

P2G Business Incubation Toolkit

Incubation Process for Circular Plastic Entrepreneurship



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1. Overview

This toolkit provides a practical guide to the P2G Business Incubation process, supporting incubators and stakeholders in designing and delivering structured, impact-driven programmes for plastic upcycling enterprises in Nepal.

Plastic pollution is a pressing environmental and social issue globally, and Nepal is no exception. Establishing a plastic upcycling business can not only address this challenge but also create economic opportunities while contributing to climate change mitigation efforts. The toolkit provides a detailed guide tailored to the Nepalese context, focusing on the business incubation process with a specific emphasis on environmental and social impact.

Technology, Innovation, and Entrepreneurship are essential components necessary to bring development and additional opportunities to communities. The effective use of science and technology, coupled with the creative ability of innovation will trigger a competitive advantage. Promoting entrepreneurship with emphasis on Technology and Innovation is important.

A balance must be struck between the establishment of early-stage entrepreneurial activity and the support of these enterprises through existing enterprises and support structures. Start-up enterprise development is difficult to achieve and there are many preliminary challenges faced by such endeavours. To overcome these difficulties, a business incubation programme can enhance the development of start-ups and entrepreneurs by laying the bridge to overcome the difficulties in the early stages.

This P2G Business Incubation Toolkit outlines the process with details of the business incubation. This toolkit can be used for impact-oriented business incubation to design and develop impact-driven business models, while supporting them to be ready to access finance and market. It is designed to support organisations, firms or entities who want to support purpose-driven entrepreneurs to foster impact and innovation to unlock business opportunities, while embracing inclusivity and resilience.

Incubators need clear guidelines, roles, and expectations about the structure of the business incubation. There is no clear definition for success of business incubation and many lack the experience of supporting entrepreneurs over a long period of time. It is not an easy task to identify the conditions and directives necessary to support enterprises, in a short amount of time. Start-ups and small enterprises are a vital component to the health of the economy. As the emphasis on innovation and adaptability characteristics grows, the importance of Start-ups and small enterprises increases.

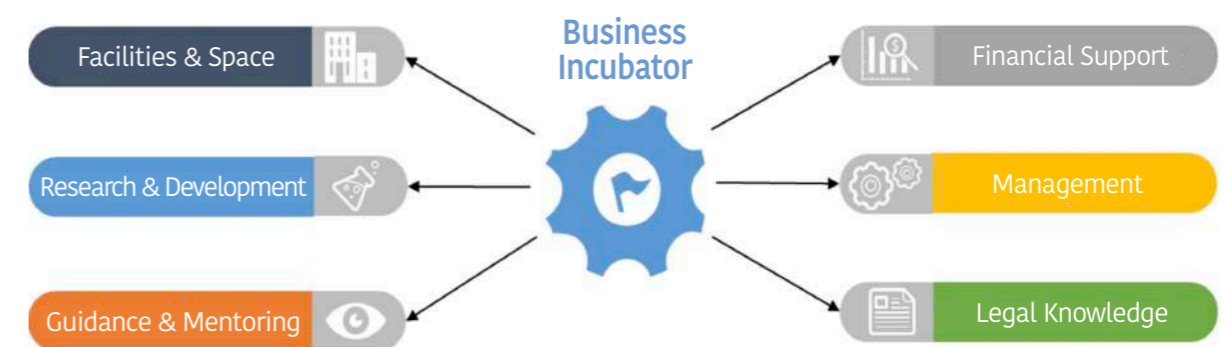


Figure 1
General Support Functions of the Business Incubator



These support functions are required for the development and growth of Start-ups and small enterprises to enhance the ability of founders and entrepreneurs and their management. The incubator should allow the enterprise to put its primary focus on developing their products and/or services. This ensures that the incubator is primarily concerned with the barriers to entry associated with financing, feasibility, and access to physical facilities necessary for a business to function. With the support of the incubator, the risks for such enterprises are reduced and seamless transition to growth can be accomplished. By promoting the growth of the start-up and small enterprise, the primary result of the incubator is to increase the success rate of the associated enterprises. Specifically, this toolkit includes major support that the incubators will provide its support to the incubatees on:

System level innovation

Technology Transfer, Capacity Building and Finance

Enterprise level innovation

Business value of Plastic Upcycling Business

The goal of the development of this toolkit is to support all those stakeholders who are working to promote the commercialisation of innovation, new business creation, increased employment, and a more highly skilled workforce.

The toolkit highlights the following key areas where collaborative initiatives are necessary from all concerned stakeholders, including industry, government, financial institutions, and international organisations:

- **Technology availability and accessibility:** customised and affordable, building capacity and capability of managing the systems at the local level.
- **Business support services:** ideation, incubation, access to finance and post investment
- **Financing for resilient business models:** demonstrate a plausible net profit margin and return on investment (ROI) based on a five-year financial projection.
- **Market innovation:** perception and understanding, going beyond the rhetoric of Plastic upcycling solutions being only for lighting, and conducting demand assessments.
- **Policy:** subsidies need to be properly designed, implemented, and monitored so that it is targeted at impoverished and disadvantaged communities, the larger industry, and the plastic upcycling enterprises.

