edible plants.

### Significance of the Study

The findings of this study make significant contributions to the fields of ethno-botany, food security and indigenous knowledge especially in demonstrating that WEPs as not simply add-ons, but rather, central components of adaptive food production systems. The importance of recognizing the value of Indigenous knowledge and ensuring congruence between local policies and national policies in matters of food, nutrition and biodiversity cannot be overlook. The findings would help the policy makers to draft appropriate policy for the protection and conservation of wild edible plants.

### Methodology

The methodology of the study is qualitative, interdisciplinary and involves a combination of knowledge gained through ethno-botany, food security research and Indigenous Knowledge Systems. Since local knowledge plays an integral part in the subject matter, the methodological approach relies heavily on ethnographic and literature approaches. It is important to note that the study seeks to understand the knowledge on wild edible plants of the Adi tribe. In this study, the researcher collected and analysed the data through indigenous perspective as well. Local markets and forest of Upper Siang District, Siang District and East Siang district were visited. The secondary data were collected from the published articles.

### Role of Wild Edible Plants as One of the Pillars of Food Security

There are four dimensions of food security and the wild edible plants act as one of the contributors to food security and they are as follows:

- **Food Availability:** Supplementing and diversifying the food supply

Wild edible plants increases the overall availability of food especially in areas where conventional agriculture may be limited by poor soils, erratic rainfall or lack of inputs. These plants often thrive in diverse ecosystems without requiring irrigation, fertilizers or pesticides. Wild edible plants are not only ecological assets but they also act as buffer against food shortages and crop failures. They contribute significantly during periods of distress especially when food is scarce due to changes in the climate or during occurrence of natural disasters. Wild edible plants provide necessary nutrition and diversify people's diets through their provision as a natural food source. Wild edible plants are known to be very resilient to climatic changes. As opposed to commercially grown crops or crops grown in farms, wild edible plants are very adaptive to extreme climatic conditions like drought and extremely cold or hot climates. Their natural resilience makes them a sustainable food source particularly in regions facing erratic weather patterns and soil degradation. Many wild edible plants are adapted to local climates and conditions making them resilient to pests, diseases and climate variability. Their ability to thrive under stress conditions makes them a sustainable option in regions experiencing increasing droughts, floods and temperature fluctuations. For instance, wild ferns and indigenous leafy greens persist in dry seasons when cultivated crops often fail. Wild edible plants act as emergency and provide food for survival in times of crisis. In times of famine, war or natural disasters, WEPs serve as an emergency food source for vulnerable populations. Communities with traditional knowledge of WEPs can rely on them when conventional food systems collapse. For example, on 15th August 1950 a big earthquake of 8.7 magnitudes hit Arunachal Pradesh and its epicenter was located in the Mishmi Hills during which both Adi belt and Mishmi belt faced huge destruction. Due to the earthquake the Adi belt areas had face famine like situation. Many faced food shortages because of which hundreds of people died. During that famine it is said that it is the wild edible plants that helped people to survive those famine like situation. WEPs also help in maintaining bio diversity and sustainability. The use of WEPs promotes biodiversity by preserving native plant species reducing dependence on monoculture farming and minimizing environmental degradation.

- **Food Access:** Supporting Livelihoods and Local Economies

Food security is not only about producing enough food but also about ensuring people can access it. Wild edible plants enhance food access in both direct and indirect ways.

- **Direct Consumption and Sustenance:** For rural and indigenous populations, gathering wild edible plants from forests and wild lands is often a regular part of subsistence. In some communities, wild fruits, nuts, seeds, tubers and leafy greens are foraged and consumed daily. This provides households with a source of nutrition that requires no financial expenditure and it helps especially in times of economic hardship. Harvesting and selling WEPs can also provide an additional income source for rural population, supporting local economies and reducing poverty.
- **Enhancing Food Sovereignty and Economic Opportunities:** Incorporating wild plants into local diets can reduce dependence on imported food enhancing the food sovereignty. Communities can harvest and grow the plants sustainably to create income streams through selling the products from the plants. Such products include the herbal tea, supplements and organic food. Wild edible plants including mushrooms, wild berries, baobab fruits and shea nuts among others are sold at the local or regional markets. They provide a source of income especially for women who engage in their collection, processing and marketing. The provision of income is crucial since it helps individuals meet their basic needs to purchase other items. The promotion of wild edible plants could also preserve the indigenous knowledge system.
- **Cultural and Social Value:** The collection and use of wild edible plants have cultural significance to many societies. They are used in various practices, traditional medicine and festivals among others and hence, play a role in preserving the community's culture. Having access to such culturally important food it plays a very important role in food security in terms of social aspect.
- **Utilization:** Nutritional and Health Benefit of Wild Plants  
Utilization is the body's capability to make full use of the eaten food, which is determined by food nutritional value, safety and quality. The plants consumed from the wilderness are usually very nutritious and contribute greatly towards overcoming nutrient deficiencies that occur commonly in most developing countries.
- **Nutritive Components:** A good number of WEPs tend to be high in vitamins, minerals, antioxidants and fiber. Some examples include: Moringa leaves are known to have plenty of vitamin A, iron and calcium. Wild berries are known to be high in vitamin C and other antioxidants. Amaranth leaves are rich in proteins, iron and magnesium. Tamarind is a good source of vitamin C and dietary fiber. Many people in various communities have been utilizing WEPs as remedies over time.

#### Nutritional and Health Benefits of Wild Edible Plants

Most wild edible plants contain valuable nutrients that may even outweigh their cultivated counterparts in their vitamin, mineral, fiber and antioxidant contents, resulting in a healthy diet and improved well-being. For instance, Nettle (*Urtica dioica*), containing iron, magnesium and vitamin K, can improve the health of your blood. Such nutrients can be particularly vital in areas where the variety of food is limited. Eating such plants in your diet helps to prevent malnutrition among children and pregnant mothers, since some essential nutrients are absent from staple diets.

