

THE OUTCOME FRAMEWORK

For Scaling up Indigenous Peoples' Food Systems to Benefit People, Nature and Climate



AUGUST | 2024



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“Inspiration is not governed from the recitation of what is flawed; it resides, rather in humanity’s willingness to restore, redress, reform, rebuild, recover, reimagine and reconsider.... Healing the wounds of the earth and its people does not require saintliness or a political party, only gumption and persistence. It is not liberal or conservative activity; it is a sacred act.”

- Paul Hawkins ¹



OGIEK PEOPLES OF KENYA



YUCATEC MAYA PEOPLES OF MEXICO



KAREN PEOPLES OF THAILAND



KHASI, KARBI AND GARO PEOPLES OF NORTH EAST INDIA.

¹Quoted from Massey, Charles. Call of the Reed Warbler – A New Agriculture, A New Earth. Chelsea Green Publishing, 2018.

FOREWORD

This Report has been inspired by the wisdom and stories of the Indigenous Peoples of North East India, Northern Thailand, Yucatan, Mexico and the Hunting and Gathering Indigenous Peoples of Kenya and enriched by the factual and objective approach of contemporary science. It was prepared by a team of Indigenous Peoples led by Phrang Roy - Coordinator of TIP. It included Pius Rane - Executive Director NESFAS, Gratia Dkhar - Coordinator of the TAPE Study, Bhogtoram Mawroh - Senior Researcher NESFAS, Badashisha Nongkynrih - Nutritionist NESFAS, Prasert Trakansuphakon - Chairperson PASD and Karen Elder, Nutdanai Trakansuphakon - Social Enterprises Specialist, PASD, John Samorai - Hunter Gatherers Specialist, OPDP and Francisco Rosado May - Agroecology and Intercultural Knowledge Specialist who all liaised very closely with members of the Yucatec Maya Peoples of Mexico, the Ogiek Peoples of Kenya, the Karen Peoples of Thailand and Khasi, Karbi and Garo Peoples of North East India. The Team was critically supported by the contributions of Dhrupad Choudhury - Ecologist, Indigenous Peoples Food Systems Expert and TIP Adviser, Anna Bruni Sabhaney - Founder of The Confluencers, Water Engineer and LogFrame Specialist, Jody Aked - Psychologist, Participatory Action Researcher and Storytelling Specialist and Andrea Selva - TIP Staff Member. The Report design concept and formulation was undertaken by Ajay Nayak, Ishita Parmar and Kenneth Menezes of Educated Environments -EdEn.

We are grateful to Sara Farley, Vice President Food Systems of Rockefeller Foundation and her team for the Grant to TIP and for her steadfast support and for believing that we Indigenous Peoples can be Agents of Change to benefit “People, Nature and Climate”.

ABBREVIATIONS AND ACRONYMS

CCAs	Community Conserved Areas	NESFAS	North-East Society for Agroecology Support
FAO	Food and Agriculture Organization of the United Nations	OPDP	Ogiek Peoples' Development Program
FIES	Food Insecurity Experience Scale	PASD	The Pgakenyaw Association for Sustainable Development
GBF	Kunming-Montreal Global Biodiversity Framework	PPLPM	Participatory Perspective Land use Planning and mapping
GHG	Greenhouse Gas Emissions	REGENIO	Is a global multi-stakeholder initiative working to support an inclusive, regenerative and equitable food systems transition
HDDS	Household Dietary Diversity Score	SDG	Sustainable Development Goals
IFAD	International Fund for Agricultural Development	SMM	School Midday Meal
IPAF	The Indigenous Peoples Assistance Facility of IFAD	TAPE	Tool for Agroecology Performance Evaluation of FAO
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services	TIP	The Indigenous Partnership for Agrobiodiversity and Food Sovereignty
IPCC	Intergovernmental Panel on Climate Change	TNC	The Nature Conservancy
IPFS	Indigenous Peoples' Food System	UN	United Nations
IPK	Indigenous Peoples Knowledge		
IPs	Indigenous Peoples		
ITM	Indigenous Terra Madre		
NERCORMP	North-Eastern Region Community Resource Management Project		



THE OUTCOME FRAMEWORK FOR SCALING UP INDIGENEOUS PEOPLES FOOD SYSTEMS TO BENEFIT PEOPLE, NATURE AND CLIMATE

Executive Summary

Nature farming “always raises mixed crops; great pains are taken to preserve the soil and to prevent erosion; the mixed vegetables and animal wastes are converted to humus; there is no waste; the process of growth and the process of death balance one another”². Indigenous Peoples Food Systems follow similar “farming without farming”.³

Indigenous Peoples Food Systems are more than conventional agriculture. They are a mosaic of cultivated fields, young and different aged fallows, pastures or grazing land and young and regenerating forests as well as old growth secondary forests, interspersed with freshwater streams and aquatic bodies. Wild edibles, mushrooms, a diversity of crops, insects and other animals, and animal produce are harvested following nature’s calendar of seasonality and Indigenous Peoples’ respected principle of harvesting for sustenance, not greed. Indigenous Peoples strongly believe that IPFS can make significant inroads into addressing the key challenges of people, nature and climate provided they have local and global support.

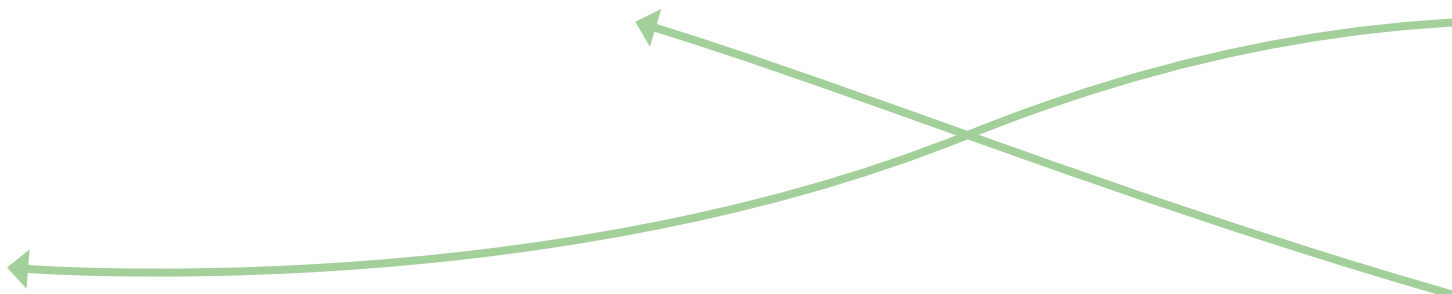
In 2023, the Indigenous Partnership for Agrobiodiversity and Food Sovereignty (TIP)⁴ collaborated with its partners in India, Kenya, Mexico and Thailand and embarked on a multi-country agroecology assessment of 500 households dependent on IPFS. This assessment was made possible because of a grant from The Rockefeller Foundation to TIP. FAO’s Tool for Agroecology Performance Evaluation (TAPE) was adapted to generate the needed and internationally accepted data and analysis. TIP complemented the use of the TAPE tool with participatory storytelling to generate a deeper understanding of the worldviews of communities of their own food systems and to reproduce intergenerational cultural knowledge.

The forthcoming TAPE Assessment Report confirms that IPFS do achieve the expected regeneration of the utility, beauty and sustainability of IPs landscapes. The thirty stories told by the Ogiek Peoples of Kenya, Karen Peoples of Thailand, and Khasi, Karbi and Garo Peoples of North East India highlighted that their food systems are rooted in the locality and the peoples and are

² Howard, A., *An Agricultural Testament*, Oxford University Press, New York, 1943

³ Massey, Charles. *Call of the Reed Warbler – A New Agriculture, A New Earth*. Chelsea Green Publishing, 2018

⁴ TIP is an international Indigenous Peoples’ organisation based in Rome and hosted by the Alliance of Bioversity International-CIAT. It champions Indigenous Peoples Food Systems as a means to conserve biodiversity, improve nutrition and spark joy with wellbeing, green livelihoods and climate resilience. It pioneered Indigenous Food Festivals in Mongolia, Sweden, Northern Kenya and India. It worked with Slow Food International, the Government of Meghalaya, NESFAS and 41 indigenous communities of Meghalaya to organise in Shillong, North East India, the 4-day ITM 2015 Festival where 170 indigenous communities from 62 countries participated. It runs a Fellowship Programme where Indigenous Peoples youth interact to develop critical skills to drive change narratives in their communities and organisations.



designed for all life. They co-evolve slowly, blending traditional and new. They value the culture of sufficiency, sharing and caring. They are supported by reciprocal management practices where ethical stewardship and governance are considered inseparable.

When a crisis arises such as the emerging climate change challenge, having a relevant collections of ‘templates of possible solutions’ is critical. Based on the work done for the TAPE Assessment and the collection of the 30 Stories, TIP prepared the IPFS Outcome Framework presented in this Report as an attempt of shedding light on outcomes that Indigenous Peoples can use as levers to achieve solutions that balance inclusion, equity, sustainability and climate resilience. It has a set of Indicators that will be sharpened as TIP nurtures a process of co-creation and creates a community of narratives and discourses. This is essential if TIP is to develop alternatives to existing policies and to keep them alive and available until the politically impossible becomes politically inevitable.

The Outcome Framework is structured around 6 outcome themes, each with sub-outcomes and a collated set of possible indicators. For each outcome theme, sub outcomes have been identified and an initial list of new and existing well-established indicators that could be used to measure progress towards that outcome have been collated. These are recorded in the Annex to this

While preparing the Outcome Framework, TIP also reviewed appropriate themes and parameters pioneered by other organisations and by efforts such as the Kunming-Montreal Global Biodiversity Framework (GBF), the Sustainable Food Trust’s 2023 Global Farm Metric Framework and REGEN10 Zero Draft Outcomes-Based Framework, 2023 and the Sustainable Development Goals. The forthcoming TAPE Assessment Report also brought out that in some cases, food systems were threatened by policy, market and aspirational pressures resulting in broken System. TIP has therefore included a section on risks that the Framework would need to take into account under each

PART 1

THE CONTEXT



Humanity has been spectacularly successful in combining its inventiveness with capital to meet the demands of a rapidly growing population and its unprecedented aspiration for change and growth. But the gains achieved by this reengineering have been at the cost of nature upon which everything depends. These costs are mounting rapidly. Today, it has become quite apparent that humanity's growing use of the biosphere is no longer sustainable.

On the other hand, Indigenous Peoples have remained largely unchanged for thousands of years and many still live in remote but successful societies albeit with finite resources. Such societies exist in every sort of climate and geography, and their economies and ways of life are as varied as these conditions. What they all have in common is that their civilizations are suffused with the sense of being part of nature. In the face of catastrophic climate change, many people are looking for ways to be sustainable. Some are turning to Indigenous Peoples for lessons in sustainability as their food systems seemed to have succeeded in:

Refer to Fig 1.

The UN Food Systems Summit (UNFSS), convened in 2021 against a backdrop of the triple planetary crisis of climate change, biodiversity loss and nutritional insecurity affirmed that nature-based food systems hold the power to realise the shared vision for a better world. Despite recent reports that indicate that contemporary agriculture contributes a third of global greenhouse gas emissions, consumes 70% of global freshwater and is responsible for over 80% of deforestation resulting in more than 80% of biodiversity loss, the Summit found



Figure 1 - Global Outcomes Indigenous Peoples Food Systems contribute to

that people around the world who are engaged in nature-based food systems can still provide nutritious food for billions of people while safeguarding biodiversity and critical systems.

In his call to action, the UN Secretary General, as the Chair of the UNFSS, listed five action areas that emerged from the Summit to help inform the transitions needed to realize the vision of Agenda 2030 – nourishing all people, boosting nature-based solutions, advancing equitable livelihoods, decent work and empowered communities, resilience building for vulnerable communities to shocks and stresses and accelerating the means of implementation. The Indigenous Partnership for Agrobiodiversity and Food Sovereignty (TIP), its partners and participating Indigenous Peoples communities firmly believe that they can be game changers for the future we want. TIP therefore stands ready to contribute to the UN Secretary-General’s Call to Action for Accelerated Food Systems Transformation.

With support from the Rockefeller Foundation and with the objective of demonstrating that Indigenous Peoples Food Systems (IPFS) have agroecological and regenerative outcomes that can “nourish people, boost nature-based solutions, build resilience of vulnerable communities and accelerate the means of implementation”, TIP collaborated with its partners in India, Kenya, Mexico and Thailand and embarked in 2023 on a multi-country assessment of 500 households dependent on IPFS. It adopted FAO’s Tool for Agroecology Performance Evaluation (TAPE) to generate the needed and internationally accepted evidence to demonstrate that IPFS do provide the desired agroecological and regenerative outcomes sought globally.

PART 2

2.1

INSIGHTS FROM THE TAPE ASSESSMENTS

The results of TAPE assessment confirm that IPFS across these countries show moderate to high scores on most of the ten FAO-listed agroecological elements.⁵ This represents high implementation of agroecological practices and principles within the IPFS studied. The findings also highlight several key strengths of these systems, as well as the challenges faced and their distinct attributes.

Diversity is a prominent characteristic of IPFS evidenced by the diverse systems accessed by communities across the sites studied. Crop diversity is among the highest-performing sub-indicators and complemented with wild food sources. The assessment found that this rich diversity sustains culture and food traditions and contributes to community food security and nutrition, with findings indicating that food insecurity is virtually non-existent within these food systems. Furthermore, this biodiversity is also critical for maintaining genetic diversity and hence, resilience of systems and people.

As self-sufficiency is a priority, these systems demonstrate the efficient use of natural resources characterised by minimal waste generation and greater dependence on inputs that are either self-produced or exchanged. Overall, traditional farming practices are retained in many of the communities, emphasising organic practices and biological practices for managing soil fertility, pests and diseases. Soil fertility is notably high among the sub-indicators, reflecting the effectiveness of the practices such as intercropping, crop rotation, mulching, weed management and controlled burning in maintaining soil health.