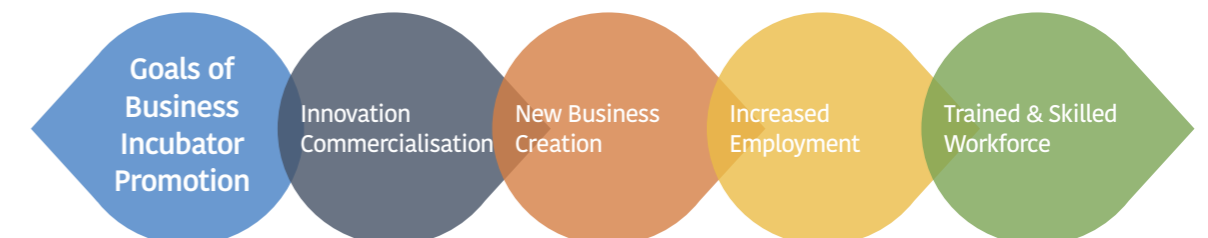


Figure 2
Goals of Business Incubator Promotion



2.

Background

Business incubation connects entrepreneurs, institutions, and stakeholders to build viable enterprises. In Nepal’s plastic waste sector, the key challenges are financing, technical capacity, and raw material access. Programmes like P2G support impact-driven, sustainable business models to address these gaps.

Business Incubation provides comprehensive and structured guidance and support to entrepreneurs to design, develop and refine business models and plans. It equips them to become investment ready, access finance, networks and markets, and provides workspace and basic facilities. This support is reinforced through masterclasses and one-to-one coaching sessions, ensuring entrepreneurs have the tools, resources and confidence to grow and eventually scale their businesses.

enterprise development and growth.

There are several forms of incubation, which may differ based on economic development, technology commercialisation, profitability, sectoral specialisation and impact entrepreneurship, amongst others. Incubation can prioritise the creation of new businesses to support economic development, employment, industrial advancement and revitalisation of the local economy. Incubation may focus on technology commercialisation emerging from universities and research institutions. As such, business incubators within academic and community settings can play a key role in nurturing promising technologies and innovations with the potential to evolve into commercially viable business models. Thirdly, from the standpoint of profit generation, incubation can seek to achieve an operating profit for its activities. Finally, the design and development of impact entrepreneurship through community-based business incubators is an important catalyst and driver in strengthening environmental and social enterprises to foster sustainable growth.

2.1 Business Incubation

Business Incubation can be conceived and operated by different types of organisations, offering services that create meaningful and intentional value to entrepreneurs. They provide effective services that will bring value to the entrepreneurs. By helping businesses grow, incubators generate wider economic benefits that extend to the community and beyond.

Entrepreneurship development benefits from incubation to create a conducive environment and conditions for businesses to evolve. This involves coordinated efforts among entrepreneurs, universities, public research institutions, local government, and private sector. When these stakeholders collaborate, they can provide benefits and services required to enhance the viability of small enterprises and start-ups. Business incubation serves as the platform that brings these stakeholders and resources together to enable

2.2 Sustainability

There is an unsaid demand for a significant shift in the way enterprises in Nepal are conceived and operated. It includes rethinking the value proposition and strategic orientation of the enterprises for the environment and society. This involves designing and developing resilient and innovative business models that integrate low carbon emission solutions, eco-efficiency approaches, gender equity and social inclusion, climate-resilient initiatives, reduce costs and create green jobs. Considering the intractable issue of plastic waste management in Nepal, upcycling plastic waste into durable housing materials will not only support the waste managers but also create new dynamics of sustainable business scenario in the country.

Table 1
Types of Business Incubation Support

Type of Business Incubation Support		
Network	Funding	Facilities
Consulting	Space	Labs
Equipment	Training	Shared services



80 percent of the households burning wood fire for food and warming the house in mountain regions has direct impact on health as well as in climate change vulnerabilities in the mountainous regions to adverse environmental impacts*. Adoption of innovative plastic upcycling technologies for developing the housing materials can assist in reducing air and water pollution and in creating employment opportunities. However the private sector lacks skilled personnel to operate and maintain the systems such as financing, business management, and technical aspects. Furthermore, the unavailability of industrial level tools and machinery hinders entrepreneurs/business from establishing Plastic upcycling industry in Nepal. Nepal has limited know-how in innovative technologies and the current need is to allocate the appropriate resources such as technology, investment and entrepreneurial support, depending on the requirements in the targeted areas. Moreover, due to scattered sources of the waste, it has been difficult to collect enough waste materials for the raw materials to run the plastic upcycling business.