**Medicinal Properties:** Some wild plants also have health benefits that contribute to health security. For instance, neem, turmeric and ginger have antimicrobial and anti-inflammatory effects. Knowledge systems used in traditional medicine contain plenty of information about the application of wild plants for treatment purposes and provide an alternative way for healthcare provision, especially in remote areas where facilities are unavailable. However, one should be cautious while eating WEPs as they can also be harmful. Despite the benefits, wild edible plants can be dangerous when you eat them without prior knowledge.

- **Stability:** Sustaining Food Systems in the long term  
Stability refers to the ability of a food system to maintain availability and access over time. Wild edible plants support long-term food security by reinforcing ecosystem functions reducing dependency on external inputs and supporting adaptive capacity in the face of shocks.
- **Ecosystem Services:** Wild Edible Plants often form part of multifunctional landscapes that support pollination, soil health, water regulation and carbon sequestration. Maintaining wild plants diversity helps ecosystems remain resilient which in turn sustains agriculture and food

systems. For example, forests that harbor wild fruit trees or edible roots also support wildlife, control erosion and regulate water cycles.

- **Agro Ecological Integration:** Some Wild edible plants can be semi-domesticated or integrated into agro-forestry systems, home gardens and mixed farming approaches. This blurs the line between 'wild' and 'cultivated' and creates multifunctional spaces that combine conservation and production. For example, some farmers in Ethiopia, plants ensete (false banana), a wild relative of banana in backyard gardens act as reserve food source. The root of this banana is used for food and other purposes.
- **Conservation and Climate Adaptation:** Promoting Wild Edible Plants align with biodiversity conservation goals and climate adaptation strategies. Protecting habitats that support wild edible species ensures genetic diversity which may be vital for breeding climate –resilient crops in the future. Participatory conservation approaches where communities protect and manage local ecosystems can strengthen both food security and environmental stewardship.

#### **Documentation of indigenous knowledge on wild edible plants consumed by the Adi tribe of Arunachal Pradesh**

There are hundreds of wild edible plants found and consumed by Adi community of Arunachal Pradesh. Some of them are as follows:



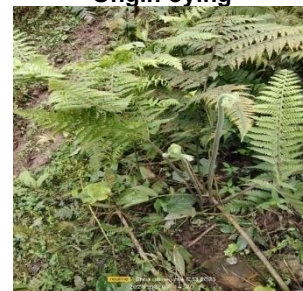
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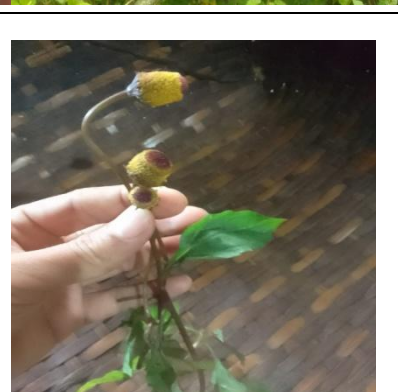