The results also reveal strong synergistic relationships maintained within IPFS across multiple scales including species-level, plot level and landscape-level. These diversified ecosystems comprise interconnected systems and zones of ecological compensation, which supports overall ecosystem health. These synergies are managed and conserved through practices such as polycultures, agroforestry, forest and fallow management and protection of wild species.

The element of circular and solidarity economy received a moderate overall score. Despite being primarily subsistence-based, these systems showcase their economic viability through innovative circular economy models. They emphasize local markets and trade, supported by social mechanisms for resource-sharing networks, which foster collective economic benefits. For example, social enterprises within the food systems of Hin Lad Nai in Northern Thailand create sustainable business opportunities by leveraging local resources and knowledge. Furthermore, the integration of appropriate technology enhances agricultural productivity and value addition, contributing to improved livelihoods within IPFS.

⁵ TIP, 2024. DELIVERABLE 10: Forthcoming TAPE ASSESSMENT REPORT- Report on the use of the Tools for Agroecology Performance Evaluation (TAPE) to Assess the Indigenous Peoples' Food Systems of North East India, Northern Thailand, Mexico and Kenya.

The element of human and social values consistently scores high across the TAPE sites. These values demonstrate the collective approach of IPFS, fostering caring, sharing, and reciprocity, which advance equitable livelihoods, decent work, and community empowerment especially for women and youth—while also building resilience against shocks and stresses. As dynamic systems, IPFS thrive on this community ethic that supports the co-creation and the inter- and intra-generational transfer of knowledge. This ongoing exchange sustains IPFS and ecosystems as co-evolving systems that adapt to change, blending traditional practices with new innovations.

The TAPE results also clearly underscore the critical role of effective governance mechanisms in achieving agroecological outcomes within IPFS. Customary governance systems are deeply embedded in local cultures and share common values that promote sufficiency, self-reliance, solidarity and circularity, mutual responsibility, social justice, cooperation and integrity. In many of the sites studied, communal land ownership emerged as a crucial factor, demonstrating that land allocation for production is managed collectively. This communal management ensures equitable access to resources involving all members in decision making fostering sustainable use and mutual responsibility. The results also demonstrate the rapid erosion of desired outcomes wherever traditional governance mechanisms have been compromised by policy or market pressures.

TIP also utilised storytelling alongside the TAPE survey to enhance the analysis by capturing the worldviews and values embedded within Indigenous Peoples' systems. Stories from three countries also revealed that IPFS are deeply rooted in local knowledge and cultural practices, emphasising a biocentric approach where all life forms are respected. These systems are described as inter- and intra-species collectives, dynamically co-evolving through traditional wisdom and adaptability. IPFS emphasises on sufficiency, sharing, and self-reliance, supported by governance and knowledge practices based on reciprocity and ethical stewardship. Resilience in IPFS comes from nurturing and respecting nature and not preserving it. It reflects the importance of integrating human practices with natural processes to maintain ecosystem health and balance. This perspective reinforces the interconnectedness between humans and nature, fostering values of caring and sharing.

The evidence gathered through TAPE and storytelling do strongly suggest that IPFS play a crucial role in nurturing nature-positive food systems and achieving zero hunger within their rich, bio-culturally diverse landscapes.

The TAPE assessment, however, also indicates that wherever commercial agricultural practices have penetrated Indigenous Peoples landscapes and food systems – whether through policy, market or aspirational initiatives – they have seriously undermined traditional institutions and governance frameworks managing such systems, resulting in rapid erosion of values and ethics and thereby compromise the agroecological outcomes of the food systems. The results unequivocally underscore the keystone role of good, effective governance mechanisms in ensuring agroecological outcomes from IPFS and emphatically demonstrate the rapid erosion of desired outcomes wherever traditional governance mechanisms have become compromised due to these drivers.

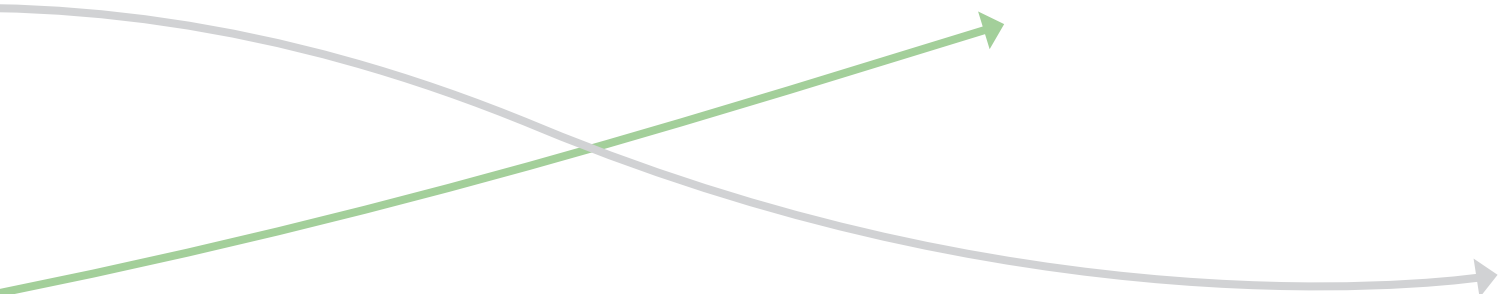
The results of the TAPE assessment therefore significantly confirms what TIP has been consistently advocating, that Indigenous Peoples Food Systems are game changers in a changing world. They can certainly play important roles in nurturing and promoting nature-positive food systems and ensuring zero hunger within their rich and large bio-culturally diverse landscapes.

PART 3

3.1 KEY VISION OF TIP OF THE OUTCOME FRAMEWORK

Emboldened by the TAPE and storytelling assessments of IPFS with 500 households in 4 countries and by the templates of solutions identified and initiated by Indigenous Peoples communities themselves, by our partnering organizations and by some other development institutions, TIP, developed this Outcome Framework in close consultation with its many partners. TIP realises that the contributions of IPFS to global outcomes is contingent and dependent on the effective functioning and efficient performance of the IPFS themselves. TIP, therefore, proposes an Outcome Framework for the IPFS as a prerequisite for IPFS to contribute to the following global outcomes:

- 1 | Enhance Biodiversity and reduce biodiversity loss in IPFS and associated Landscapes
- 2 | Improve nutritional status and reduce malnutrition
- 3 | Enhance mitigation measures through IPFS to reduce GHG emissions
- 4 | Improve green livelihoods and
- 5 | Enhance Resilience of Food systems and Communities.



The Outcome Framework is structured around 6 outcome themes, each with sub-outcomes and a collated set of possible indicators. For each outcome theme, sub outcomes have been identified and an initial list of new and existing well-established indicators that could be used to measure progress towards that outcome have been collated and included as Annex to the Report.

TIP’s vision is that the Outcome Framework will become an instrument to empower Indigenous Peoples. It will do so through local and global partnerships and by embracing and facilitating the scaling up of the positive impacts of the socio-ecological drivers of Indigenous Peoples Food Systems and by assisting local and global partners to be better prepared for the possible future changes.

The critical objectives of this Outcome Framework are therefore to:

01 Uncover how successful IPFS deliver agroecological and global outcomes.

03 Help interested stakeholders demonstrate the positive impacts IPFS have on people and planet.

02 Illustrate the role IPFS knowledge management, governance systems and values play in determining these outcomes.

04 Identify and scope areas where further research and collaboration is required and workstreams that can reduce any negative socio-cultural, environmental or livelihood related impacts.

PART 4

THE INDIGENOUS PEOPLES FOOD SYSTEMS OUTCOME FRAMEWORK

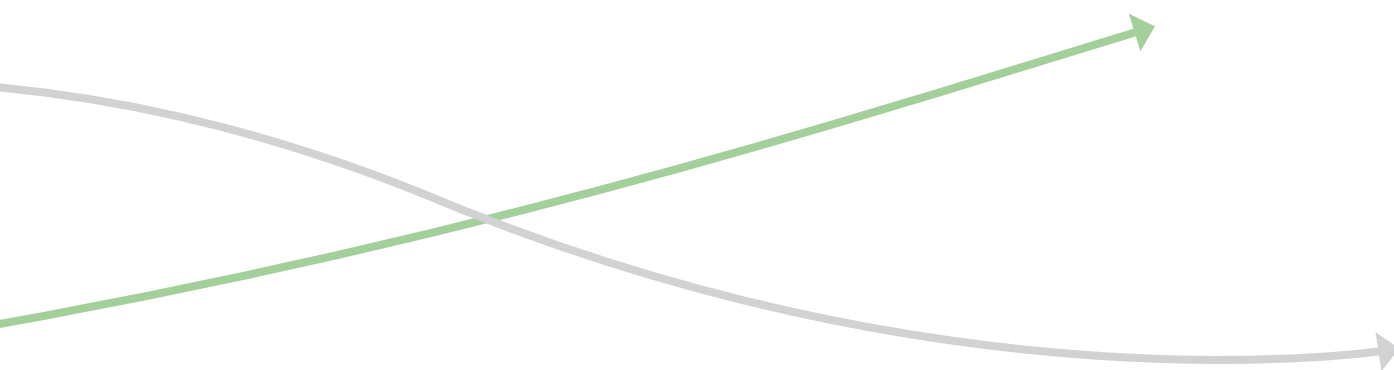
4.1 APPLICATION OF THE TIP IPFS OUTCOME FRAMEWORK

The intent is for the TIP IPFS Outcome Framework to be useful in supporting a number of applications including but not limited to:

- Mobilising of funds and partnerships for scaling up 'templates of solutions' under various themes.
- Evaluating the agroecological contributions of Indigenous Peoples' Food Systems in uncovered areas.
- Identifying additional components or solutions of IPFS that are exemplary and could be disseminated, but also areas that need to be restored, rebalanced or strengthened.
- Enabled diverse agencies and stakeholders interested in sustainable food systems, agroecology, regenerative agriculture and the role of IPs in achieving sustainable development agendas to hold informed conversations with IP led organisations and initiatives.
- Contribute to the transformation of agricultural and agroecological knowledge by assisting in the collection of intercultural evidence.
- Helping to structure workstreams and programmes aimed at IPFS under common outcome. For example efforts to build trust and international support in growing and strengthening Indigenous People's networks.
- Begin to build a repository of indicators that are relevant and of importance to IP.
- Demonstrate the technical competence and tangible contribution to IPFS, that IP organisations bring to the table and how this complements IP advocacy efforts.

4.2

HOW THE OUTCOME FRAMEWORK IS ORGANIZED



The Outcome Framework is structured around 6 outcome themes, each with sub-outcomes and a collated set of possible indicators. For each outcome theme, sub outcomes have been identified and an initial list of new and existing well-established indicators that could be used to measure progress towards that outcome have been collated. Each theme could be assessed at one or more scales. Scales of assessment considered are: IP global networks, territory, community or food systems. The proposed framework also recognises where appropriate themes and parameters pioneered by other organisations and by efforts such as the Kunming-Montreal Global Biodiversity Framework (GBF), the Sustainable Food Trust's 2023 Global Farm Metric Framework and REGEN10 Zero Draft Outcomes-Based Framework, 2023 and of course the Sustainable Development Goals. Where links and synergies are evident between the proposed TIP IPFS Outcome Framework and existing frameworks, these have been highlighted. Indicators highlighted by several participating communities have also been included or noted. All these activities of identifying appropriate outcome indicators are captured in the Annex of this Outcome Framework Report.

It is also worth noting that at the 2021 Summit, Secretary General as the Chair of the UNFSS, listed five action areas that are needed to realise the Agenda 2030. These are:

1. Nourishing all people;
2. Boosting nature-based solutions;
3. Advancing equitable livelihoods;
4. Decent work and empowered communities;
5. Resilience building for vulnerable communities to shocks and stresses; and accelerating the means of implementation.

These themes are comprehensively reflected in the proposed Outcome Framework for IPFS to illustrate IPFS' significant contribution to global outcomes.

PART 5



5.1 NURTURING AND NOURISHING PEOPLE AND NATURE: IP MANAGEMENT APPROACHES

Healthy agroecological systems rely on the health of their fundamental building blocks: healthy soil, seeds, access to water or rainfall and protection from pests. Traditional Indigenous Peoples' farming practices aim to achieve these outcomes by harmonizing with nature and by leveraging their deep knowledge of the ecosystem to guide practices. Here are some of the sub themes discussed with community members and partners who showed an interest in scaling up nature-based work streams in IP lands and territories.

TIP's consultations with community members helped to list the fundamental outcomes expected from IP food systems. The discussions also helped to gather the opinions of elderly knowledge holders on critical areas that would require focused attention and actions to empower food systems yield the desired outcomes. Community members were candid that maintaining diversity of crops and systems together with good soil health management are fundamental for attaining the desired outcomes. Elders across communities also recognise the inadequacy of traditional knowledge to respond to and deal with the growing uncertainty of climate events. They highlighted the need for infusing new knowledge and approaches to adapt to emerging challenges. The following sections outline the pathways suggested for focused actions:

5.2

PATHWAYS FOR THEME 1

5.2.1 Conservation and maintenance of local crop and faunal diversity of IPFS to safeguard dietary diversity, nutritional security and climate adaptation

IP community elders highlighted the critical importance of conserving and managing diversity of local crop varieties, particularly of heirloom crop varieties. They argued that given the considerable time and efforts devoted by IP farmers to the selection and improvement of local crop varieties over generations, these varieties are well adapted to the local conditions; they are resistant to pests and pestilence, well tolerant to weather variability and have, over generations, been selected and conserved for their taste and nutritive traits. Conserving and managing crop germplasm across food systems are critical. They also emphasised the risk aversion and management capabilities that conservation of local agrobiodiversity offers to the community. Hence, the conservation and management of agrobiodiversity– both within as well as between crops – in all cultivated systems, will be given due importance and steps will be taken to ensure their conservation, sustainable use and management using , amongst others, Living Gene Bank and Heritage Landscape approaches.