Financial sustainability of the Start-ups and small enterprises in the plastic waste sector - recycling and upcycling, is one of the most challenging areas. In this context, plastic upcycling solutions can be financed through blended financing instruments such as R&D grants and bank loans, as well as finance mechanisms facilitated by municipalities and tax incentives for Start-ups and small enterprises. These financing options can be designed and channelled through key stakeholders, including government agencies, financial institutions, and international organisations, and are already being implemented. This is a catalyst to engage local communities, create jobs and encourage ownership and entrepreneurship. While research has been done in financing, there is a need to further explore and understand issues when it comes to financing impact-driven business models. Nepali entrepreneurs have the potential to uplift the plastic waste upcycling solutions

by integrating strategies and solutions into the business value proposition design (social, environmental, and economic) and strategic orientation, and by delivering through the value network.

There needs to be access to information, guidance, and support to the entrepreneurs working on integrating innovative and effective solutions to help them cater to the market. Likewise, effective government policies on foreign direct investment, an enabling environment, as well as proper rules and regulations and incentives to promote this industry is required. For example, public-private partnerships can help leveraging public resources and networks of plastic waste upcycling and enable promotion and adoption through innovative business models.

Interventions such as Plastic to Ghar (P2G) programme support aspirational entrepreneurs to create business value while solving the plastic waste issue will be critical to address the challenges, risks and the way forward. The project was designed and implemented to support innovation in Nepal's Plastic waste management sector through the integration of locally-driven innovative solutions and develop self-sustaining business models.

There is a clear need for the integration of innovation and plastic upcycling solutions into enterprises as it is cost-effective, helps with marketing and publicity, and builds resilience.

* Tika Ram, P, & Hom Bahadur, R. (2020). Hourly firewood consumption patterns and CO2 emission patterns in rural households of Nepal. *Designs*, 4(4), 46.

Table 2
Details & Components of the Incubator Operation System

Component	Description
Goals & Mission	Incubators need clarity and quantifiable goals to pursue, as well as the specification of operational objectives, such as institutional expectations.
Management Policy	Policies and guidelines aligned with the mission, including specialised sector development, phase guidelines, and consistent selection and exit criteria.
Organisational Structure	The operational composition of the business incubator, including participant diversity, staffing, and inter-agency relationships.
Resources	Funding and support from financial backers, staff and volunteers, business incubator facilities and size, budget and financial sustainability.
Outside Connections	Resident and graduate enterprises, other business incubators, associated organisations, internal and external networks.
Support Services	Office space, basic services, extension support, management support, technical support, financial support, and professional services. University support services including associated professors and student involvement, facilities, labs and workshops, R&D activities, and technology transfer programmes.

Table 3
Business Incubation Process Management Details

Management Information	Main Contents
Business Plan Mapping	Guidance for the Management of Business Operations and Strategy
Project Progress Evaluation	Check and assess the business needs and support required by operations
Commercialisation Support	Technical and Administrative Management, Funding Programme and Support
Training Programmes	Management, Technology, and Entrepreneurship Education Programmes
Specific Performance Data Management	Build and support a database to provide commercialisation history

3.

Business Incubation Framework

The P2G Business Incubation focuses on the growth of Start-ups through the provision of business support services. In the operation of business incubators, there needs to be a strategy for the mutual development of both enterprises and business incubators.

Business incubation is a model with a focus on the components of the process, goals and strategies. A basic model can be described in two dimensions with three basic elements: the incubator, enterprise, and the investor.

The process model of a business incubator can be different, so different characteristics exist depending on the established objective and physical location. The Incubator operating system can be understood through the lens of the objectives and strategy. The Incubator operating system is intended to define the relationship between the incubator and the factors that affect the basic operational activities of the Incubator enterprises.

The main elements of the incubation can be divided into six categories including goals & mission,

management policy, organisational structure, resources, outside connections, and support services. These elements are influenced by operational objectives and strategies of business incubators [Table 2](#). The main selection of the Incubator enterprises and start-ups are influenced by the factors (including whether there is sector selection or characterisation of the incubator), support utilising its resources, and guided graduation and after graduation support.

Incubatee Management

Business Incubation supports the growth of the incubatees through a variety of methods during the period of occupancy [Table 3](#).



4.

Intervention Flow

This chapter outlines the P2G intervention flow across three phases (ideation, incubation, and pre-acceleration), describing how MAKEathons, masterclasses, coaching sessions, and pre-seed funding work together to strengthen plastic upcycling enterprises in Nepal.

Plastic upcycling business ideas and enterprises in Nepal benefit from structured and dedicated business support services to shape and integrate plastic upcycling strategies and solutions into the design of the value proposition and strategic orientation, and delivery through the value network. It enables plastic upcycling enterprises to design and refine business strategies and models, improve their investment readiness, and better their position to access climate finance. The latter is particularly critical for upcycling enterprises as it is directly linked with reducing deforestation, air pollution control, waste management and building sustainable solutions from the plastic waste and climate change impact. Given the interconnected challenges, there is a need for innovation within the plastic upcycling business models to continually evolve and rethink how they create and sustain impact.