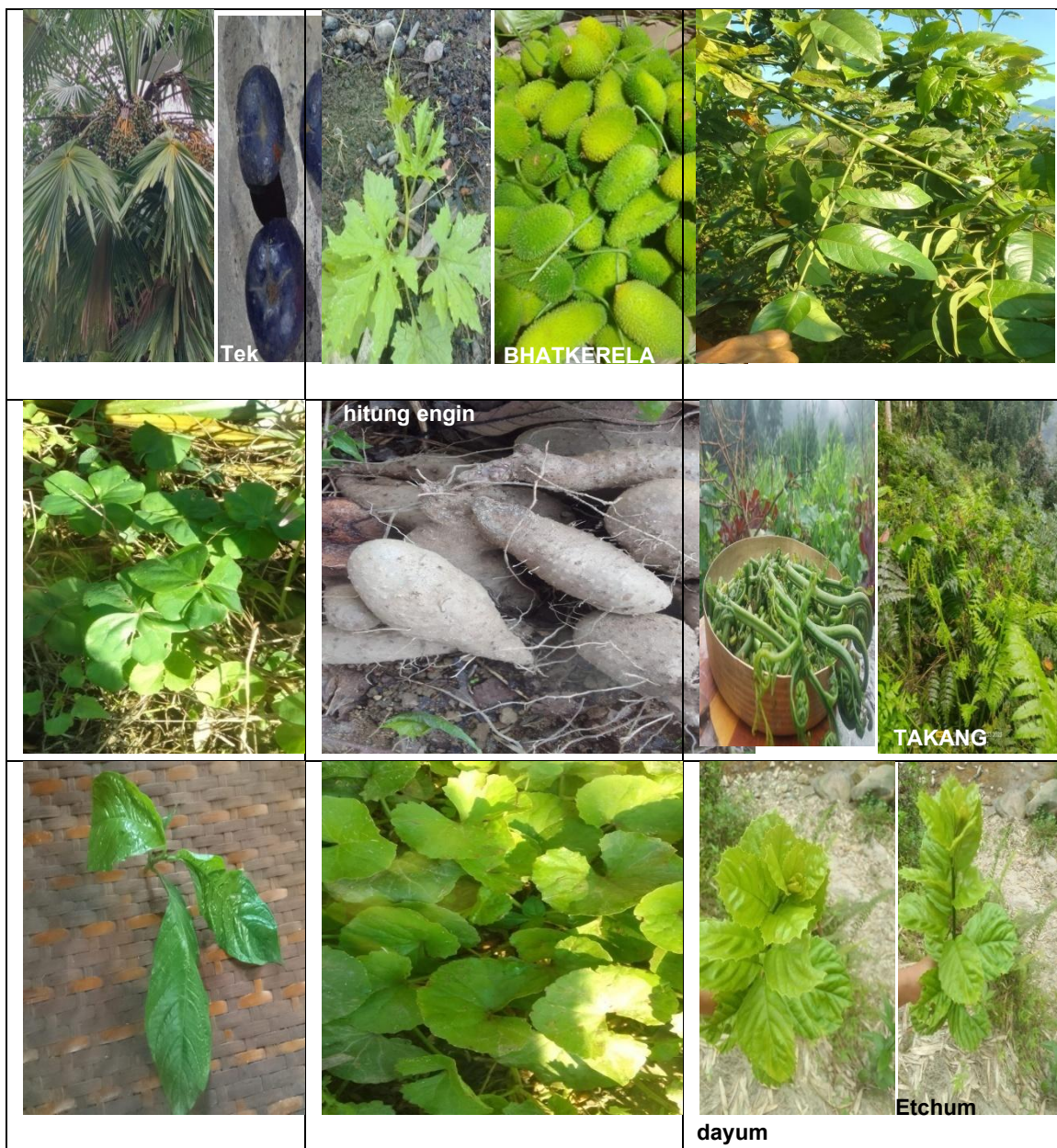












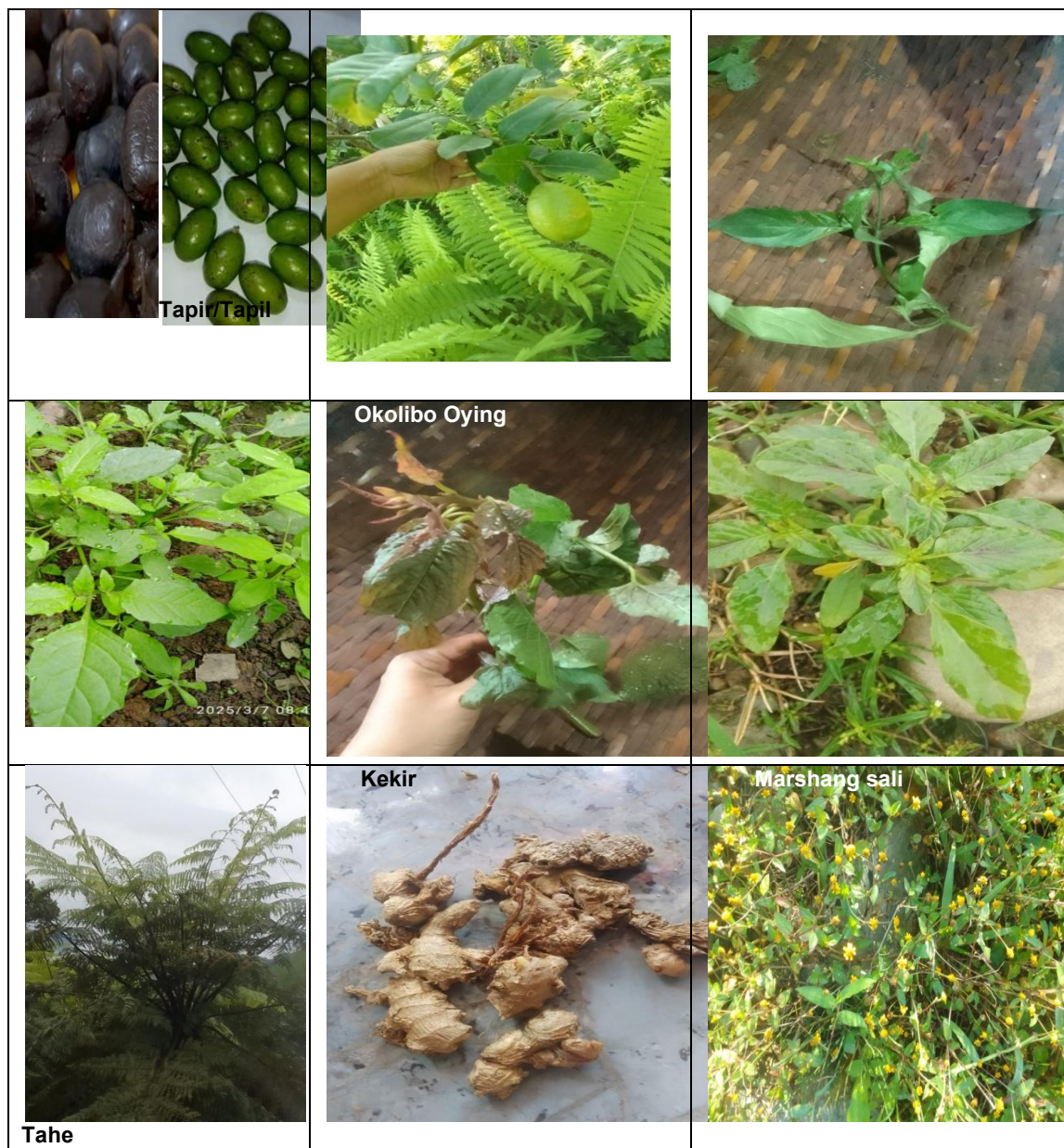


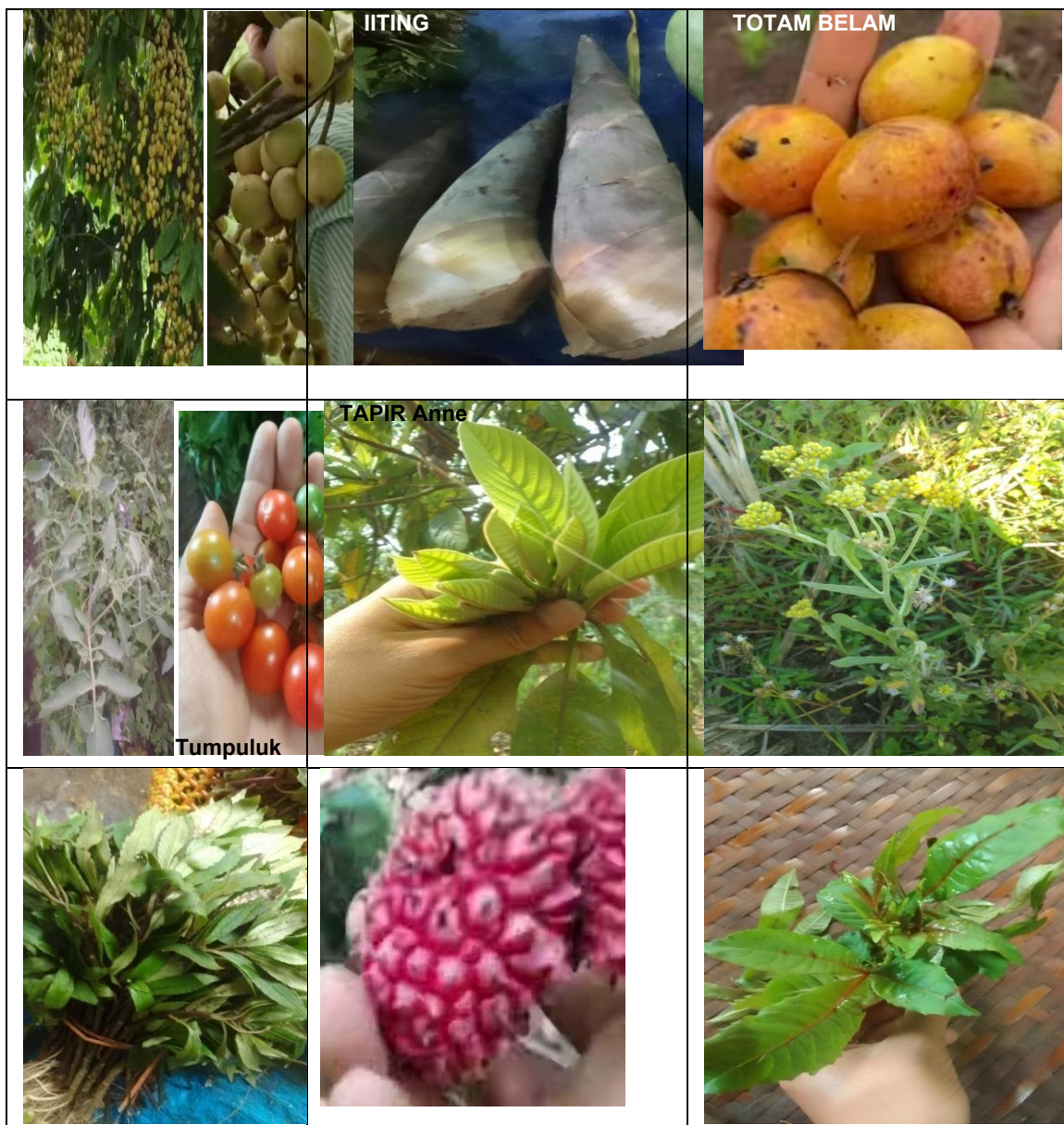


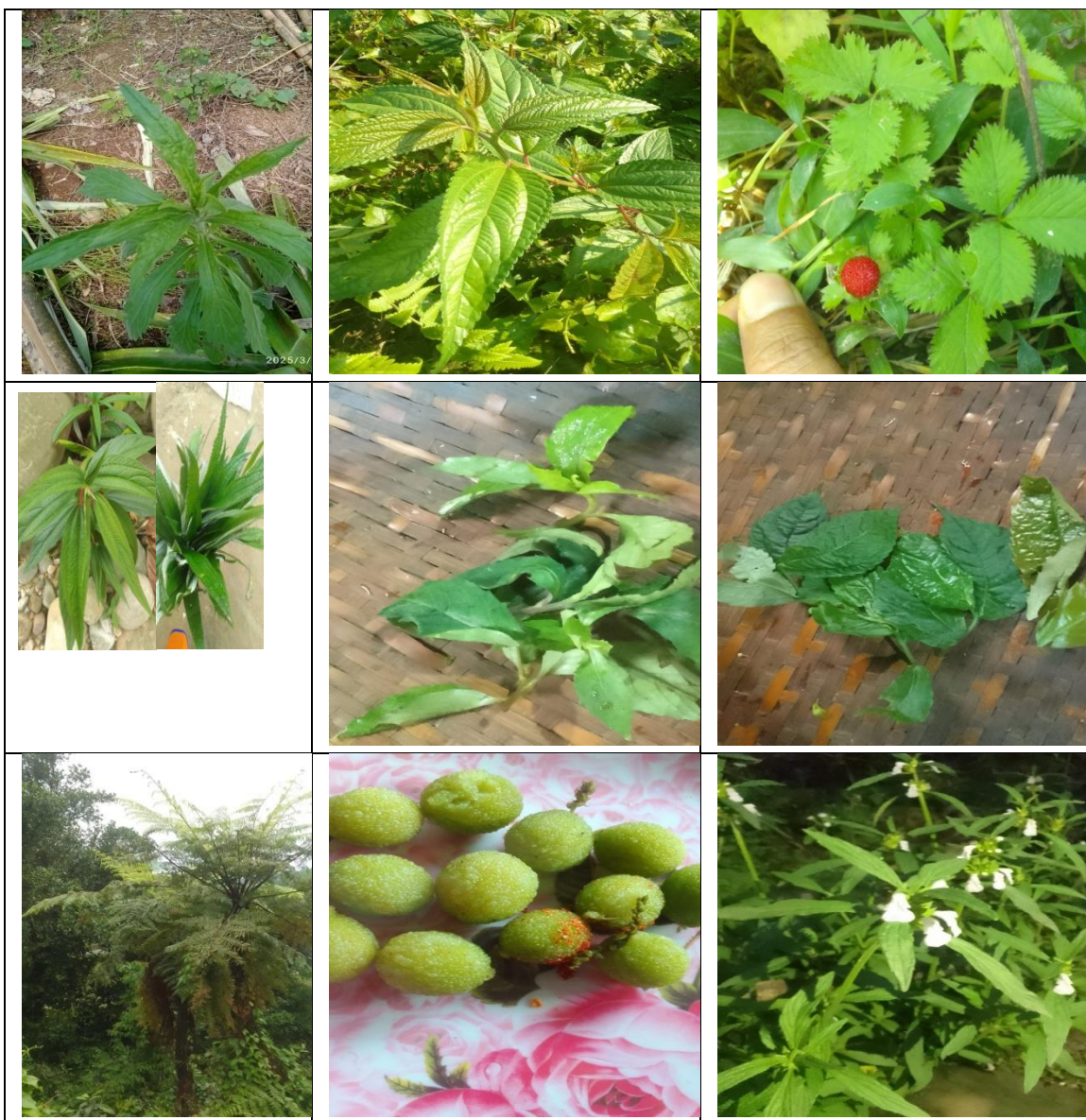
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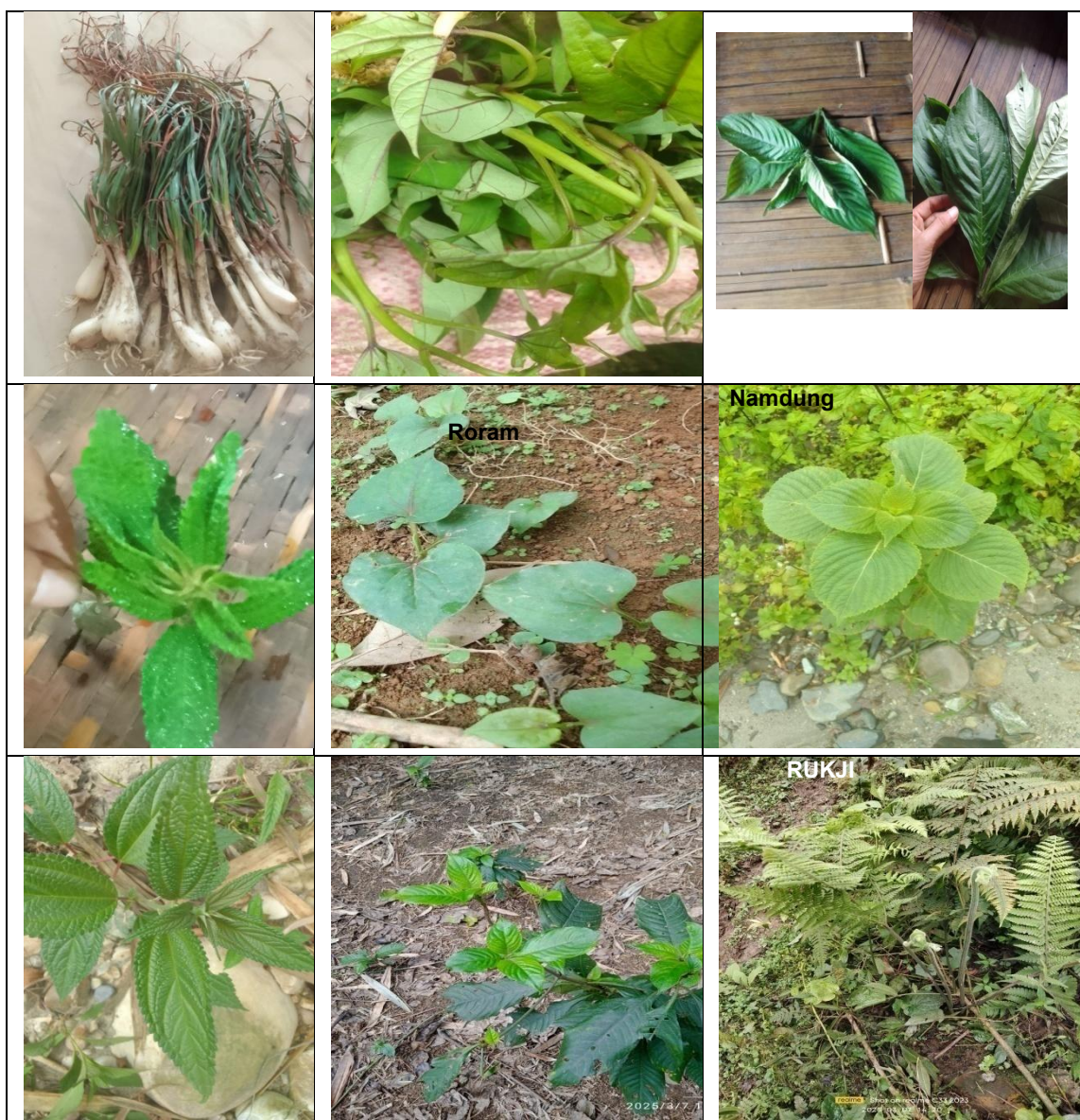












Some of the wild edible plants found in the Adi community belt with Botanical names are as follows:

| Sl. No. | Botanical Name and Family                       | Family        | Adi Local Name | Parts used and Methods of preparation | Other information                                     |
|---------|-------------------------------------------------|---------------|----------------|---------------------------------------|-------------------------------------------------------|
| 1       | <i>Alpinia allughas</i> Retz.                   | Zingiberaceae | Taling         | Tender stems are eaten raw or boiled. |                                                       |
| 2       | <i>Alternanthera sessilis</i> (L) R.Br.ex. D.C. | Amaranthaceae |                |                                       | Tender shoots are use for liver ailment and dysentery |
| 3.      | <i>Amaranthus caudatus</i> L.                   | Amaranthaceae |                |                                       |                                                       |