5.2.2 Pollination services promoted for enhancing biodiversity and ecosystem health

IP communities across countries have already adopted innovative approaches for enhancing pollination services (and resultant income) through bee-keeping. In northern Thailand, Karens have introduced beekeeping in fallows and regenerating forests using local bee species. Similar methods have also been adopted by Maya milpa farmers in the Yucatan peninsula of Mexico. Beehives in the fallows and regenerating forests offer bees a wide variety of forage plants thus improving honey production and healthy hives. In the process, the bees offer a pollination service that is crucial for enhancing diversity and the maintenance of systems vitality. It is important to note that this type of bee keeping is adopted with native bees and not exotic bee species as the latter can do more harm than good. Although a simple intervention, this activity can be a significant determinant for arresting biodiversity loss and for promoting biodiversity conservation and systems health.

5.2.3 Seed Banks and Living Gene Banks to enable better climate adaptation

With climate change becoming a harsh reality, IP communities feel that additional efforts need to be adopted in order to reduce risks from climate extremes. A constant challenge being progressively felt by farmers in IP landscapes is the wilting and dieback of germinating crops due to prolonged dry-spells or extremely heavy rainfall post sowing and germination, and the need for replanting. Saved seeds and easy access for farmers, particularly the poor and marginalized, can go a long way in enhancing their coping ability to climate related stress. To further reinforce conservation of genetic diversity of crops, wild edibles and wild bioresources, and thereby enhance risk aversion capabilities of IP communities, efforts will be made to promote community managed Live Gene Banks adopting Heritage Landscape Conservation approaches.

5.2.4 Promoting and nurturing practices that foster healthy soils

IP communities are very clear about the critical importance of soil health management for achieving the desired outcomes from cultivated IPFS systems. They practice minimum tillage and the application of litter from forests, homesteads and mulching of biomass. Weeding is carefully regulated to ensure systematic heaping across the fields. This allows the slow leaching of nutrients from the decomposing biomass and the immediate 'mopping up' by growing crops. This in turn safeguards the soil nutrient pool⁶. They have elaborate categorisation of soils based on colour, texture, 'smell' etc. They cultivate appropriate crops in specific soils and with appropriate crop associates and tree species that foster soil fertility and moisture retention. They also use sunlight for solarisation and fire for what could be a prototype practice of preparing biochar.

These practices need efficiency and effectiveness assessments for developing low input, effective soil health 'packages of practices'. They also need to be further strengthened by introducing complementary scientific practices such as the use of bio-inoculants and effective microorganism (EM) priming as well as natural farming, agroecological and regenerative practices to improve their effectiveness in today's climate challenged contexts.

5.2.5 Supporting Natural and Semi-domesticated Systems

The Outcome Framework will strengthen IP landscape management approaches and the governance mechanisms that nurture them. IP communities have evolved effective regulatory norms framed as customary laws for management of these systems. They have several practices that nurture biodiversity and sustain a wide variety of ecosystem services. IP food landscapes are mosaics of cultivated fields, different-aged fallows, regenerating forests, mature old-age forests interspersed with freshwater systems, each with their own unique and diverse range of biological resources. These natural systems offer IP communities a wide variety of food resources throughout the year, act as 'food reserves' for the community and critically contribute to the dietary diversity of the household. Many of these resources also provide provisional services that meet IP households' consumption, medicinal, energy and income needs while simultaneously providing regulatory services such as pollination, biological pest control, soil fertility and erosion control and hydrological services, the latter being particularly critical for irrigated food systems as well as for meeting safe drinking water needs of households.

5.2.6 Promote and scale community-led innovations such as community conserved reserves and community-led fish sanctuaries

IP communities are keenly conscious of the dynamic inter-linkages between different components comprising their landscape. As the result of habitat deterioration and destruction and the accompanying loss in biodiversity, IP communities community led initiatives have mushroomed across IP landscapes. Numerous examples of successful Community Conserved Areas (CCAs) with well laid out governance frameworks based on customary practices have emerged. These CCAs are often managed under strict norms of resource management and

⁶Weed heaps serve as a nutrient pool that provides available nutrients to be readily 'mopped up' by growing crops thus preventing depletion of the soil nutrient pool

conservation. Examples of such initiatives abound in traditional practices of IP communities (such as among the Apatanis in Arunachal Pradesh, Karens in Thailand, the Khasis and Garos in Meghalaya) and have also been conservation ‘beacons of hope’ in several development projects. Notable among the latter are the community conserved catchment forests (for sustained hydrological services), the wildlife and fish sanctuaries in the IFAD supported North Eastern Community Resource Management Project (NERCORMP) areas in North East India. The Fish Sanctuaries initiated on the Simsang river in the Nokrek Biosphere Reserve, Meghalaya is an excellent example of habitat conservation and ecosystem recovery that needs to be replicated and upscaled. These are examples of “templates of solutions” that the Outcome Framework will support.

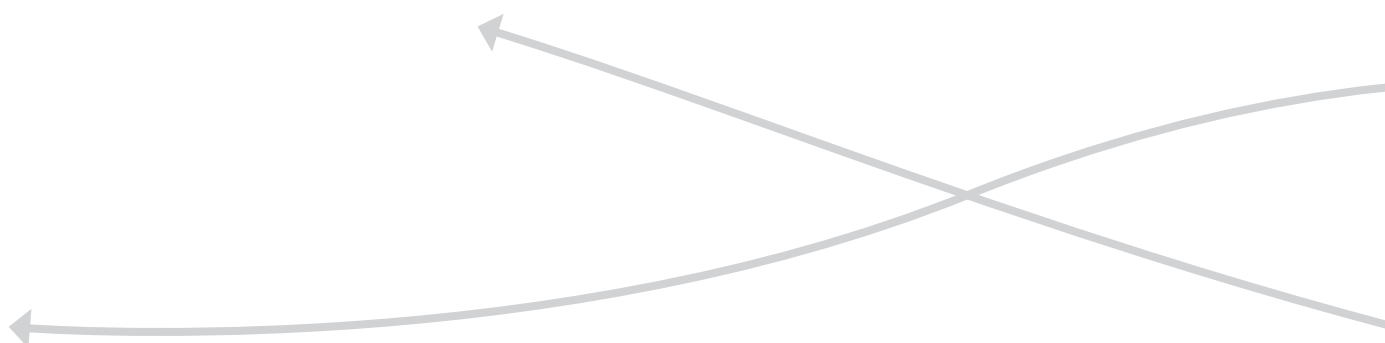
5.2.7 Restoring degraded habitats and landscapes and strengthening conservation of biological resources building on traditional practices and approaches

Fallow management practices traditionally followed by numerous IP communities practising shifting cultivation also offer useful lessons in habitat restoration and are living examples of good landscape management. IP communities that practise shifting cultivation initiate fallow management and habitat restoration at the site selection stage. Selection of cultivation sites are done based on fallow cycles that allow sufficient time for land rejuvenation and forest regeneration. This is followed by fallow management practices during vegetation clearing and involves careful felling and clearing of vegetation to allow regeneration of trees and shrubs. Fallow ‘enrichment’ through the introduction of useful species is common and this helps in increasing the diversity of plant species during regeneration. Fallow management practices are also complemented with ‘assisted regeneration’ approaches that allow the habitat to rejuvenate and regenerate. Such practices, complemented by approaches adopted by NESFAS in their FAO-supported Biocentric Restoration Project implemented in Meghalaya and approaches adopted in The Nature Conservancy (TNC) supported Habitat Restoration project also offer good examples useful for promoting this pathway.

The critical outcomes linked to this theme and key activities that can successfully validate these promising practices for scaling up together with the risk of unintended consequences are given in the Annex. There is also a section under each theme of unintended risks and comments on overlaps with other Frameworks.

5.2.8 Co-create and pilot IP landscape management approaches in ‘broken’ IP landscapes and assess their replicability and wider application

There is also an urgent need to promote successful IP approaches and practices for forest regeneration, restoration of degraded ecosystems and continuation of ecosystem services. These need to be identified and lessons learned from habitat restoration initiatives mentioned in the above section “Suggested pathways for Natural and Semi-domesticated Systems”. Such landscape management approaches can then be refined and made amenable for scaling up.



PART 6



6.1

IMPROVED NUTRITIONAL STATUS, GOOD HEALTH AND REDUCED MALNUTRITION

The State of Food Security and Nutrition in the World, prepared by FAO, IFAD, WFP, UNICEF and WHO, published in 2024, reports that global hunger as measured by “the prevalence of undernourishment (PoU)” (SDG Indicator 2.1.1) reveals a continuing lack of progress towards the goal of Zero Hunger. Going beyond hunger, the global prevalence of moderate or severe food insecurity (SDG Indicator 2.1.2) also remains far above pre-pandemic levels. In 2023, an estimated 28.9 percent of the global population – 2.33 billion people – were moderately or severely food insecure, meaning they did not have regular access to adequate food. These estimates include 10.7 percent of the population – or more than 864 million people – who were severely food insecure, meaning they had run out of food at times during the year and, at worst, gone an entire day or more without eating. The situation, therefore, calls for urgent, renewed efforts to reverse the trend. This 2024 UN Report argues for repurposing agricultural policies to make healthy diets more affordable and hence, more accessible.

An FAO Food Insecurity Experience Scale (FIES) survey conducted in selected villages in the northeastern state of Meghalaya in India⁷ suggests that severe food insecurity is low and virtually non-existent among the Khasi community, while moderate food insecurity is experienced at rates that are typical of high-income countries in Europe, North America and East Asia. The food

systems of the Khasis provide a wide diversity of food items available yearlong and is probably the reason for this situation. The TAPE survey conducted cross-country also show high scores both in regard to food security and dietary diversity. The promotion and management of diversity both in cultivated and natural systems, as stated above, will contribute to improved nutrition and good health. This Outcome Framework is however encouraged to build on a successful initiative adopted by NESFAS of introducing wild edibles and local seasonal vegetables to School Midday Meal (SMM) initiatives in a few villages of Meghalaya. This community supported initiative is being scaled up by NESFAS (see 6.2 below). It will also be additionally complimented through the promotion and popularisation of local healthy cuisines through the Mei Ramew/ Mother Earth Cafes suggested under the Green Livelihoods section below.

The health of Indigenous People and their ability to tend to their cultivated and wild food system will inevitably affect the agroecological outcomes of a food system, as all IPFS rely on human labour and networks more than they do machinery or external products.

Health is linked to dietary diversity and access to healthy, nutritious and diverse food availability across seasons. But it is also so much more than that.

In 2023 the World Health Organisation stated that “Indigenous Peoples often face considerable barriers in accessing medical services and suffer from worse health outcomes than non-Indigenous populations. Indigenous mothers and children experience higher rates of mortality and morbidity.”⁸ Several programmes have been effective in promoting dietary diversity initiatives. Some of these gained through TIP’s work with FAO and IFAD-IPAF’s recent support to NESFAS relate to the following pathways.

6.2 PATHWAYS FOR THEME 2

6.2.1 Expand and scale up School Midday Meal (SMM) pilot initiatives for promoting the domestication and conservation of wild edibles and local neglected and underutilised crops (NUS) vegetables

The school meal experience in North East India, Meghalaya involves integrating local, nutritious, and culturally relevant foods into school meals. Using the FAO’s 10 food group concept, local cooks were trained with the support of professional chefs. While implementing this programme, local governance institutions play an important role in this context.

TIP will attempt to scale up the NESFAS initiative, with support from the School Meals Coalition. It will promote local ‘nutrition dense’ crops and vegetables in kitchen, home and

⁷ FAO, 2022. The future of foods and agriculture: drivers and triggers for transformation – Summary version, Rome

⁸ WHO, 2023. “Global Plan of Action for the Health of Indigenous Peoples”. Accessed online: 23rd July 2024. <https://www.who.int/initiatives/global-plan-of-action-for-health-of-indigenous-peoples>

school gardens. It will build capacities of local chefs for popularising local cuisines. Working closely with the School Meals Coalition and the Rome based UN Agencies, TIP will proactively seek policy engagements with relevant Government Agencies to facilitate the revision of procurement guidelines for SMM to ensure local procurement and inclusion of wild edibles and other local products of Indigenous Peoples Food Systems.

6.2.2 Promotion of nutritional diversity campaigns in schools, home gardens and for the elderly and promotion of home gardens for improving access to nutrient dense food resources

6.2.3 Mapping Household Dietary Diversity Score (HDDS)

This is a rapid, user-friendly and easily administered low-cost assessment tool developed by FAO to assess a household's access to diverse food groups. It has been an effective tool to monitor how effectively communities are making best use of the wild edibles and other food groups found in their respective food systems. Dietary diversity was also identified as one of the priority areas raised by the communities consulted.

6.2.4 WASH (Water, Sanitation and Hygiene) campaigns

These are galvanising local actions at the point of care to demonstrate that water, sanitation and hygiene are critical for reducing infections and improving wellbeing. Scaling up WASH campaigns amongst Indigenous Peoples communities in remote areas will also demonstrate the world's commitment to this priority health care agenda.

6.2.5 Managed Grain Bank systems for increased food security

A mechanism for a community-managed Grain Bank system can provide access to foodgrains for the poor during stressed situations. Traditionally, most Indigenous Peoples communities had community grain storage mechanisms specifically set up to tide over occasions of food insecurity. Among Indigenous Peoples communities of North East India who have converted to Christianity, the practice of donating part of the harvest to the church during thanksgiving is quite common. A community-managed Grain Bank system modelled on these approaches reviving the traditional practice of contribution to the common grain store or built on the church Thanksgiving model can be promoted across Indigenous Peoples communities particularly to cater to poor, vulnerable and marginalised households.