The P2G Business Incubation intervention aims to strengthen the plastic waste entrepreneurial ecosystem comprising entrepreneurs, investors, private sector, government and policymakers, through the design and development of plastic upcycling business models. Impact Hub Kathmandu implemented the incubation programme through collaboration with the University of Cambridge.

The key areas where initiatives from both national level and relevant stakeholders, collectively, will be necessary to support enterprises in the plastic upcycling sector are policy, perception and understanding, financing, and building capacity and capability. These insights were taken forward into the design and delivery of the three phases of the programme: ideation, incubation and pre-acceleration.

Approach

The ideation, incubation and pre-acceleration phases are implemented through MAKEathon, masterclasses, and one-on-one coaching sessions.

Phases overview

The MAKEathon (design sprint) is a rapid ideation process to support entrepreneurs identify the challenges and ideate opportunities and solutions to address them during the incubation phase. The masterclasses are curated and designed to introduce entrepreneurs to topics, techniques and tools that are most relevant to strengthen their business and address various challenges. The business coaching sessions reinforce topics covered during masterclasses and provide support to the enterprises to integrate required skills and knowledge into their businesses to develop resilient business models and achieve overall incubation milestones. Financial coaching sessions focus on the development and improvement of financial management systems: processes, documentation, and tracking of financial data using simple digital tools for business decision-making. The technical coaching sessions provide product design, prototyping, machine operation support with safety at its core. This coaching also helped companies to refine their product or the relevant stakeholders. The access to machines, handover and training, skill transfer was also a major part of technical coaching. The coaching sessions culminate into the development of business plans that integrate financial overview through the sustainability lens.

The coaching sessions draw on expertise from Impact Hub Kathmandu (Business Incubator), FabLab Nepal, the University of Cambridge, and external sectoral experts to support enterprises in determining how best to integrate plastic upcycling solutions into their businesses and strengthen their resilience to climate-related and other shocks.

Partnership & collaboration

Partnership and collaboration are key to the implementation of such interventions in order to generate impact across the entrepreneurial ecosystem. Bringing together a network of experts to mentor/support MSMEs for business innovation, access to finance, design-thinking, climate action, gender equality and social inclusion (GESI), and Technical knowledge transfer was fundamental to strengthen the innovation and technology capacity, knowledge sharing and peer learning.

A steering committee composed of Impact Hub Kathmandu, FabLab Nepal, and the University of Cambridge was established. The Committee represents diverse ecosystem players to address resilient business development, policy and technical challenges and promote sustainable business incubation knowledge on the plastic sector in Nepal. The key objectives of the Committee is to promote the programme, troubleshoot and drive key decisions on a need basis, and provide access to their networks and expertise in the field of recyclable plastic upcycling, financial modalities and vendors or suppliers. External experts from organisations such as Pegasys, UNCTAD, etc., were engaged to provide technical expertise.

Pre-Seed fund

Pre-seed funds are an important component for such interventions to foster incremental innovation in the transformation towards resilient business models. This has been validated by many entrepreneurs because it provides the short-term relief for businesses to test and iterate new business ideas, tackle immediate needs and work towards scale and growth. In the case of the pilot, if such a fund was not provided, most of the enterprises would not have adopted any innovative business idea, given financial strain following the pandemic.

The pre-seed fund of GBP 800 each was provided to the four enterprises to adopt recycling and upcycling solutions and approaches identified in the ideation phase and that is refined during incubation. The ideation and incubation phase helped to strengthen capabilities of the enterprises to use suggested innovative solutions to develop, manage and sustain resilient plastic waste business models.



5. Steps of Implementation

This chapter details the key steps of the P2G implementation process across three phases: ideation, incubation, and pre-acceleration. It covers the stakeholder study, MAKEathon design sprints, masterclasses, coaching sessions, and communication activities.

5.1 Stakeholders Study

The study helped to receive invaluable insights, advice and recommendations from an expert group of multi-stakeholders in the plastic waste management industry/ stakeholder/local authorities and similar sectors of Nepal. Primary data collection and analysis was based on key informant interviews (KII), semi-structured questionnaires within relevant stakeholder groups: municipalities, plastic upcycling business companies, NGOs working in plastic waste management and those who are supporting such stakeholders who are working on collecting plastic waste from different regions for different purpose.

The study examined the challenges and opportunities for the entrepreneurial ecosystem in Nepal, with a focus on plastic waste and upcycling enterprises. It explored the integration of complementary business initiatives such as renewable energy, improved waste management practices, upcycling technologies, and low cost solutions, amongst others. The data highlights pathways for designing and developing resilient enterprises, capable of withstanding social, environmental, economic, and infrastructural pressures while contributing to the circular economy narrative in Nepal.

5.2 Ideation phase

Two MAKEathons were conducted to identify start-ups and groups of individuals, who have innovative ideas/solutions to improve the living conditions of residents in Nepal by transforming plastic waste into useful housing products by the locals and for the locals. A call for applications was launched to identify plastic waste recycling and upcycling enterprises/ start-ups to participate in the design sprints. Call was accepted from different regions of Nepal, and majorly focused on mountain regions. Upon completion of both

MAKEathons, five teams/enterprises were selected for business incubation.