|     |                                             |                  |             |                                                                                                     |                                                                                         |
|-----|---------------------------------------------|------------------|-------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 4.  | <i>Amaranthus polygonoides</i> L            | Amaranthaceae    |             |                                                                                                     |                                                                                         |
| 5.  | <i>Amaranthus spinosus</i> L                | Amaranthaceae    |             |                                                                                                     |                                                                                         |
| 6.  | <i>Amaranthus tricolor</i> L                | Amaranthaceae    |             |                                                                                                     |                                                                                         |
| 7   | <i>Amaranthus viridis</i> L                 | Amaranthaceae    |             |                                                                                                     |                                                                                         |
| 8   | Aromatic Litsea                             | Lauraceae        | Tayir/Rayil | Eaten raw with rice. Can make chutney as well. Dried and powdered tayir are boiled with dried meat. |                                                                                         |
| 8   | <i>Bacopa monnieri</i> (L.) Penn.           | Scrophulariaceae |             |                                                                                                     |                                                                                         |
| 9   | <i>Bischofia javanica</i> Blume             | Euphorbiaceae    |             |                                                                                                     |                                                                                         |
| 10  | <i>Bombax ceiba</i> L.                      | Bombacaceae      |             |                                                                                                     |                                                                                         |
| 11  | <i>Calamus rotang</i> L.                    | Arecaceae        |             |                                                                                                     |                                                                                         |
| 12  | <i>Callicarpa rubella</i> Lindl.            | Verbenaceae      |             |                                                                                                     |                                                                                         |
| 13  | <i>Centella asiatica</i> (L.) Urban         | Apiaceae         |             |                                                                                                     |                                                                                         |
| 14  | <i>Chenopodium ambrosioides</i> L           | Chenopodiaceae   |             |                                                                                                     |                                                                                         |
| 15. | <i>Cinnmomum tamala</i> Nees.               | Lauraceae        |             |                                                                                                     |                                                                                         |
| 16  | <i>Citrus medica</i> L.                     | Rutaceae         | Singkin     | Eaten raw with chillies                                                                             |                                                                                         |
| 17  | <i>Clerodendrum glandulosum</i>             | Verbenaceae      | Ongin       | Leaves are eaten as vegetable. It is bitter in taste.                                               | Sometime used as medicine to control high blood pressure.                               |
| 18  | <i>Clerodendrum viscosum</i> Vent.          | Verbenaceae      | oying       | Tender leaves are eaten as vegetable                                                                | Leaves are used for preparation of yeast.                                               |
| 19  | <i>Colocasia esculanta</i> (L.) Schott      | Araceae          | Ange        | Tender leaves and stems are cook and eaten                                                          |                                                                                         |
| 20  | <i>Commelina benghalensis</i> L.            | Commelinaceae    | oying       | Leaves are use in making curry. It can be fried also.                                               |                                                                                         |
| 21  | <i>Costus Speciosus</i> (Koen ex. Retz.) Sm | Zingiberaceae    | Insulin Ane | Stems and roots are eaten raw                                                                       | It is used in treating jaundice and diabetic patient.                                   |
| 22  | <i>Cyclosorus extensa</i> (Blume) Ching     | Thelypteridaceae | Rukji       | Tender leaves are boiled with other wild leafy vegetables.                                          | Leaves are used in occult practice.                                                     |
| 23  | <i>Dendrocide sinuate</i> (Blume) Chew      | Urticaceae       | Buyinbugang | Leaves are boiled and eaten                                                                         | Root for intestinal worms                                                               |
| 24  | <i>Desmodium triquetrum</i> (L.) D.C        | Fabaceae         |             | Dried leaves are used as tea                                                                        |                                                                                         |
| 25  | <i>Dillenia indica</i> L.                   | Dilleniaceae     | Sompa       | Fruit is eaten raw with dried chillies and it is often boiled with fish .                           | Fresh fruit is good for diabetes and the mucilage of the fruit is use for washing hair. |
| 26  | <i>Diplazium esculentum</i>                 | Athyriaceae      | Takang      | Tender leaves are cooked and are eaten                                                              |                                                                                         |

|    |                                                 |                  |           |                                                                                            |                                                                                                                                                                                                                                |
|----|-------------------------------------------------|------------------|-----------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 27 | <i>Drymaria cordata</i>                         | Carryophyllaceae |           | Shoots are cooked with small fish                                                          | It is good for sinusitis and in cuts and wounds.                                                                                                                                                                               |
| 28 | <i>Eichhornia crassipes</i> ( Mart.) Solms      | Pontederiaceae   |           | Flowers are baked and eaten                                                                | Can be use as organic manure                                                                                                                                                                                                   |
| 29 | <i>Embellia subcorinaceae</i> ( Clarke). Mez    | Myesinaceae      |           | Leaves are cooked and eaten as vegetable.                                                  |                                                                                                                                                                                                                                |
| 30 | <i>Erechthites valerianaefolia</i> ( Wolf.) DC. | Asteraceae       | Ogen      | Tender leaves are boiled with other wild leafy vegetables and are eaten.                   |                                                                                                                                                                                                                                |
| 31 | <i>Eryngium foetidum</i> L.                     | Apiaceae         | Ori Ritak | Aromatic : Leaves are eaten raw in vegetable salad and cooked with chicken and other meat. |                                                                                                                                                                                                                                |
| 32 | <i>Ficus auriculata</i> Lour.                   | Moraceae         |           | Leaves are cooked with pork or chicken. Ripe fruits are eaten.                             |                                                                                                                                                                                                                                |
| 33 | <i>Ficus hispida</i> L.f.                       | Moraceae         | Taji'g    | Tender leaves and shoots are eaten cooked with pork meat. Ripe fruits are eaten            |                                                                                                                                                                                                                                |
| 34 | <i>Ficus racemosa</i> L.                        | Moraceae         |           | Tender shoots and green fruits are cooked and eaten with meat.                             |                                                                                                                                                                                                                                |
| 35 | <i>Ficus semicordata</i> Buch Ham.ex Sm         | Moraceae         | Takuk     | Tender leaves and shoots are eaten with meat . Ripe fruits are eaten.                      |                                                                                                                                                                                                                                |
| 36 | <i>Fragraria indica</i> ( Andrew ) Focke        | Rosaceae         |           | Ripe fruits are red and are eaten raw.                                                     |                                                                                                                                                                                                                                |
| 37 | <i>Garcinia Morella</i> ( Gaetn.) Desr.         | Clusiaceae       |           | Ripe fruits are eaten and it is sour in taste.                                             |                                                                                                                                                                                                                                |
| 38 | <i>Grewia hirsute</i> Vahl.                     | Tiliaceae        |           | Ripe fruits are eaten.                                                                     |                                                                                                                                                                                                                                |
| 39 | <i>Hedyotis diffusa</i> Willd.                  | Rubiaceae        |           | Leaves are cooked with other wild edible leaves.                                           |                                                                                                                                                                                                                                |
| 40 | <i>Hedyotis scandens</i> Roxb.                  | Rubiaceae        |           | Leaves are cooked with other wild edible leaves.                                           |                                                                                                                                                                                                                                |
| 41 | <i>Hodgsonia macrocarpa</i> ( Blume) Cogn.      | Cucurbitaceae    |           | Kernel of seeds are eaten as chutney but excess consumption may lead to gastritis.         |                                                                                                                                                                                                                                |
| 42 | <i>Houttuynia cordata</i> Thunb.                | Saururaceae      | Roram     | Eaten as salad or chutney.                                                                 | Used in gastrointestinal problems and it is used as herbal medicine to cure stomach related problems. It is good for diuresis (an increase in the amount of urine made by the kidney and passed from the body) detoxification. |