6.2.6 Culinary demonstrations and campaigns to popularise local cuisine

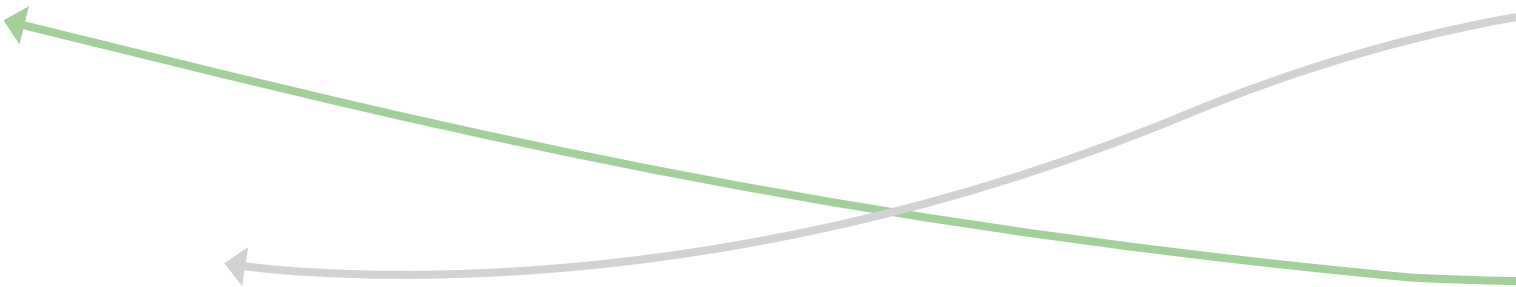
This sometimes includes training to build the capacity of local chefs.

6.2.7 Policy engagements with relevant government agencies

These can be at local and national levels and is intended to shape policy that facilitate access to nutritional diversity.

PART 7

7.1 IMPROVE NATURE-BASED GREEN LIVELIHOOD OPPORTUNITIES



The TAPE results show that Indigenous Peoples Food Systems do provide outcomes that meet the sustenance needs of communities. However, the emerging aspirations especially of youths because of social media networks must also be addressed to motivate them to support, conserve and improve their existing food systems and supportive social frameworks. Failure to do so will push youth to opt for other means of livelihoods and lifestyle that may be detrimental to the associated governance mechanisms, the value system and the worldviews governing Indigenous Peoples Food Systems. This in turn will have significant implications for the global community itself. Concerted efforts must therefore be made to identify opportunities for the promotion and diversification of nature-based livelihoods to meet aspirations of the youth and contribute towards the promotion of green livelihoods.

7.2

PATHWAYS FOR THEME 3

7.2.1 Promote and strengthen livelihood opportunities that draw on local skills, knowledge and resources

Indigenous communities have a rich knowledge and understanding of their territories and their resources. They have historically developed skills that help them to sustainably harness resources for their sustenance needs. They have also developed skills that are valued even by non-indigenous communities. Green livelihoods based on climate resilient rural housing, beekeeping and bee-products, sericulture, handicrafts, wickerwork, natural dye making are a few of the opportunities that some Indigenous Peoples interviewed have reported for possible upscaling. With weaving being a common skill among IP women across countries, creative cottage-based handloom and weaving can be a profitable livelihood pursuit that can empower women while meaningfully linking up local forest produces and together, provide opportunities for developing a circular green economic pursuit. Diversification of livelihood opportunities based on forest produces leads to appreciation and nurturing of Nature opposed to exploiting Nature. This is a strategic collaborative area for scaling up traditional skills and at the same time injecting creative green livelihoods opportunities while fostering the sustainable management of Natural systems.

7.2.2 Supporting and replicating IP innovative approaches that promote Forest gardens and agro-forestry models for diversifying forest-based livelihoods and entrepreneurial opportunities

IP communities across diverse landscapes have demonstrated innovative approaches that foster forest-based livelihood pursuits without compromising the basic principle of nurturing nature. The Khasis of Meghalaya, North East India maintain several forest categories each managed and conserved for different purposes ranging from utility and provisional services to maintenance of regulatory and cultural services. Several of the community forests are set up for utility purposes. The Karens in Northern Thailand as well as the Mayas in Yucatan, Mexico and the Ogiek Peoples of Kenya have bee-keeping in their fallows and young forests. This intervention not only provides income opportunities for the households, but also ensures pollination services for plants found in the surrounding natural and cultivated systems, thereby promoting diversity and contributing an essential service to the functioning of Nature. The Karens in Thailand as well as the Dayaks in Indonesia have nurtured commercially important species in their forests such as tea and rubber, as have the Khasis who nurture forest gardens for the cultivation of various spices and condiments. Most IPs also nurse several wild edibles (microbial, plants and animals), medicines and dye plants. Such examples require to be documented, showcased and replicated elsewhere to diversify options for forest-based entrepreneurship development focused especially to attract IP youth.

7.2.3 Encourage and develop Bankable models drawing on the Forest Garden concept practised by Karens and the Mei Ramew Café initiative in Meghalaya

The Karens in Northern Thailand have been nurturing tea in their forest gardens complimented with several other forest produces. Today, they have been able to develop a distinct tea brand that presently is highly sought by the outside market. Youth from the community have partnered to market products using digital and social market promotion approaches. In North East India, NESFAS has been able to link youth and women to harness their local wild edibles and after some capacity building by well-known Cooks in local cuisine preparation, they have managed to set up niche Mei Ramew/Mother Earth Cafes locally known as Mei Ramew Cafes. These are two examples of community initiated innovations that are bankable and can attract green investments for supporting nature-based green livelihoods. There is also a long-standing tradition of preservation in many indigenous communities. Many Indigenous Youths are becoming interested in the promotion and the development of micro-businesses that set up value added processing of fruits and other local products. Opportunities for fostering and scaling up nature-based bankable enterprises will be the singular focus of this pathway. Its clear objective will be to open up opportunities for the IP youth Green Livelihood Start Ups. This will require scouting for opportunities based on promising ongoing activities in different geographical regions, bringing in expertise to develop the potential start up into full-fledged local enterprises that can attract investments and providing employment opportunities to IP youth through a sustainable circular economy.

7.2.4 Building a cadre of Young IP Professionals

Many nature-based knowledge and practices of Indigenous Peoples, particularly of young people, get diluted or distorted because of market and policy influences. Consequently, this adversely impacts the functioning of Indigenous Peoples Food Systems. However, several IP communities still retain mechanisms of peer-to-peer and inter-generational learning. A promising example is the Mawakhi school approach in Northern Thailand where intergenerational practical classes on rotational agriculture are regularly conducted by local Karen Elders as part of the school's modern curriculum. NESFAS has also been successfully conducting immersive and inter-generational Agrobiodiversity Walks through local landscapes. NESFAS has also been successful in setting up more than 100 Agroecology Learning Centres where young women are active participants. Interested Indigenous Youth from such backgrounds are perfect fits for a career in nature-based agroecology or regenerative agriculture and their allied disciplines and thereby continue to achieve sustainable outcomes for their communities. This can be achieved through training, cross-learning events and immersive fellowships programmes. Building a cadre of young Indigenous Peoples professionals must therefore be another strategic focus of the TIP Outcome Framework.

There is a long-standing tradition of preservation in many indigenous communities, and many Indigenous Youths are becoming interested in the promotion and the development of micro-businesses that set up value-added processing and offer transformed foods to markets where they can get a greater income than raw produce.

In addition to the above, TIP will also lay special emphasis on an inter-cultural based capacity building of IP youth with an aim of building up a cadre of young professionals with strong Indigenous Peoples backgrounds who can meaningfully participate in national, regional and global forums. TIP aims to partner with reputed international organizations, universities and

successful Indigenous Peoples Development organizations in this endeavour and support experience gathering through mentorship programmes conducted in conjunction with such organisations.

7.2.5 Internships/Apprenticeships with Global Partner organisations and Agencies

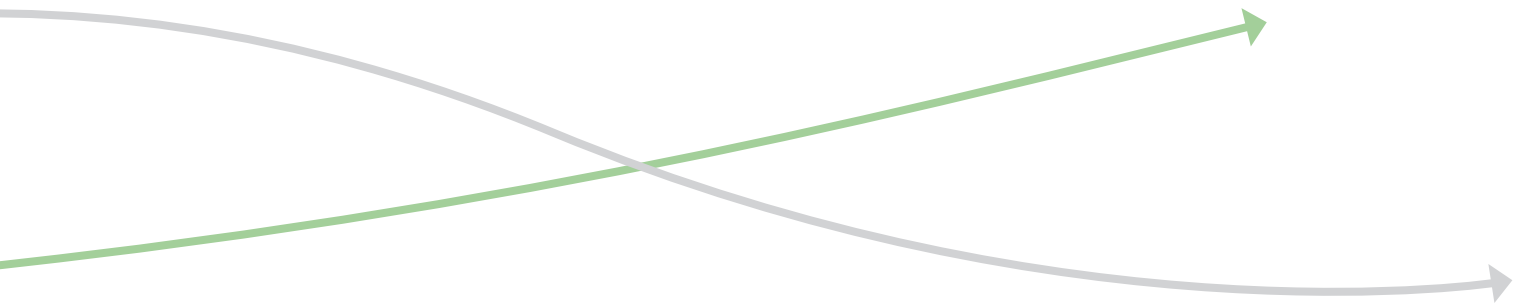
IP youth attachment programmes for effective learning through doing should be set up in collaboration with diverse organisations and Universities. Such programmes would enable IP youth to be exposed to real life IP issues and also expose them to approaches to address the situation, thereby providing a learning experience and building their capacities to deal with such situations. TIP will link with appropriate Global Partners and Agencies.

7.2.6 Training Workshops/Short courses

TIP, in collaboration with research and university partner organisations, will consider organising relevant research and graduate training of co-creation of knowledge to support Indigenous Peoples Food Systems. It will attempt to also arrange short-term courses and training workshops on themes highlighted in this Outcome Framework. The short courses could be organised jointly with partner institutions who will design course modules and include 'hands on' problem solving. Training courses could also be tailor-made and designed to expose IP youth to issues within a particular thematic area and 'on ground' situations with experts in the subject drawn from relevant partner organisations. The primary objective of such training workshops and short courses will be to train up a critical mass of IP youth who would form a cadre of young IP professions sufficiently equipped to participate in global fora and join the pool of young professionals who contribute to global decision-making processes such as UN fora, IPCC and IPBES facilitating inclusion of their knowledge, challenges and worldviews in global decision making. TIP will also look for collaboration for more graduate and research training in the coming years in line with its desire to be an active participant in knowledge co-creation (see Part 10).

PART 8

8.1 ADAPTATION TO CLIMATE CHANGE, RISK MITIGATION AND EMISSION REDUCTION



The territories of Indigenous Peoples offer communities a variety of resources that provide not only household's consumption needs but also regulatory services such as pollination, soil fertility enhancement and hydrological services that are particularly essential for the efficient functioning of these natural systems. The landscape management approaches of IP communities conserve and manage catchment forests for these hydrological services, critical not only for their cultivated systems downstream but also for accessing safe drinking water for households. These services also sustain diverse ecosystems in the landscape. For example, the Khasis of Meghalaya maintain different types of forests categorised according to their functional use, ranging from consumption needs to regulatory and cultural services, the

latter giving rise to sacred landscapes among diverse IP territories. IP landscape management approaches thus ensure the maintenance of green cover in their landscape, thereby enhancing mitigation measures to reduce climate change. IP communities have also evolved effective regulatory norms framed as customary laws for healthy habitats. Adherence to customary norms of governance ensures the maintenance of healthy ecosystems and the ability to adapt to climate change. It is important, therefore, to understand and document these regulatory norms and institutional mechanisms as they can provide important templates for developing solutions to contribute to the scaling of effective mitigation measures to reduce GHG emissions. The Outcome Framework will pay attention to this needed documentation.

8.2

PATHWAYS FOR THEME 4

In addition to the identified pathways in the above section on Suggested pathways for Natural and Semi-domesticated Systems, the Outcome Framework also focuses on some key activities that can support Indigenous Peoples Food Systems adaptation to climate change. These are mainly:

8.2.1 Hazard mapping and mitigation planning

Understanding the hazards that affect a community. Developing a current baseline is an essential pre-requisite for planning how to manage it.

8.2.2 Enhance Resilience of Food systems and Communities

The foundation for enhancing resilience of food systems as well as of people has been discussed in the earlier section of this document. However, developing an appropriate community-led early warning mechanism for managing climate-induced risks will help communities to prepare for climatic events such as floods, droughts or wildfires. But such a mechanism must combine traditional community knowledge with appropriate modern technology.

8.2.3 Diversification of food systems to build inherent robustness

In order to adapt and respond to climate stresses, it will be important to promote and maintain the diversification of food systems. This will help to build inherent robustness in the system. Examples are the mix of semi-domesticated and natural systems through IP management approaches and the use of “Heritage Landscapes” that are mosaics of young aged and mature natural systems.

8.2.4 Explore mechanisms to incentivise IP good practices

It is important to incentivize good and proven Indigenous Peoples practices to motivate community members not only to continue existing practices, but to also innovate and improve existing practices. Such an initiative will showcase the practising community as champions and motivate others to emulate their example.

8.2.5 Enhancing Mitigation Measures to reduce GHG Emissions through IPFS Approaches

IP landscape management approaches contribute substantially to global GHG emission reduction and carbon sequestration targets through carbon sequestration and the conservation and management of Forests and other natural systems.

8.2.6 Establishing a grassroots level weather monitoring and early warning system

This is often constrained by the lack of acceptable weather data at local levels, leading to dissatisfaction among the rural community. Schools and youth groups could be regularly harnessed to monitor weather parameters and communicate the information to local or sub-national meteorological agencies using conventional and digital services. Such an initiative could be piloted across countries to test 'proof of concept' and subsequently develop a workable weather monitoring model.