5.2.1 MAKEathon

MAKEathon provides clarity on the challenge the participant wants to address, which further supports them to stay on track to implement a solution that has the flexibility to change without losing sight of the challenge they initially identified for themselves to solve. Two MAKEathons were conducted. Each MAKEathon was a three-day process to rapidly identify challenges, create solutions and effectively test them. The broader objective of the MAKEathon is to select enterprises for the incubation programme. They were conducted to support the enterprises in developing ideas to adopt innovative solutions and approaches in their existing businesses, get valuable feedback on those ideas with sector experts and will now work on building and testing their prototypes through the project.

Design-thinking specialists in the ecosystem were engaged to facilitate the session with the incubation team. The objective of the MAKEathon was to select qualifying ideas and solutions to advance into the incubation programme. An idea pitching session with public and private sector experts in innovative plastic upcycling was incorporated in the design sprint to validate the solutions identified by the participants. It was an efficient component for participants to validate their ideas and solution, and receive feedback from the experts on the practicality, best practices, and alternatives based on experience and research.

Sourcing and Selection

The sourcing method for both the MAKEathons was based on online application format with 'A call for applications' being launched over social media - Facebook, Impact Hub Kathmandu's monthly newsletter and LinkedIn. Likewise, targeted emails

were sent and calls were made to stakeholders in the plastic waste management centres, plastic waste recyclers, plastic upcycling ideas and Start-ups in this sector, and those working on managing the plastic waste and developing some household materials, especially from mountain regions from all Nepal. This method of sourcing was selected to garner maximum outreach.

The participants for the MAKEathons represented a diverse mix of entrepreneurial stages. Several participants entered the programme at the idea stage, including teams that were formed during the MAKEathons, where individuals came together to jointly develop and implement new ideas. Alongside these early-stage teams, a few participants were at a more advanced stage, with registered businesses already undertaking initial commercial activities. There were also enterprises that had established operations but required access to machinery and equipment to further develop prototypes and advance product development.

With the completion of the two MAKEathons, an in-depth meeting between the University of Cambridge and Impact Hub Kathmandu was held to review the applications. The evaluation criteria were based on the business idea/stage/innovation, problem statement, prototype, alignment of the idea with the project objectives and outcome, and application submitted. Five teams/enterprises were selected to participate in the year-long incubation programme. The incubatees reflected a mix of early-stage and more advanced enterprises, allowing the incubation programme to support a range of needs, from ideation and team formation to prototyping, equipment support, and business development.

5.2.2 Baseline & Endline Interviews

The baseline and endline interviews and an 'organisation health check' were conducted as part of the monitoring and evaluation (M&E) of the programme. The purpose of the M&E is to track and measure the changes in the intervention group i.e. selected enterprises before and after the programme implementation. Baseline is conducted before the beginning of the programme to record the status of the enterprise while endline is conducted after the programme completion so that the performance and potential impact can be measured.

5.3 Incubation phase

During this phase five enterprises were assisted to develop resilient business models for scaling up their plastic upcycling businesses, through the provision of monthly masterclasses, one-on-one business, financial and technical coaching sessions, access to finance and networks, and post investment coaching support. The overall curriculum of the incubation includes varied topics, which are adapted based on the needs of the enterprises. The key outcomes of this phase is the individual business plan for the five enterprises that provide the foundation to secure investment, full technical support with facilities use, coaching and mentorships, networking with relevant stakeholders for specific issues and for unique cases handling, machinery training and issues fixing, product development, testing, refinement and finalisation.

5.3.1 Masterclasses

The masterclasses are curated and designed to introduce entrepreneurs to topics, techniques and tools that are most relevant to strengthen their business and address challenges. The majority of the masterclasses follow the model of an interactive and working session that provides one-to-one facilitation for the multiple activities within a masterclass. Some of the masterclasses follow a lecture style session with various experts followed by Q&A.

Introduction to concepts of GESI and GHG emissions during the respective masterclasses and further interpretation during the coaching sessions through the enterprise lens, helped some of the incubatees to improve their awareness and knowledge of such concepts, while for others it was the first time for being introduced to these concepts. Moreover, the incubatees were able to reflect on their value propositions with an emphasis on climate resiliency and sustainability, during the coaching sessions.

Table 4
Masterclass Curriculum

No.	Topic
1	Orientation & Incubation Milestones
2	Product Development
3	Lean Business Model Canvas
4	Assessing & Tracking Greenhouse Gas (GHG) Emissions
5	Financing The enterprise's business Solution
6	Team Building & Gender Equality and Social Inclusion (GESI)
7	Business Brief & Pitch Development
8	Reflection & Strategic Planning

Orientation and Incubation milestones Masterclass

The objective of the session on 'Orientation and Incubation Milestones' was to identify two to three working milestones that each enterprise/team will be able to achieve in the next six months to one year. The orientation covered the programme objectives, structure, benefits and answering questions and concerns about the incubation phase. Following the orientation, the enterprises were introduced to SMART goals and each team worked on the WOOP Model (Wish, Outcome, Obstacle, Plan) and identified three milestones the enterprises will work to achieve in the next seven months of the incubation programme.