|    |                                                              |                 |                   |                                                                         |                                                                                                                                           |
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| 43 | Hydrocotyl<br>sibthorpioides<br>Lamk.                        | Apiaceae        |                   | Eaten as chutney.                                                       | Have medicinal<br>benefits. It is good<br>for gastrointestinal<br>problems, liver<br>tonic, memory<br>enhancer and in<br>wounds and cuts. |
| 44 | Ipomoea aquatic<br>Forsk                                     | Convolvulaceae  |                   | Shoots boiled as<br>vegetable.                                          | Use as pig feed.                                                                                                                          |
| 45 | Kalanchoe<br>pinnatum Lamk.<br>Pers.                         | Crassulaceae    |                   | Leaves are eaten as<br>chutney.                                         | Used for curing<br>kidney stone and<br>constipation.                                                                                      |
| 46 | Lasia spinosa ( L.) Thw.                                     | Araceae         |                   | New shoots and leaves are<br>eaten boiled with small<br>fish.           | Pig feed                                                                                                                                  |
| 47 | Leucas plukenetii<br>( Roth) Spreng                          | Lamiaceae       |                   | Leaves are cooked with<br>other vegetables or meat<br>or small fishes.  | Juice of the<br>leaves are use for<br>treating sinusitis.                                                                                 |
| 48 | Mackaya<br>neesiana Nees.                                    | Acanthaceae     | Obur Oying        | Tender shoots and leaves<br>are boiled and eaten.                       |                                                                                                                                           |
| 49 | Melastoma<br>malabathricum L.                                | Melastomataceae | Beyo              | Tender are leaves are<br>boiled and eaten .                             | Leaves are also<br>used in<br>preparation of<br>yeast culture for<br>rice beer.                                                           |
| 50 | Meliosma pinnata<br>Roxb.                                    | Meliosmaceae    |                   | Tender leaves are cook<br>and eaten.                                    |                                                                                                                                           |
| 51 | Meliosoma<br>simplicifolia ( Roxb) Walp.ssp<br>simplicifolia | Sabiaceae       |                   | Tender leaves are cook<br>with pork or small fish.                      |                                                                                                                                           |
| 52 | Momordica<br>cochinchineusis ( Lour.) Spreng                 | Cucurbitaceae   | Bhat kerela       | Fruits and tender leaves<br>are cooked and eaten.                       | These days it is<br>domesticated.                                                                                                         |
|    | Moringa Oleifera                                             | Moringaceae     | Sajna             | Tender leaves, flowers and<br>drumstick are boiled / fried<br>and eaten |                                                                                                                                           |
| 53 | Mukuna pruriens<br>(L.) D.C.                                 | Fabaceae        |                   | Seeds are cooked and<br>eaten.                                          |                                                                                                                                           |
| 54 | Musa velutina<br>Wendl. And<br>Drude                         | Musaceae        | Nyomrang<br>Kopak | Banana is eaten cooked or<br>steamed.                                   | Pig feed                                                                                                                                  |
| 55 | Myrica esculenta<br>Ham. ex Don                              | Myricaceae      | Tenga             | Fruits are eaten with dry<br>chilly powder.                             |                                                                                                                                           |
| 56 | Natsiatum Buch.-<br>Ham. Ex Arn.                             | Icacinaeae      |                   | Tender shoots and leaves<br>are eaten after cooked.                     |                                                                                                                                           |
| 57 | Nymphaea rubra<br>Roxb.ex.Andrews                            | Nymphaeaceae    |                   | Fruits and roots are<br>cooked and eaten. Seeds<br>can be eaten raw.    |                                                                                                                                           |
| 58 | Oxalis coniculata<br>L.                                      | Oxalidaceae     |                   | Tender shoots and leaves<br>are eaten.                                  |                                                                                                                                           |
| 59 | Oxalis debilis<br>H.B.K. var.<br>corymbosa ( D.C.) Lour.     | Oxalidaceae     |                   | Leaves and petiole are<br>eaten both raw and cooked<br>with fish.       |                                                                                                                                           |
| 60 | Paederia<br>scandens ( Lour)<br>Merr.                        | Rubiaceae       |                   | Shoots are cooked small<br>fish and eaten.                              |                                                                                                                                           |
| 61 | Passiflora edulis                                            | Passifloraceae  | Passion aiye      | Fruits are eaten.                                                       |                                                                                                                                           |
| 62 | Phlogocanthus<br>thrysiflorus Nees.                          | Acanthaceae     |                   | Tender flower are eaten.                                                |                                                                                                                                           |