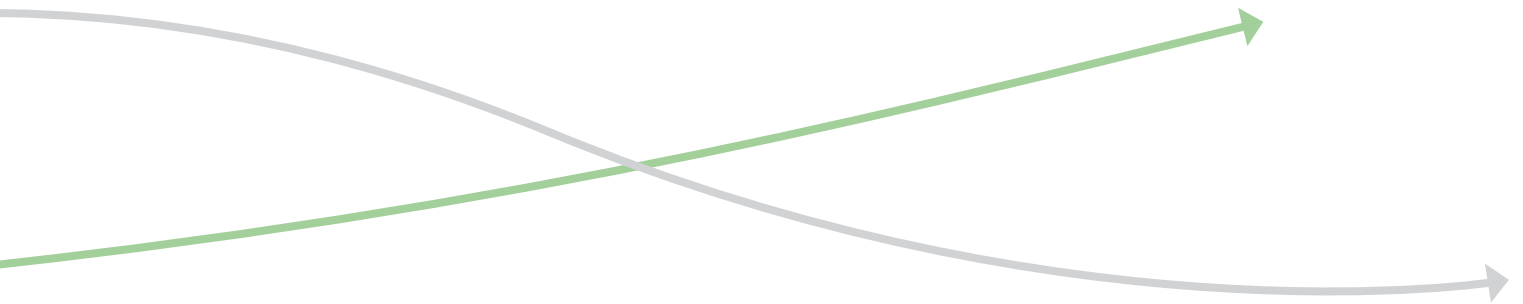
8.2.7 Enhancing Resilience through social networks and social capital.

Social networks, particularly peer-based affinity groups, are the backbone of IP social capital building mechanisms, strongly grounded on the principle of sharing and caring. At times of stress, IP households reach out to each other and extend help in kind and labour to the affected household or community helping them to tide over and in bouncing back. Building on this community practice, efforts should be made to establish peer affinity group-based support mechanisms to respond to stress (climate induced, or otherwise) and challenges. Although this will primarily involve social mobilisation, innovative measures could be included as the affinity groups work out risks and needs by themselves. A community revolving fund approach or initiatives such as Community Grain Banks mentioned earlier in this document could be considered to facilitate immediate access to financial support and strengthen the relevance of the groups. This could be piloted across countries to augment adaptation efforts and help build resilience of communities.



PART 9

9.1 RESPONSIBLE GOVERNANCE AND VALUES DRIVEN DECISION MAKING



“IPs have an expanded view of connection, collectivity and community which informs complex governance systems and allows Mother Earth a chance to regenerate.”

One of the defining features of Indigenous Peoples’ Food Systems are the customary norms used to manage, plan and allocate natural resources (including access to land). To Indigenous Peoples, the wellbeing of one community member is linked to the wellbeing of all. The value of reciprocity demands that the honour of giving must be also accompanied by the humility of receiving. To Indigenous Peoples the gifts of the earth are to be shared but they are not limitless. Indigenous Peoples are all bound by the “covenant of reciprocity and the earth is a gift that we must pass on, just as it came to us⁹”. Therefore the governance mechanisms and systems that are set up by Indigenous Peoples are essentially intended to call all of us to our responsibilities for all we have done or for all that we have taken so that we can collectively respond to any unforeseen risks or issues affecting the community.

⁹Kimmerer, Robin Wall. Braiding Sweetgrass (Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants. Penguin Books, 2020.

The intent behind these governance systems and norms is always to make sure that the collective needs are taken care of, leaving no one behind. These are often the need to have access to land, to food self-sufficiency and sometimes to get the communities support in the form of labour resources or money.

One crucial area of work that flows from this Outcome Framework is the need to pay attention to the documentation, protection and strengthening of Indigenous Peoples' values and decision-making governance. Development initiatives such as the Participatory 3D Mapping within communities or the development of Landscape Management Plans have been effective to make decision making to be more in line with the governing values of Indigenous Peoples. However, more has to be done to protect and strengthen the rights of Indigenous Peoples to the principle of self-determination and the other rights ascribed in the UN Declaration on the Rights of Indigenous Peoples.

Immediate steps need to be taken to identify and document good practices as possible 'templates of solutions' of IPFS. Ideally this should be done through an active collaboration between Indigenous Peoples communities and scientific organizations and the wisdom of Indigenous Peoples Knowledge Holders and Elders is acknowledged (see Theme 10). This is a critical issue for climate justice and which will also foster distributive justice as well as procedural justice. It will also lay the ground for greater involvement of IPs in global decision making. It will lead to the recognition of Indigenous Peoples as active agents of their own change – a framework conspicuously absent in present day decision making and the fundamental cause of the imposition of a development thinking that ignores and is dismissive of the worldview of IPs. Indigenous Peoples have long led their own outlook towards climate change and environmental protection agendas grounded on their caring, sharing and consensus building governing values and their sacred relationship with Nature. The participation of Indigenous Peoples in development and climate change decisions and the inclusion of Indigenous Peoples' knowledge in global assessment processes, therefore, should be accorded high priority and its due place in global decision-making processes – a goal that must be promoted and nurtured if food systems, and by extension, global wellbeing is to progress on the lines elucidated by the UNFSS, Conference of Parties and Agenda 2030.

9.2 PATHWAYS

9.2.1 Scaling up Habitat and Landscape management drawing from IP Landscape management approaches

Lessons should be drawn from the IPFS practices of the Karens Peoples of Northern Thailand, the FAO funded Biocentric Restoration project and TNC supported Habitat restoration project to NESFAS as well as innovative community-led conservation initiatives such as the establishment of fish and other wildlife sanctuaries and corridors established under the IFAD-Government of India funded NERCORMP project in Northeast India. These are good examples for scaling up Habitat and Landscape management for regeneration approaches.

9.2.2 Promoting sustainable land use practices through Participatory Perspective Land use Planning and mapping (PPLPM) based on traditional IP Landscape management approaches that enhance forest and biodiversity conservation

Traditional landscape of IP communities have often been disrupted through increasing land pressures and often unplanned and aspirational, policy driven or market induced expansion at the cost of regenerating fallows and forests leading to loss of biodiversity and forest cover. Over the years, IP landscapes have also evolved into what has been termed as 'composite landscapes' harbouring a combination of traditional and transiting systems. The degradation of habitats with resultant loss of biodiversity needs to be reversed and this can be initiated through participatory land use planning at the grassroot level. Participatory Perspective Land use Planning and Mapping (PPLPM) has been piloted at grassroot levels by different Development Agencies with encouraging results. PPLPM as a participatory approach needs to be scaled up and plans and maps generated through such exercises need to become formal documents ratified and endorsed by all local authorities. This simple step can set the pace and desired direction for a participatory, community led land use management that helps promote sustainable land use and arrest habitat destruction and biodiversity loss.

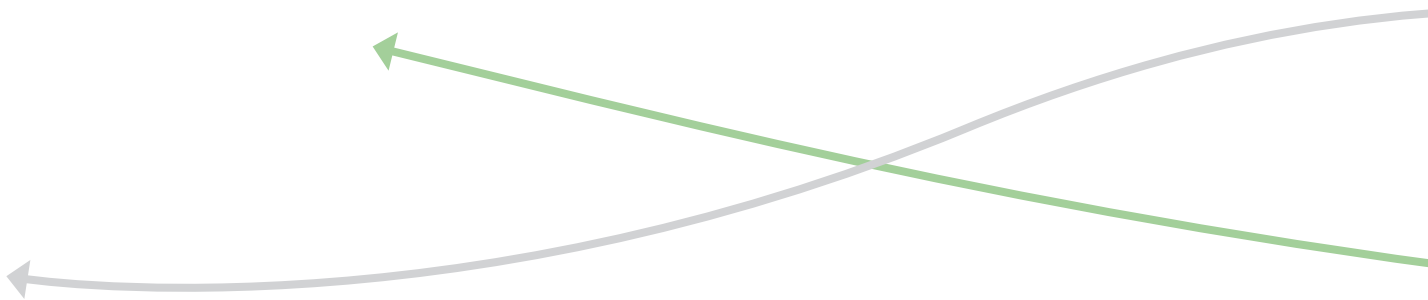
9.2.3 Strengthen traditional people-centred affinities to build social networks and social capital

IP communities worldwide have strong, vibrant traditional institutions that govern access to resources, natural resource management and benefit sharing based on customary norms reflecting fundamental values of their relationship with nature and sharing and caring of their members. IP communities also have affinity-based institutions that are gender, or peer based. Together, these institutions are critical actors in ensuring effect governance. It is important to strengthen such institutions, making them more inclusive where required, and harness them for responsible and effective governance. Affinity based institutions should also be tapped for strengthen resource governance (and access and benefit sharing) and bridging the gap between local governance institutions and those set up under statutory governance mechanisms of the State.



PART 10

10.1 INTERCULTURAL KNOWLEDGE CREATION, MANAGEMENT AND TRANSMISSION



Indigenous Peoples have been keen observers of nature's process of emergence and self-organisation. They have been adapting to these changes in their natural environment. Their keen observation has triggered processes of creation of knowledge that supports their decisions and actions in relation to the design and management of their natural resources including their food systems. This knowledge is accumulated, managed, innovated and transmitted to new generations as living examples of sustainable management of nature and its food systems.

This knowledge, based on empirical evidence, is today very much needed in order for the world to transition to more nature-based food systems to address mounting global challenges.

Indigenous Peoples' knowledge spans multiple scientific disciplines and varies across tribes, communities, landscapes, regions. It could, for example, include knowledge of:

- Forest resources, wild edibles and sustainable foraging.
- Traditional food preparation and preservation.
- Medicinal properties and applications of local plants and species.
- Fundamental structures of ecosystems, including key species, interdependencies and complementary ecosystem services offered between species.

- Mental maps of the territory including its present and historical usage.
- Practices to evaluate, manage and optimise soil health and fertility.
- Seeds, seed protection/saving practices, optimal planting timing and conditions.
- Food system design & management e.g. selection of complementary crops, species and seeds and the management of seasonally diverse annual farming and harvesting calendars.
- Management of rotational farming systems including the management of fallows.
- Food security, food safety and food sovereignty, guiding the planning of their food systems.
- Breeding of species to enable adaptation to climatic conditions or the development of favourable characteristics.
- Traditional practices of bee keeping, including pollination, and management of population of wild species when hunting is part of the food systems.
- Early warning systems for changes in seasonal climate patterns.
- Customary norms, regulations and designations used to prevent over-use.
- Offering ecosystem services, via the design and management of food and natural systems.

Indigenous Peoples have however faced intentional discrimination and marginalisation and attempts to assimilate them into mainstream cultures and knowledge systems have had devastating consequences on their culture, health, wellbeing and knowledge retention and creation.

In order to support, retain, and encourage Indigenous Peoples' knowledge and raise its profile within the agroecology and regenerative food systems, this Outcome Framework will promote the enrichment of the factual and objective approach of science with Indigenous Peoples observations and wisdom and thereby enhance all stages of knowledge from co-creation to transmission.

10.2 PATHWAYS

The Outcome Framework will promote the creation, management and transmission of Intercultural knowledge by calling for the documentation of the present Indigenous Peoples knowledge on food systems. However, such a documentation process must be preceded by an important step of gaining a more in-depth understanding of processes behind the creation of Indigenous Peoples' knowledge systems. This will be an important pre-condition of the Outcome Framework if TIP is to successfully facilitate processes of intercultural co-creation of knowledge (IP's and other ways of creating knowledge). The transmission of knowledge and the way it is created, must also not be only between different cultures but must include people of different ages and gender of the same culture as active participants. In doing so, the Outcome Framework hopes to influence non-Indigenous organizations/agencies with the successful and inclusive values of Indigenous Peoples Food Systems.

10.2.1 Documenting unique knowledge on food systems

It will be important to document and critically assess the innovations of Indigenous Peoples on habitat and landscape management. This will help to improve our understanding and interest to promote their landscape management approaches especially for enhancing mitigation measures to reduce GHG emissions. Unique and effective Indigenous Peoples food solutions and protocols will be identified and recorded for the benefit of sustainable food systems near and far. This could include, for example, efforts to record Indigenous Peoples' stories and case studies that encapsulate ways of working or documentation of good practice or indicators of seasonal change, crop and plant phenology.

10.2.2 Understanding the processes behind the creation of Indigenous Peoples' knowledge systems

Each IPFS is the result of knowledge accumulated by diverse Indigenous Peoples through time, with different means and adapted to unique local conditions. This knowledge is the result of a process that led to decisions and actions in the design and management of an Indigenous Peoples food system. Therefore, finding out the way knowledge was created in a given situation has to be understood and encouraged. The essence behind the thinking that sustain the particular knowledge system would otherwise be lost and with it the possibilities of developing new and appropriate innovations could also be lost. The Outcome Framework will therefore proactively promote the importance of understanding the processes behind the creation of Indigenous Peoples' knowledge systems.

10.2.2 Facilitating processes of intercultural co-creation of knowledge (IP's and other ways of creating knowledge)

The Outcome Framework will facilitate co-creation of knowledge by having different ways of knowing and learning working together between Indigenous Peoples and Scientists. The co-creation process will honour values, science and traditional knowledge.

Holding intercultural learning events where IP members (elders, knowledge holders, youth), members of scientific agencies and local governance bodies will collectively participate and validate the approaches will be important. This will help to co-develop scalable protocols for habitat and landscape conservation and restoration.

The Outcome Framework will ensure that this process is an intercultural one, where different disciplines and cultures with different knowledge systems work together to find viable solutions for people, nature and climate. Such initiatives will also include people of different ages and gender within the same culture. The transmission of knowledge should also be:

- Across generations through efforts that bring together elder knowledge holders with younger generations;
- Across communities and cultures; and
- Between indigenous and contemporary farming groups and
- Learning that there are different ways of knowing and each one has bases and processes that need to be understood.