Product Development Masterclass

The masterclass was designed to strengthen the incubating teams/enterprises capacity to refine and advance their product ideas into more structured and testable concepts. The session created a practical learning space where participants reflected on their solutions, clarified their value propositions, and strengthened their understanding of how their products create value for specific user groups and stakeholders.

The masterclass introduced Design Thinking as a core framework for product development, helping participants better understand user needs, define problems clearly, and align their innovation process with real market demands. Through guided exercises, entrepreneurs explored how to set meaningful development goals and approach product creation in a more systematic and user-centred manner. Functional and logical mapping tools were used to analyse product components, identify gaps, and generate improvements, enabling teams to think critically about how their solutions function and how they could be strengthened.



A key focus of the masterclass was on understanding the role of prototyping and model development: when to build, how to build, and why models are important for testing, iteration, and communicating ideas effectively to stakeholders. As a result, participating entrepreneurs gained clearer direction in their product development journey, improved their ability to articulate and refine their ideas, and strengthened their readiness to move from early-stage concepts towards more user-focused, practical, and scalable solutions.

Lean Business Model Canvas Masterclass

The 'Lean Business Model Canvas' (LBMC) masterclass was delivered with the aim to develop a visual representation of the business plans. The session focused on guided exercises to address each of the nine components of the LBMC (problem, solution, key metrics, unique value proposition, unfair advantage, channels, customer segments, cost structure and revenue streams) developing a one-page canvas for each team.

Each team was paired with a business coach as a co-facilitator to support them in populating their LBMC, allowing them to visualise the connections between different aspects of their business and identify gaps or areas for improvement. Tailored guidance provided expert input, asking probing questions, and supporting participants in populating and refining their canvas. This approach not only strengthened the incubatee's understanding of their business models but also enhanced their ability to communicate their ideas clearly to stakeholders, investors, and partners.

Assessing and Tracking Greenhouse Gas (GHG) emissions

This masterclass introduced the emissions released when plastics are heated or burned, focusing on

volatile organic compounds (VOCs). The session took the incubatees through the basic composition of plastics and how different types of plastic emit varied pollutants during material decomposition and processing, detailing their sources, properties, and pathways of exposure. A discussion on the environmental and public health risks associated with VOCs, including air pollution, respiratory illnesses, and carcinogenic effects. The session also referenced Nepal's air-quality standards and outlined mitigation steps to reduce these emissions through proper segregation, temperature control, ventilation, and pollution-control devices.

Financing the enterprise's business solution

The masterclass covered key topics related to revenue generation and cost structures, aligned with the Lean Business Canvas framework. While the revenue and costing was undertaken during the coaching sessions, these concepts were explained and consolidated during the masterclass to ensure a common understanding among all participants.

Investment-related topics were addressed during the session, including why investment is required at different stages of business growth and the potential sources from which enterprises can access investment. This helped incubatees better understand capital needs and investment readiness. The legal status of enterprises was also covered in detail. Unregistered enterprises were guided through the different legal forms under which they could register, enabling them to make informed decisions aligned with their business goals. Following this, the session introduced basic bookkeeping practices, emphasising the importance of maintaining systematic and well-organised company accounts and demonstrating how structured financial processes contribute to business efficiency and transparency. The masterclass also covered

financial reporting requirements in line with national governance and regulatory frameworks. This supports enterprises to understand their compliance obligations and strengthen their overall financial management capacity.

Team Building and Gender Equality and Social Inclusion Masterclass

This masterclass focused on two topics: Team Building - How to communicate among teams effectively and GESI responsive business plan for effective social, environmental and economic outcomes. The objective of this session was to build understanding about two crucial topics - Importance of the Team cooperation and smooth communication and GESI. Creating a strong economic value proposition of the products/services/activities of the business lies upon effective integration of teamwork, commitment and GESI value proposition.

The masterclass was designed to help the incubatees make informed decisions and incorporate best practices to become sustainable. GESI was introduced to the enterprises to support them in making inclusive business decisions. Through the session, the enterprises were able to reflect on their social value proposition with an emphasis on accessibility and inclusivity in the business model.

Business Brief and Pitch Development

During this masterclass, the incubatees engage in a focused session dedicated to refining and finalising their business briefs. With guidance from facilitators, participants critically review and strengthen key elements of their business brief, including the value proposition, problem statement, customer groups, market context amongst others. This process helps to ensure clarity, coherence, and alignment with the milestones of the roadmap. To support this process, a standardised template is shared with incubatees

in advance. This will allow them to begin drafting their business brief ahead of the session and come prepared with initial inputs and questions. The facilitators then provide feedback and support to help incubatees strengthen and finalise their briefs.