|    |                                         |               |              |                                                                                     |                                                                          |
|----|-----------------------------------------|---------------|--------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 63 | Phlogocanthus trysiformis (Hard.) Mabb. | Acanthaceae   |              | Inflorescence eaten fried or as chutney.                                            | Leaves and flowers are used for treating asthma.                         |
| 64 | Phyllanthus emblica L.                  | Euphorbiaceae | Amlaki       | Fruits are eaten raw or as chutney and pickles are also made from the fruits.       |                                                                          |
| 65 | Phyllanthus fraternus Webst.            | Euphorbiaceae |              | Tender leaves and fruits are eaten raw as well cooked.                              |                                                                          |
| 66 | Piper longum L.                         | Piperaceae    |              | Leaves are use in cooking to give aroma to the vegetable.                           |                                                                          |
| 67 | Piper thomsonii Hook.f.                 | Piperaceae    |              | Leaves are eaten with beetle nut.                                                   |                                                                          |
| 68 | Plectranthus ternifolius Don.           | Lamiaceae     |              | Pungent in nature. Leaves are cooked and eaten.                                     |                                                                          |
| 69 | Polygonum chinensis L.                  | Polygonaceae  |              | Tender leaves and shoots are eaten cooked as vegetable.                             |                                                                          |
| 70 | Polygonum kawagoeanum Makino            | Polygonaceae  |              | Leaves are aromatic and it cooked and eaten.                                        |                                                                          |
| 71 | Polygonum orientale L.                  | Polygonaceae  |              | Tender leaves and shoots are cooked and eaten.                                      |                                                                          |
| 72 | Polygonum plebeium Br.                  | Polygonaceae  |              | Tender leaves and shoots are cooked and eaten.                                      |                                                                          |
|    | Pouzolzia zeylanica (L.) Benn           | Urticaceae    | Oyik         | Leaves and shots are cooked and eaten                                               |                                                                          |
| 73 | Pueraria phaseoloides (Roxb.) Benth.    | Fabaceae      |              | Tubers are cooked and eaten.                                                        |                                                                          |
| 74 | Pueraria thomsoni Benth.                | Fabaceae      |              | Tubers are cooked and eaten.                                                        |                                                                          |
| 75 | Pueraria tuberosa (Wild.) D.C.          | Fabaceae      | Engin        | Tubers are cooked and eaten.                                                        |                                                                          |
| 76 | Rubus rugosus Sm.                       | Rosaceae      |              | Ripe fruits are eaten.                                                              |                                                                          |
| 77 | Rumex maritimus L.                      | Polygonaceae  |              | Leaves are cooked and eaten as vegetable.                                           |                                                                          |
| 78 | Sarcochlamys pulcherrima (Rpxb.) Goud.  | Urticaceae    |              | Tender shoots, fruits and leaves are cooked and eaten.                              |                                                                          |
| 79 | Smilax ovalifolia Roxb. <sup>ii</sup>   | Smilacaceae   |              | Tender leaves and shoots are cooked and eaten.                                      |                                                                          |
| 80 | Spilanthes paniculata walll. Ex Dc      | Asteraceae    | Marsang sali | Leaves and shoots are boiled along with other edible leaves and meat and are eaten. | Known for healing toothache and are consider good food for strong teeth. |

### Possible Strategies for Revitalization and Preservation of Wild Edible Plants

To safeguard Indigenous Knowledge systems on wild edible plants, proactive measures must be taken:

- **Community:** Led Conservation- Supporting Indigenous land rights and conservation efforts ensure the continued practice of sustainable foraging.
- **Documentation and Research:** Ethno botanical studies, digital archives and Indigenous –led research initiatives can help record and share traditional plant knowledge.

- **Educational Program:** Integrating Indigenous plant knowledge into school curricula and intergenerational learning projects encourages younger generations to value and apply this wisdom.
- **Policy Support:** Governments should recognize and protect Indigenous rights to land, traditional foraging and cultural practices.
- **Ethical Collaboration with Scientists:** Encouraging respectful partnerships between Indigenous communities and researchers can promote knowledge –sharing while ensuring Indigenous control over their intellectual property.

### Conclusion

The integration of wild edible plants in food systems will be a strong and appreciated answer to the problem of hunger in many regions in the world. Also wild edible plants can become important element of global food security. Wild edible plants are resilient, nutritious and can provide significant ecological and cultural benefits. With growing threats of climate change, the loss of biological diversity and poverty, it is imperative to incorporate them into sustainable food systems. Recognition of the importance of WEPs, their conservation and involvement of the custodians of this knowledge can help us create more inclusive, culturally diverse and sustainable food systems in the future. The importance of WEPs in terms of nutrition, resilience and potential for economic development is clear. Incorporating WEPs into our diet and agriculture systems will allow us to establish a healthier and more sustainable approach to producing food. The traditional knowledge related to wild edible plants plays a very important role in cultural survival and sustainability of natural resources and food supply. Unfortunately, the modern environmental changes, processes of globalization and socio-political conditions led to a decrease in the amount of such knowledge. It is imperative to protect and revive this precious resource. It is very necessary that we understand and incorporate our traditional ecological knowledge in order to build an ecosystem and ensure sustainability. The Adi community has a vast wealth of knowledge about wild edible plants which are transferred from one generation to another. The Upper Siang district, East Siang district and Siang District of Arunachal Pradesh have numerous varieties of wild edible plants of which some are known to provide medicinal benefits as well. Thus, we can say that the use of wild edible plants is extremely beneficial for our food security.

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