Effective initiatives will include the establishment of community learning centres, food festivals, seminars, exchange visits, promotion of intergenerational learning pathways

including openness to self-organisation, showcases of good practice and mapping existing practices. This includes for example fellowship programmes, apprenticeships with Global Partner Organisations and Agencies, and even graduate programs.

10.2.3 Influencing non-Indigenous organizations/agencies in the values of IPFS.

This includes focused learning exposures for regulatory agencies to encourage co-creation of knowledge, participatory management and efforts to strengthen partnerships. This knowledge and empirical evidence is needed in order for the world to transition to more sustainable food systems that address mounting global challenges.

10.2.4 Exchange & Immersive Exposure visits

Learning experiences and peer exchanges through immersive exposure visits is a well-tested method that needs adoption for the dissemination of IPK, IP innovations and an understanding of IPFS functioning in different IP landscapes across countries.

10.2.5 Application, validation, testing and adaptation of knowledge

Through co-creation and incentives to encourage cross infusion of approaches. This will require the support of research projects, PHDs investigating key indicators or ideas or scaling interventions for conservation.

10.2.6 Support for indigenous youths wanting to build futures as experts in Indigenous Agroecology

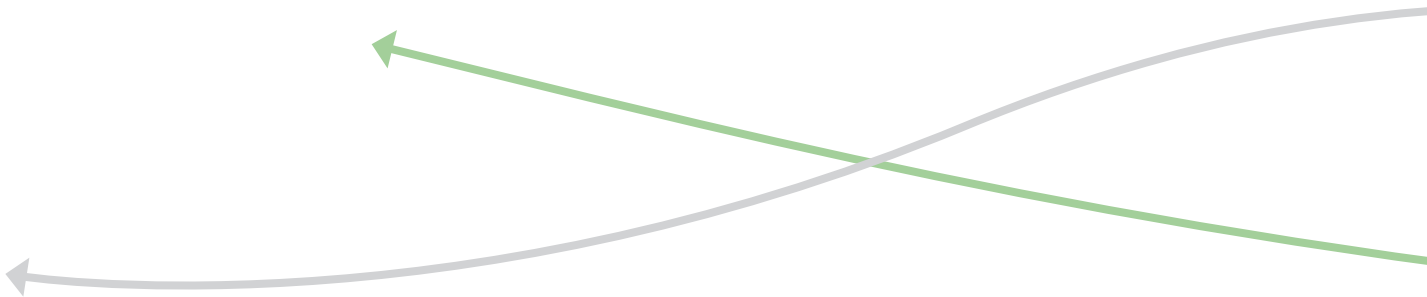
This includes for example fellowship programmes, apprenticeships with Global Partner organisations and agencies.

10.2.7 Influence and educate non-indigenous agencies in the value of IPFS

This sometimes includes focused learning exposures for regulatory agencies to encourage participatory management and efforts to strengthen partnerships.

PART 11

CROSS CUTTING AREAS NECESSARY FOR EFFECTIVE IMPLEMENTATION



While the preceding sections elaborate on the outcomes sought and the pathways to attain the outcomes, three supportive areas will need equal attention – (i) capacity building (ii) knowledge management and (iii) partnership building.

11.1 Capacity Building:

It is quite apparent that operationalisation of the pathways described under all outcomes will require capacity building on a large scale and in diverse areas – thematic, technical, management, finance and programme implementation. While detailed specifics of capacity building needs can be assessed as implementation plans under each pathway are drawn up, need assessments of implementation teams, IP communities, especially the youth and women

will emerge only as programme implementation proceeds. Suffice to say that in addition to capacity building in management topics, achievement of effective outcomes will also depend critically on technical training and mentoring in specialised areas. Need for technical expertise and consultancies in specialised areas will be critical and consistently required for developing skills and nature-based, green enterprise development.

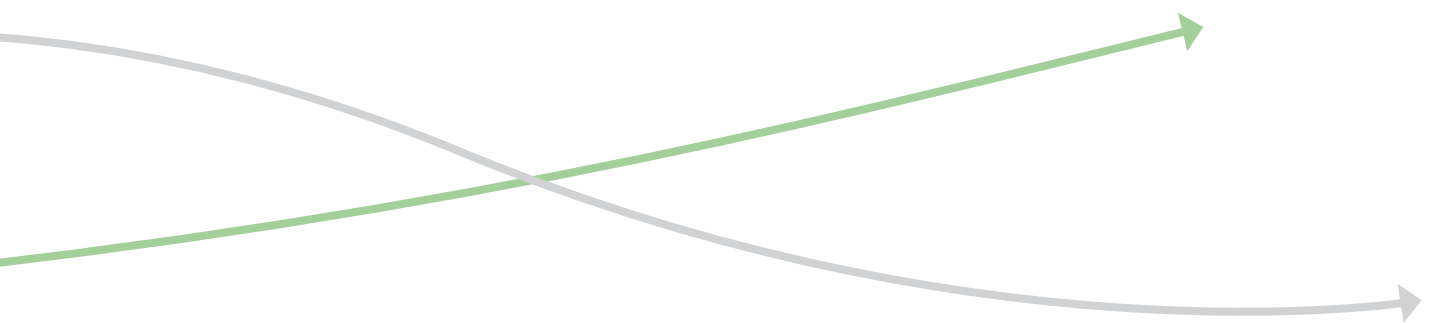
11.2 Knowledge Management for Programme Initiatives

The Outcome Framework pathways will generate a rich repository of knowledge as shown in Part 10 of this Framework. The knowledge thus generated will require effective packaging and dissemination and will therefore require serious professional attention and innovative support.

11.3 Partnership Building

Translating the numerous pathways listed under each outcome will quite obviously require a wide range of partners at all levels. Partnerships will need to be established with development organisations for field operationalisation of suggested pathways. Similarly, partnerships for capacity building in technical areas as well as skill development will be critical at all stages of implementation. The Outcome Framework involves documentation and validation of IP practices and approaches and the co-development of a package of practices based on templates of solutions. This is a major component of the Outcome Framework Programme implementation and will require partnerships with a wide variety of research organisations and universities. Once the 'proof of concept' is established, TIP will be required to have a clear roadmap for taking the results to scale and will need a partnership mapping ready that should suggest the group of partner organisations who will take the outcomes to scale. This set of partners will necessarily be of two categories – those supporting large Scale field implementation through their programmes and a second category who will be the Influencers, engaging with governments, corporates and philanthropy to bring about policy change.

In order to retain Indigenous Peoples' knowledge and raise it's profile within the agroecology and sustainable food systems arena, efforts to nurture, support and improve all stages of knowledge management should be promoted.



PART 12

ANNEX

INTRODUCTION

The critical objectives of TIP's IPFS Outcome Framework, as spelt out in the main document, are:

- i. Uncover how successful IPFS deliver agroecological and global outcomes.
- ii. Illustrate the role IPFS knowledge management, governance systems and values play in determining these outcomes.
- iii. Help interested stakeholders demonstrate the positive impacts IPFS have on people and planet.
- iv. Identify and scope areas where further research and collaboration is required and workstreams that can reduce any negative socio-cultural, environmental or livelihood related impacts.

Based on the work done for the TAPE Assessment and the collection of Stories, TIP prepared the IPFS Outcome Framework as an attempt of shedding light on outcomes that Indigenous Peoples can use as levers to achieve solutions that balance inclusion, equity, sustainability and climate resilience. The Outcome Framework is structured around six Outcome Themes, each with their subset of outcomes. This Annex, in the form of a matrix of outcomes, pathways and indicators, has been prepared as an essential complimentary extension, to provide an operational framework for translating the Outcome Themes into action employing the pathways suggested. A set of indicators have also been provided for each pathway. These are by no means seen as exhaustive, but will be further refined and sharpened in consultation with the IP community elders, knowledge holders and members of the scientific community collaborating in the co-creation of solutions and the scaling of the proposed pathways. The Outcome Matrix with its set of indicators has been prepared with the hope that it can help in developing a Baseline Survey Framework as well as in designing a Monitoring and Evaluation Tool. Finally, the Matrix should be viewed as a living document, open to refinement as operationalisation progresses and as interactions with IP elders, knowledge holders and collaborating scientific community identify the need for modification and refinement.

OUTCOME FRAMEWORK/ MATRIX OF OUTCOMES, PATHWAYS AND INDICATORS

Theme 1: Nurturing and Nourishing People and Nature: IP Management Approaches

Outcomes	Description of desired Outcome	Pathways	Examples of Indicators
(1.1) Indigenous Peoples landscapes harbour a wide diversity of habitats, each a repository of a wide variety of plants, animals and microbes reflecting the harmonious relationship between Humans and Nature	An IP landscape that reflects a mosaic of cultivated and natural ecosystems, harbouring diverse habitats, each hosting a wide variety of bioresources is promoted.	<ul style="list-style-type: none"> • Conservation and maintenance of local crop and faunal diversity of IPFS to safeguard dietary diversity, nutritional security and climate adaptation. • Pollination services promoted for enhancing biodiversity and ecosystem health. • Promote and scale community-led innovations such as community conserved reserves and community-led fish sanctuaries • Scaling up Habitat and Landscape management drawing from IP Landscape management approaches 	<ul style="list-style-type: none"> • No. of functional traditional resource management frameworks that promote conservation through landscape management approaches • Customary laws in practice, regulating harvesting of biological resources and preventing exploitation of biological resources • Proportion of natural systems to cultivated land within the landscape • Presence/conservation of heritage landscapes within the IP territory • No of villages/landscapes that have adopted IP landscape management approaches • No of community led conservation initiatives replicated; villages/communities adopting initiative(s) • Seasonal crop diversity, including diversity within crops • No crops and wild edible species in fallows. • Diversity of produces harvested/collected from different habitats. • Diversity of mushrooms and other edibles in each constituent food system • Diversity of useful insects/animals (pollinators, pest predators) • Presence of bird diversity. • Aquatic diversity and variety of fish. • Availability of fish and other creatures. • Relative importance of crop varieties (TAPE). • Agricultural biodiversity (TAPE).
(1.2) Risk aversion of community and food systems enhanced through conservation and management of heritage species and supportive natural systems	IP communities protect, breed and exchange multiple varieties of seeds for each crop. This is one of the characteristics that enables IPFS to be so diverse as well as enabling IPFS to adapt to changes in climate.	<ul style="list-style-type: none"> • Promotion of Community Seed Banks • Living gene banks to enable better climate adaptation. 	<ul style="list-style-type: none"> • No. of seed banks per community. • Number of functional Living Gene Banks established • Number and variety of heirloom crops managed and conserved in Living Gene Banks • No of consultations, participation for identification of heirloom crop varieties and establishment of Living Gene Banks • No. of community led seed banks before project vs. after project; • No. of seed bank exchange events facilitated. • No. of species of seeds exchanged. • Frequency and no. of seed exchange events • No. of people involved in seed exchange activities. • No. of species of seeds stored per seed bank. • Proportion of seeds purchased from the market.
(1.3) Healthy and fertile soils nurtured across IPFS cultivated systems	Sustainable landuse practices are adopted that enable the soil to rest and build up the nutrients necessary for plants to thrive.	<ul style="list-style-type: none"> • Promoting and nurturing practices founded on principles of recycling and waste reuse that foster soil biological processes resulting in heathy soils. • Infusion of practices and approaches from Agro-ecological, Natural Farming and Regenerative Agriculture • Compliment IP practices with appropriate scientific techniques 	<ul style="list-style-type: none"> • Diversity of traditional soil moisture and fertility management practices • Soil health (TAPE). • Adapted SOCLA rapid and farmer friendly agroecological method to assess soil health (Nicholls et al., 2004). • Level and availability of soil nutrients.(Farmers' indicator) • Presence of specific species that indicate low fertility e.g. Kdait bamboo (Yes/No). • Presents of insects or species that indicate fertility e.g. insects or earthworms, wild banana, wild edibles, mushrooms. • Soil smell and colour. • Presence of damp or fungus if applicable to food system. • Promotion/conservation of tree species that enhance soil fertility and moisture retention capacities • Rate of growth of coppices from a mother trees with respect to mother tree. • Access, quality and orientation of sunlight e.g. east facing is better. • Is the soil given opportunity to rest. • Respect for nature's capacity to recover and look after it's own health.

Outcomes	Description of desired Outcome	Pathways	Examples of Indicators
(1.4) Reduced or Zero dependency on polluting and harmful external inputs	External inputs and soil contaminants are reduced. Where possible, natural processes for soil rejuvenation and pest management are harnessed.	<ul style="list-style-type: none"> Promotion of Natural Farming, Agroecological and Regenerative agricultural practices 	<ul style="list-style-type: none"> Diversity of organic/agroecological/regenerative agricultural practices in practise Area/Food systems managed through organic/regenerative/agroecological approaches Proportion of weeds or food system waste reused as nutrient bank. No of people using natural composting practices. No of people involved in composting pilots. Degree of dependency on external inputs (expenditure on external inputs) Awareness and frequency of application of natural pest management solutions.
(1.5) Vibrant food systems that retain or mimic the dynamics of natural systems as reflected by the diversity of healthy plant, animal and microbial constituents supporting functional ecosystem services	There is not only diversity in species but the various systems are each showing characteristics that they are healthy thriving and able to support life.	<ul style="list-style-type: none"> Supporting Natural and Semi-domesticated Systems 	<ul style="list-style-type: none"> Proportion of natural habitats to cultivated systems in the landscape. Health of fallows - presence of bees, earthworms, insects and medicinal plants in the fallows. Scale and typology of forest e.g. density of small trees, No tress > 20 years, area under forest, size of trees, forest area. Health of Forests e.g. presence of mushrooms, pollinators and wild rodents. Health of Crop and Pasture e.g. Availability of areas under good pasture. Health of Aquatic ecosystem e.g. clear water, presence of aquatic indicator species (mayflies, damselflies and dragonflies or indicator species identified locally by villagers). Presence of fish/aquatic organisms recognised as indicator species by local elders Presence of grasses and weeds in the channels for fishes to hide, stones covered by moss, colour of water. To be strengthened through consultations and inclusion of community indicators
(1.7) Degraded habitats and landscapes are restored	There are intentional efforts to identify parts of the ecosystem and food systems that have degraded and intervene to support restoration.	<ul style="list-style-type: none"> Restoring degraded habitats and landscapes and strengthening conservation of biological resources building on traditional practices and approaches. Co-create and pilot IP landscape management approaches in 'broken' IP landscapes and assess their replicability and wider application 	<ul style="list-style-type: none"> No of Community led restoration efforts. Hectares identified for restoration. Restoration plans developed, under implementation. No. regulatory agencies attendees to participatory management sessions. No. of workshop attendees.
(1.8) Reciprocal exchange of labour	Exchange of labour is critical to ensuring that traditional IP framing practices are progressed without overburdening one family.		<ul style="list-style-type: none"> Functional Community labour sharing practices No of families supporting others with shared labour. Equitability of work environment.