The second session focused on business pitch development. A pitch is a concise presentation designed to communicate the essence of the enterprise's business to potential stakeholders. It typically includes:

- Overview of products and services
- Business model
- Ambitions and the team's track record
- Introduction to the team
- A specific "ask" (e.g. investment, technical support)

The objective of this session is to equip incubatees with the skills and structure needed to develop a compelling pitch deck that effectively communicates their business model to diverse stakeholders. By the end of the session, incubatees will have a draft of a structured and visually clear presentation that reflects their enterprise's value, ambition, and support needs. Similar to the business brief, a pitch deck template is shared with incubatees in advance to allow them sufficient time to begin drafting their presentations. The incubatees work on refining and finalising their pitch decks with support and feedback from the facilitators.

Reflection and Strategic Planning Masterclass

The masterclass aimed to help the enterprises reflect on their progress in the programme and strategically plan their journey ahead. The first activity of the masterclass focused on reflections. The enterprises brainstormed three things that they liked, learned and longed for while running their business in the past months. The activity helped teams reflect and understand the things they want

to continue doing and the things they want to start doing in order to meet their business goals. This activity helped teams to identify the elements that helped the team lift, challenge and stabilise the team to reach and work at its fullest potential. This was done with an emphasis on looking at each element from a social, environmental and economic lens. The teams shared their reflections from the past months and things they were able to learn during the time.

The second activity during the masterclass was on creating a strategic plan for the next phase. Teams were provided with tools to identify and create milestones for the next phase. Upon identifying the milestones, the teams explored the key activities and key performance indicators (KPI). Teams worked on a six-month to one-year timeline with various tools to picture their progress for each milestone and streamlined their activities and output into a timeline. This exercise was curated to support the teams to create a strategic plan to proceed.

5.3.2 Business Coaching

The business coaching sessions are designed to strengthen an enterprise's value proposition across social, environmental and economic aspects. They provide strategic guidance on developing resilient plastic upcycling business, with support in innovation, business planning, communication and outreach, and networking capabilities. Business coaching sessions further focus on refining product and services and business models most appropriate for the incubatees. The coaching sessions help to improve the incubatee's business brief, plan and pitch, informed by organisational checks, coupled with financial coaching sessions.

A core component of the P2G business coaching was product-focused support. Sessions concentrated on how products would be developed, refined, and positioned in the market. This included identifying appropriate plastic upcycling product solutions for each

incubatee, defining product use cases, and conducting stakeholder mapping to understand who would be involved in the product value chain and where the products would be used. Marketing considerations were integrated into this process, with guidance on product sales strategies, branding, and market positioning.

The coaching supported incubatees in aligning product development with overall business goals. Through continuous and iterative business coaching sessions, incubatees worked on developing and refining their business planning and models. This included multiple rounds of review and adaptation, with particular focus on defining and validating revenue streams, cost structures, and overall financial viability. While most incubatees entered the incubation phase without a formal business plan, the combined support of business and financial coaching enabled them to develop structured, viable, and context-specific business plans.

Beyond documentation, the coaching process emphasised practical market considerations. Incubatees were encouraged to assess whether their products could realistically reach a wider customer base, explore pathways to scale, and test the relevance and accessibility of their offerings for broader markets. This iterative approach ensured that business plans were grounded not only in sound financial logic but also in real-world market potential. In addition, the business coaching addressed organisational and team-related aspects, including team composition and internal roles, complementing the financial coaching inputs. Overall, the P2G business coaching aimed to strengthen product development, market readiness, and team alignment, enabling incubatees to build scalable and sustainable plastic upcycling enterprises.



5.3.3 Financial Coaching

The objective of financial coaching is to make the enterprises aware of how their products and services generate financial value, while aligning to social and environmental value. The sessions support entrepreneurs to develop and/or improve their financial systems, documentation process and business model, covering revenue, cost streams, and financial projections. It is observed that the majority of the enterprises in the programme had limited or no procedures in place, which was identified during the financial health check conducted at the start of the incubation phase. As such the sessions were customised to address these shortcomings and the feasibility of the plastic upcycling for their overall business model development. The flowchart [Figure 3](#) represents the process and activities for the financial coaching session.

During the P2G incubation's financial coaching sessions, a wide range of topics were covered, extending beyond finance to include human resources, legal compliance, audit requirements, and organisational sustainability. A significant focus was placed on team composition, company registration processes, and building a foundation for long-term enterprise sustainability.

The sessions included detailed discussions on how seed funding works, the typical processes involved in accessing seed capital, and practical support for entrepreneurs setting up their offices. Incubatees were guided through company registration procedures, supported in determining the most suitable legal form for their enterprise, and advised on share distribution among co-founders where relevant. Where required, guidance was also provided on identifying and structuring a board of members.