Theme 2: Improved Nutritional Status, Good Health and Reduced Malnutrition

Outcomes	Description of desired Outcome	Pathways	Examples of Indicators
(2.1) Households have assured access to safe, healthy, nutritious food and a high dietary diversity through all seasons	There is a sustained or increased diversification of food resources available and consumed in households and schools.	<ul style="list-style-type: none"> Expand and scale School Midday Meal pilot promoting the domestication and conservation of wild edibles and local neglected and under-utilised crops Promotion of nutritional diversity campaigns in schools, home gardens and for the elderly. Promotion of home-gardens for improving access to nutrient dense food resources. Mapping Household Dietary Diversity Score (HDDS) 	<ul style="list-style-type: none"> HH numbers that do not have kitchen/homegardens No of schools with school gardens Dietary diversity (TAPE). Dietary diversity scores seasonwise; changes in HDDS per season Average dietary diversity score for school children by location. Min number of food groups accessed from food systems monthly. Use of natural systems and wild food resources (TIP). No. of wild edibles consumed throughout the year. Minimum Dietary Diversity for women (FAO and FHI 360,2016). No. of promotional campaigns held and attendees. No. of attendees participating.
(2.2) Food security - sufficient food is available throughout seasons	IP achieve food security through self-sufficiency and by ensuring enough provisions to meet household needs.	<ul style="list-style-type: none"> Promotion of nutrient dense food resources in homegardens, school gardens Managed grain bank systems for increased food security Access to food systems and food resources are assured for all 	<ul style="list-style-type: none"> Number of HHs having homegardens Number of schools having school gardens Diversity of food resources available seasonal wise Diversity of Food Groups seasonwise in each garden Seasonal Dietary diversity scores. No of food systems depended on. No of HHs having access to food systems, especially natural systems (forests, pastures, waterbodies) Level of food security e.g. Variability in seasonal availability. Proportion of community with access to food bank or food support. Average quantity of grain stored per community e.g. kg, volume, how long it will last. No. of exploratory villages participating int community grain bank project.
(2.3) Safe food processing and preservation	Farmers acknowledge and adapt to seasonal variations and have learned ways and methods to preserve food and ensure continual access to diverse food options throughout the year.	<ul style="list-style-type: none"> Food preservation and processing trainings and peer learning and exchange events WASH campaigns 	<ul style="list-style-type: none"> Number of trainings held Number of trainees Number of HHs/individuals adopting/applying preservation/processing approaches learnt Number of micro-enterprises catalysed by trainings No of people affected by waterborne or food related illnesses. No of people participating in WASH campaigns. No. of preservation techniques practiced in a community.
(2.4) Food culture and identity is safeguarded and celebrated by all	The community continues to grow a wide variety of crops passed down through generations, as these are crucial aspect of their cultural and food identity. Therefore, there is a shared responsibility to conserve them. Policy and local agencies are supportive of this.	<ul style="list-style-type: none"> Culinary demonstrations and campaigns to popularise local cuisine. Chefs trainings Initiate a policy engagement programme aimed at policy support for recasting procurement guidelines and effecting convergence with national and global nutrition improvement initiatives. 	<ul style="list-style-type: none"> No. of food celebrations and demonstrations. Attendees at culinary demonstrations. No. of crops identified as generational crops that are part of food identity. Loss of access to generational crops. Youth participating in harvesting activities and celebration. No. of agencies identified and contacted; No. of meetings held. No. of policy engagements conversations held. No. of procurement guidelines meetings held.
(2.5) Solidarity, empathy and healthy division of physical labour	The division of labour is fair, reciprocal and shared so that the burden is reasonable and it does not lead to unnecessary work related illnesses.		<ul style="list-style-type: none"> No of Work related illness reported. Health of community e.g.good eyesight, healthy bones. Fair distribution of labour (Women often do sowing and weeding.) Connection with and support from neighbouring farmers.

Theme 3: Improve Nature-based Green Livelihood Opportunities

Outcomes	Description of desired Outcome	Pathways	Examples of Indicators
(3.1) Yield or productivity from cultivated food systems is sufficient and provides a marketable surplus	Good productivity, sustained yields of diverse crops because of good soil management and sustainable farming practices.		<ul style="list-style-type: none"> • Productivity in volume per crop (TAPE). • Proportion of produce sold vs. consumed. • Seasonal and annual variation in yield from cultivated food systems. • Quantity of food resources from the natural systems. • Value of products marketed locally. • Number of HHs that have income from marketable surplus
(3.2) Surplus income is sufficient to meet needs for food purchase, schooling, house building, energy and other expenses.	Income from the sale of produce is sufficient to cover household needs for food, schooling, house building, energy and other expenses.		<ul style="list-style-type: none"> • Income per month, plotted over year. • Income (**Economic resilience and reduction of vulnerability) (TAPE). • Surplus income per month, plotted over year. Stability of income(TAPE). • No of HHs able to meet essential needs (food, health, education) without borrowing • No of HHs having savings after expenditures • Added value (TAPE). • Output value per hectare (TAPE). • Cost of inputs (TAPE). • Operational expenses e.g. energy (TAPE). • Income sufficient to fund education. • Rewards for labour exchange . • Access to timber or firewood.
(3.3) Local green livelihoods for indigenous people seeking employment and entrepreneurship opportunities enhanced	IP livelihoods are diversified through the creation of innovative career paths that support nature-based solutions.	<ul style="list-style-type: none"> • Promote and strengthen livelihood opportunities that draw on local skills, knowledge and resources. • Internship. 	<ul style="list-style-type: none"> • No. of green livelihood business opportunities and models identified and documented • No. of Indigenous Youth on fellowship / training programmes. • Migration (TAPE). • Access to jobs (TAPE).
(3.4) Flourishing micro-enterprises and enterprise knowledge training support networks	Indigenous People communities have flourishing micro-enterprises and access to knowledge networks on how to set them up.	<ul style="list-style-type: none"> • Support and replicate IP innovative approaches that promote Forest gardens and agro-forestry models for diversifying forest-based livelihood and entrepreneurial opportunities. 	<ul style="list-style-type: none"> • Green livelihoods based on non-crop forest produces - dyes, fibre, NTFPs etc. • Diversity of enterprises
(3.5) IP Communities have access to finance that they can invest in nature based opportunities	Communities have set up mechanism for saving and reallocating funds to local members who need investment for their cultivation or pasture initiatives. Alternatively the community has access to non-exploitative, affordable and equitable finance solutions.	<ul style="list-style-type: none"> • Encourage and develop Bankable models drawing on the Forest Garden concept practised by Karens and the Mei Ramew Café initiative in Meghalaya. 	<ul style="list-style-type: none"> • Members of self-saving groups. • No of community members who benefited from a loan / community contribution over the past year. • Access to bank loans for green enterprises. E.g. no. community members. • Qualitative feedback on loan experience and ability to repay. • Confidence and clarity on compliance required to be bankable.
(3.6) Professional development opportunities for indigenous youth	Indigenous Youth are given the opportunities to progress their professional development, they are supported and enabled and given opportunities to advocate for IP on global stages.	<ul style="list-style-type: none"> • Building a cadre of Young IP Professionals • Apprenticeships with Global Partner organisations and Agencies. • Training workshops and short courses. 	<ul style="list-style-type: none"> • Youth employment opportunities (TAPE). • Access to training (TAPE). • Access to education (TAPE).

Theme 4: Adaptation to Climate Change, risk mitigation and emission reduction

Outcomes	Description of desired Outcome	Pathways	Examples of Indicators
(4.1) Food systems and the environment have the capacity to adapt to climate change	The diverse crop species and varieties grown are adapted to the local environment and there is spare capacity within the system to accommodate unexpected losses. Species are selected and bred to have advantageous properties. Diversity of food systems, including natural systems nurtured as a risk management mechanism.	<ul style="list-style-type: none"> Diversification of food systems to build inherent robustness. Live seed banks (included in Theme 1) Hazard mapping and mitigation planning. Explore mechanisms to incentivise IP good practices. 	<ul style="list-style-type: none"> Traditional risk management mechanism in practise. Traditional social safety mechanisms and networks functional. No. of food banks. Months of food demand stored. No of species selected for planting or bred for their climate resilient properties. Surplus of yield. Proportion of dietary diversity that is at risk from a climate hazard shock or stress occurring. Resistance to extreme weather events.
(4.2) Contribution to global reduction in GHG emissions	IP landscape management approaches contribute substantially to global GHG emission reduction through conservation and management of Forests and other natural systems.	<ul style="list-style-type: none"> Enhancing Mitigation Measures to reduce GHG Emissions through IPFS and IP Landscape Management Approaches 	<ul style="list-style-type: none"> IP management approaches promoting sustainable management of natural resources (forests, pastures, water bodies) in place Customary laws governing management and sustainable use Ecosystem services nurtured through IP management approaches Area under forests, regenerating fallows and pastures
(4.3) IP communities receive Early Warnings of major climatic events and are afforded the time to prepare	IP communities combine their traditional wisdom on early warnings with new technology to get advance warning of climate hazards.	<ul style="list-style-type: none"> Establishing a grassroot level weather monitoring and early warning system and linking to sub-national meteorological network for facilitating an inclusive insurance service 	<ul style="list-style-type: none"> Extent of grassroot weather monitoring networks. Hazard mapping and response plans in place No. communities with climate adaptation plans. Links with local meteorological agencies established for data recording and analysis. Mobilisation of community groups e.g. schools in mitigation and emergency plans.
(4.4) Social mechanisms effectively reduce vulnerability to shocks and stresses	Social resilience is linked to mutual responsibility, reciprocity, social justice and cooperation based on traditional values of sharing and caring. The governance and collaboration efforts extend to include preparation for climate shocks and stresses.	<ul style="list-style-type: none"> Enhancing Resilience through social networks and social capital. 	<ul style="list-style-type: none"> Traditional peer affinity bodies/institutions that are active and functional Number of social safety networks functional Traditional risk mitigation mechanisms in place and functional Awareness and mapping of local shocks, stresses and hazard (including climate impacts). No. Multi-climate risk assessments completed. No. of communities with climate emergency response plans. Access to refuge in times of flooding. Access to insurance mechanisms for damage from climate events.

Theme 5: Responsible Governance and Values Driven Decision Making

Outcomes	Description of desired Outcome	Pathways	Examples of Indicators
(5.1) Needs of natural ecosystems are respected and met IP Governance mechanisms that nurture Nature widely adopted and supported	Nature has many needs e.g. need to reproduce, need for nutrients, for rest, for natural resources. Good governance considers the needs of natural ecosystems in decisions.	<ul style="list-style-type: none"> Scaling up Habitat and Landscape management drawing from IP Landscape management approaches 	<ul style="list-style-type: none"> Customary laws of access and benefit sharing reflecting approaches that nurture harmonious relationship with Nature. Customary norms regulating natural resource harnessing and use. Proportion of annual governance decisions within a food system taken that respect and meet nature's ecosystem needs.
(5.2) Decision making is inclusive and equitable	Consideration of the needs of all members of the community in decision making including women. Discrimination is not present, all members are considered equals.	<ul style="list-style-type: none"> Engage with traditional institutions to be inclusive and provide decision making foras for inclusion of voice of marginalised members Encourage and promote participatory decision making mechanisms to enhance inclusive and equitable decision making 	<ul style="list-style-type: none"> Diversity within decision making committees. Composition of Traditional Decision making institutions. Traditional Women's decision making forum and functionality. Mechanism(s) for voicing concerns by disadvantaged community members (including women) and number of times TI acts on such concerns. Abbreviated Women's Empowerment in Agriculture Index. (TAPE). Inventory of discrimination. Women's empowerment (TAPE). No. Participants in land mapping.
(5.3) Participatory Landuse planning adopted universally to promote sustainable landuse practices and strengthen universal access to resources and security of tenure	In exemplary systems, land tenure is managed for the benefit of the wider community. Access to land tenure is universal.	<ul style="list-style-type: none"> Promote sustainable Landuse practices through Participatory Perspective Landuse Planning and mapping (PPLPM) based on traditional IP Landscape management approaches that enhance forest and biodiversity conservation (As shown in theme above). 	<ul style="list-style-type: none"> No of villages/IP communities that have PPLPM prepared and endorsed Functional tenurial arrangements that ensure universal security of tenure. % of IPs with land tenure. Land management rules that limit transfers, except in exceptional circumstances. Cumulative increase in forested areas/CCAs
(5.4) Legal protection / recognition of IP stewardship role and territorial rights	IPs have security of tenure, by negotiating and formalising agreements relating to their rights to access and manage land.	<ul style="list-style-type: none"> PPLPM for all villages Engagement with relevant authorities to recognise and endorse PPLPM acknowledging the territorial rights of each IP community 	<ul style="list-style-type: none"> No. of 3D participatory mapping exercise or Landscape Management Plans drafted and presented to local authorities. No recorded departure from the plans or map by any member. No of government schemes breaching plans or norms. Existence and use of pastoral agreements and mobility corridors (TAPE) Tenure safeguarded during transformation (TAPE). No of engagement meetings held, progress towards recognition of collective ownership rights
(5.5) Community have access to support systems	Good governance and risk management will be tested in times of crises. A good governance systems will support all members in time of need.	<ul style="list-style-type: none"> Strengthen traditional people-centred affinities to build social networks and social capital 	<ul style="list-style-type: none"> Does the community provide support to its members in times of crisis? Yes/ No Reciprocity in governance – within the community and within nature.

Theme 6: Intercultural Knowledge Creation, Management and Transmission

Outcomes	Description of desired Outcome	Pathways	Examples of Indicators
(6.1) Critical knowledge is documented, protected and disseminated	This could be different depending on the IP community but could be for example knowledge of forest resources and wild food harvesting crop diversity, slash and burn farming or early warning systems for climate risks.	<ul style="list-style-type: none"> • Documentation of knowledge and sourcing of lost knowledge • Document, validate IP landscape management approaches adopting an intercultural approach • Scaling out community measures supported for establishment of bioreserves and sanctuaries. 	<ul style="list-style-type: none"> • Frequency and accessibility of gathering opportunities where knowledge is shared e.g. gatherings, exchange of labour. • Presence of a cultural curriculum in schools.
(6.2) Inter-generational learning mechanisms promoted and strongly supported	Indigenous Knowledge is successfully passed on from elder generations to younger generations, maintaining the continuity that gives it the gravitas of centuries of trialling and testing. It is transferred through many activities including labour sharing, storytelling and celebratory gatherings.	<ul style="list-style-type: none"> • Inter-generational Learning mechanisms identified, documented and showcased • Inter-generational and inter cultural learning mechanisms promoted and supported 	<ul style="list-style-type: none"> • No. of elder knowledge holders as a proportion of community population. • No of intergenerational learning forums functional • Frequency of knowledge exchange events • No of participants, attendance in events • No of stories/practices recorded for traditional inter-generational learning . • Horizontal creation and transfer of knowledge (TAPE). • No. of peer learning models or good practices identified as effective through trial testing with groups.
(6.3) Strength of intercultural learning mechanisms	Intercultural learning is used to strengthen knowledge exchange and enable co-creation.	<ul style="list-style-type: none"> • Knowledge dissemination • Exchange & Exposure visits 	<ul style="list-style-type: none"> • No. and quality of knowledge exchange visits across communities, tribes and global regions. • Total No. of attendees per year benefitting from cross-learning events. • No. of IP participating in exchanges.
(6.4) Access to communities of practice who apply, validate and test knowledge	Established communities for knowledge holding and exchange are present and supported.	<ul style="list-style-type: none"> • Application, validation, testing and adaptation of knowledge • Co-develop and pilot IP landscape management approaches in 'broken' IP landscapes and assess their replicability and wider application (also in Theme 1) • Training Workshops/Short courses (also in Theme 3) 	<ul style="list-style-type: none"> • Mechanisms for learnings established • Access to agroecological knowledge (TAPE). • Proportion of community . • No. community learning centres planned. • No of network members from various constituencies; frequencies of meetups; quality of collaboration and openness to support.
(6.5) Acknowledgement of Nature and IPs as repositories of experiential and empirical knowledge		<ul style="list-style-type: none"> • Exchange & Exposure visits • Capacity Building: 	<ul style="list-style-type: none"> • Value and respect for farming. • Respect for local knowledge. • No. of indigenous agroecological practitioners in senior decision-making roles within sustainable food systems organisations. • No. of tribes present at IPFS conventions and events. • No. of campaigns executed. • No. regulatory agencies attendees to participatory management sessions. • No. of indigenous youth on a training programme to become advocates and experts in Indigenous Agroecology. • No. of funders advocating for this outcome.

RISK ASSUMPTIONS (OR BARRIERS TO CHANGE) FOR EACH THEMATIC OUTCOME

Summary of barriers to change

Theme 1 - Nurturing and Nourishing People and Nature: IP Management Approaches

- Scepticism of the scientific community about the validity and effectiveness of Indigenous Knowledge Systems may hinder the wider acceptance and adoption of Indigenous Peoples management approaches, thus emerging as a significant barrier and hindrance to change.
- The lack of scientific validation of Indigenous Peoples practices and management approaches and insistence on the need for scientific evidence confirming their effectiveness can be used as an argument to dismiss the potential of IP practices and management approaches as promising 'templates of solutions', more so since solutions to the triple planetary crisis are required urgently.
- Adopting the urgency for climate action and effective solutions, the scientific community could strongly oppose adoption of IPKS based approaches as gamechanging solutions citing the lack of sufficient scientific validation and evidence
- Compulsion of governments for agricultural development can push for 'technical solutions' that are based on HYV promotion, GM based techniques and be less accommodative for IPKS based solutions such as IPFS and IP Landscape management approaches
- Market driven, consumption based development philosophies could hinder the support and wider acceptance of IPKS based solutions for agricultural transformation and climate action.
- Market and policy driven push for contemporary agricultural approaches could drive landuse changes compromising landuse management approaches practised by IP communities, increasing landuse pressures beyond 'tipping points' rendering IPKS based landuse practices to become ineffective thus accelerating land degradation, biodiversity loss compromising food and nutritional security and increasing poverty.

Theme 2 - Improved Nutritional Status, Good Health and Reduced malnutrition

- Scepticism on the relevance of wild edibles and local neglected and under-utilised crops as nutrient dense resources and the lack of scientific information on the nutritional value of these resources can hinder the promotion and adoption of these resources at satisfactory scales.
- The localised distribution and abundance of such resources could hinder the adoption and scaling of this approach as an effective pathway for addressing nutritional insecurity and reduction of malnutrition
- Market and policy promotion of commercial alternatives and nutrient supplements could discourage households and relevant agencies from supporting wild edibles and local

- neglected and under-utilised crops as a viable, low cost option for nutritional improvement
- Bureaucratic rigidity and resistance to try 'out of the box' options and policy lethargy to adopt innovations could hamper flexibility to relax school meal and public distribution procurement guidelines, thus delaying policy reforms favouring inclusion of wild edibles and local NUS crops in school meal and PDS procurement.

Theme 3 - Improve Nature-based Green Livelihood Opportunities

- As the number of elders and knowledge holders decline with ageing and their demise, the gradual loss of indigenous peoples knowledge and skills for harnessing natural resources and forest produces for developing niche products may challenge the widescale adoption and diversification of nature based green livelihood options
- With the exposure of youth to consumeristic lifestyles, interest of youth towards livelihood and entrepreneurial opportunities based on traditional nature-based green options may be low
- Returns to labour and investments could take time to become attractive, discouraging the youth from adopting such livelihood options
- Supply side challenges such as seasonality and limited volumes of raw materials availability could discourage entrepreneurs from taking up such ventures
- Investor confidence in the business feasibility of nature based green livelihood options may be low and difficult to build up thus hampering investments and the adoption and establishment of green livelihood options

Theme 4: Adaptation to Climate Change, risk mitigation and emission reduction

- Policy environment supportive of conventional, exclusionary conservation approaches, alienating people from Nature and protective areas, and thus dismissive of Indigenous Peoples approaches to resource management
- Push for agricultural expansion promoting commercial cropping aggressively encroach into forested areas overriding Indigenous Peoples landscape management approaches compromising opportunities for climate mitigation and emissions reduction
- Market and policy driven commercial agriculture promotion regularly deplete forested and other natural habitats dismissing the wisdom of traditional landscape management approaches compromising opportunities for climate mitigation and emissions reduction
- Agricultural policies promote drastic landuse changes favouring expansion of commercial plantation crops compromising conservation and management of natural habitats thus compromising climate action through adoption of IP landscape management approaches

Theme 5: Responsible Governance and Equitable Decision Making underpinned by Values

- Policy support for homogenisation of governance undermines policy environment supportive for decentralisation and devolution of decision-making powers to local and traditional governance structures
- Traditional governance mechanisms and institutions of Indigenous Peoples not accorded due recognition and empowerment compromising inclusive and equitable decision making and access to resources
- Ancestral territorial rights of Indigenous Peoples not recognised by statutory bodies thus making claims to ancestral territory, access and benefit rights to land and resources null and void
- Ignorance of Indigenous Peoples customary framework on access to resources and tenurial rights results in the replacement of IP access and tenurial frameworks with Private Property Regimes thus compromising universal access rights and security of tenure inherent in IP governance mechanisms

Theme 6: Intercultural Knowledge Creation, Management and Transmission

- Declining numbers of Indigenous Peoples knowledge holders resulting in a rapid erosion of IPKS hampering intra- and inter-generation learning and knowledge transfer
- Insufficient knowledge holders and inter-cultural knowledge generation experts limiting inter-cultural and inter-generational learning efforts and mechanisms
- Arrogance of scientific community and the resultant scepticism on indigenous knowledge and knowledge holders hampers the development of intercultural knowledge co-creation mechanisms

MAPPING THE TIP IPFS OUTCOME FRAMEWORK ONTO SDGS AND THE GLOBAL BIODIVERSITY FRAMEWORK

Theme 1 – Nurturing and Nourishing People and Nature: IP Management Approaches

The Outcome Theme relates and will contribute to several SDGs, and these specifically, are:
SDG2 Zero Hunger
SDG 15 Life on Land
SDG13 Climate Action, and
SDG 5 Gender Equality

In addition, the Outcome Theme also contributes to the following Targets of the Global Biodiversity Framework (or Kunming-Montreal Declaration):

Target 3.... at least 30 per cent of terrestrial and inland water areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed....

Target 4: ... to halt human induced extinction of known threatened species and for the recovery and conservation of species.....to maintain and restore the genetic diversity..... including through in situ and ex situ conservation and sustainable management practices

Target 7, Reduce pollution risks and the negative impact of pollution.....by reducing excess nutrients lost to the environment by at least half, including through more efficient nutrient cycling and use....

Target 8: Minimize the impact of climate change.....through nature-based solutions and/or ecosystem-based approaches, and

Target 10: areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices

Theme 2 – Improved Nutritional Status, Good Health and Reduced malnutrition

This Outcome Theme is directly relevant, and contributes to:
SDG 3 Good Health and Well-being
SDG 2 Zero Hunger
SDG 5 Gender Equality
SDG 12 Responsible Consumption and Production
SDG 17 Partnerships for the Goals
SDG 13 Climate Action

In addition, the Outcome Theme will contribute to the following targets of the Global Biodiversity Framework:

Targets 10: areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices

Target 14... full integration of biodiversity and its multiple values into policies.... planning and development processes....

Target 16... people are encouraged and enabled to make sustainable consumption choices....

Theme 3 – Improve Nature-based Green Livelihood Opportunities

The Outcome Theme relates, and contributes to:

SDG 8 Decent Work and Economic Growth

SDG 1 No Poverty

SDG 10 Reduced Inequalities

SDG 13 Climate Action

The Outcome Theme additionally contributes to the following Targets of the Global Biodiversity Framework:

Targets 5 Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation....

Target 9: Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits for people....

Target 10: areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices....,

Target 19:progressively increase the level of financial resources....leveraging private finance.... encouraging the private sector to invest in biodiversity....stimulating innovative schemes.... enhancing the role of collective actions, including by indigenous peoples and

Target 20: Strengthen capacity-building and development, access to and transfer of technology.....including through South-South, North-South and triangular cooperation

Theme 4 – Adaptation to Climate Change, risk mitigation and emission reduction

The Outcome Theme relates to, and contributes significantly to:

SDG 13 Climate Action

SDG 15 Life on Land

SDG 5 Gender Equality and

SDG 17 Partnerships for the Goals

Additionally, the Outcome Theme contributes to the following targets of the Global Biodiversity Framework:

Target 1all areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management.....to bring the loss of areas of high

biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities

Target 2, at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity

Target 3,at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed.....recognizing indigenous and traditional territories..

Target 8 Minimize the impact of climate change.....through nature-based solutions and/or ecosystem-based approaches.... and

Target 14 Ensure the full integration of biodiversity and its multiple values into policies, regulations planning and development processes.....

Theme 5 - Responsible Governance and Equitable Decision Making underpinned by IP' Values

The Outcome Theme relates to, and contributes towards:

SDG 10 Reduced Inequalities

SDG 5 Gender Equality

SDG 16 Peace and Justice

SDG 17 Partnerships for the Goals

SDG 13 Climate Action

The Outcome Theme also contributes to the following targets of the Global Biodiversity Framework:

Target 1,all areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management.....to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities

Target 14, Ensure the full integration of biodiversity and its multiple values into policies, regulations planning and development processes.....

Target 21 Ensure that the best available data, information and knowledge are accessible to decision makers, practitioners and the public to guide effective and equitable governance, integrated and participatory management of biodiversity

Target 22 Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making...

Theme 6 – Intercultural Knowledge Management, Research and Dissemination

The Outcome Theme relates to and will contribute towards:

SDG 4 Quality Education

SDG 16 Peace and Justice

SDG 17 Partnerships for the Goals

SDG 13 Climate Action

SDG 10 Reduced Inequalities

Additionally, the Outcome Theme contributes to the following Global Biodiversity Framework Targets:

Target 20, Strengthen capacity-building and development, access to and transfer of technology.....including through South-South, North-South and triangular cooperation

Target 21 Ensure that the best available data, information and knowledge are accessible to decision makers, practitioners and the public to guide effective and equitable governance, integrated and participatory management of biodiversity

Target 23. Ensure gender equality in the implementation of the Framework through a gender-responsive approach, where all women and girls have equal opportunity and capacity to contribute to the three objectives of the Convention, including by recognizing their equal rights and access to land and natural resources and their full, equitable, meaningful and informed participation and leadership at all levels of action, engagement, policy and decision-making related to biodiversity.