Financial coaching placed strong emphasis on product pricing and cost structures. Multiple exercises were conducted on comparative financial analysis, particularly assessing the impact of using different plastic materials on pricing, margins, and overall financial viability. Teams also received guidance on financial and contractual procedures when needed.

In addition, coaching support extended to project management. When teams received small projects, they were guided on how to plan, execute, and manage these projects effectively, including timelines, roles, and deliverables. Given that several teams had members located in different parts of the country, a key focus of the coaching was on strengthening internal coordination and teamwork. This included guidance on scheduling calls, organising meetings, sharing updates, and coordinating prototyping activities across distributed teams.

Overall, the financial coaching aimed to help enterprises establish clear systems, processes, and governance structures. This foundational support was

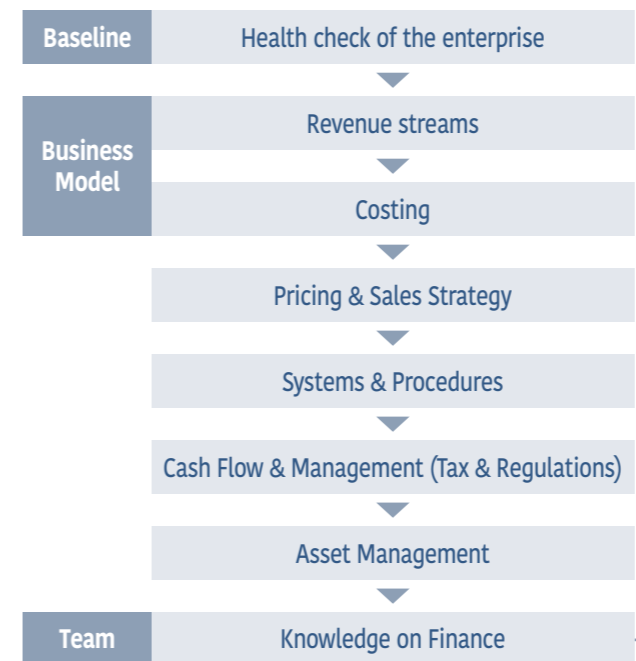


Figure 3
Financial Coaching Process



designed to ensure that as the companies grew, they would be able to operate in a structured, sustainable, and reliable manner.

5.3.4 Technical Coaching

Technical coaching sessions were provided to incubatees operating at different stages of product development. The coaching approach was tailored to the specific technical needs and maturity level of each company. During the initial phases of the programme, coaching sessions were conducted regularly, typically once or twice per month, depending on team availability. In the later phases, coaching shifted to a needs-based approach, with sessions organised upon request when teams required targeted technical support. The technical coaching was structured around the following key components:

Product Design and Development

Enterprises at the idea stage, as well as those seeking to introduce new or improved products, received technical guidance on product design and development. Support was provided on a needs basis, particularly during the design-for-fabrication phase. The technical team offered recommendations on feasible design approaches, material choices, and potential fabrication challenges. While final design decisions remained with each company, the P2G technical team shared insights based on its experience and expertise in digital fabrication and manufacturing to help teams make informed decisions.

Hands-on Prototyping and Machine Operation Support

Hands-on prototyping support was provided to all participating teams in alignment with the products they were developing. This included access to and guidance on the use of digital fabrication equipment

such as CNC machines, laser cutters, and relevant manual and power tools. For example, Paramendo received support to prototype multiple products made from recycled plastic sheets using digital fabrication machines. Similarly, Klean In Upcyclers received design-for-fabrication and prototyping support from the Impact Hub Kathmandu and FabLab Nepal technical teams to refine their upcycled product designs.

Machine Procurement

Technical support was provided for the procurement of machinery for teams based in Nepal as well as those operating internationally. The technical team managed key challenges related to machine sourcing, importation, and logistics, allowing participating companies to focus on product development and business operations.

Machine Installation and Operation Training

Following procurement, the technical team supported machine installation, including guidance on infrastructure requirements and setup. This was complemented by hands-on operational training for the respective teams. Training sessions included machine testing and practical demonstrations using the teams' actual products to ensure effective knowledge transfer and operational readiness.

Safety

Safety was treated as a priority throughout the technical coaching process. Guidance was provided on the safe installation and operation of machines, appropriate use of personal protective equipment (PPE), and clear "dos and don'ts for machine handling. In addition to operational safety, product safety was also emphasised, with coaching focused on designing safer products for end users and target stakeholders.

Troubleshooting and Technical Optimisation

Targeted coaching sessions were used to address specific technical challenges faced by teams. This included troubleshooting machine malfunctions, optimising production parameters (e.g., temperature settings for polyfloss production and heat press operations), developing interlocking mechanisms for plastic tiles, and recommending overall product and process optimisations.

Field Support and Site Visits

The technical coaches also participated in field support activities and site visits to pilot locations, including Ree Gaun, Nagarjun, Langtang, and Khumbu. These visits enabled on-site evaluation of prototype installations, machine installations and assessment of local environmental and contextual challenges, ensuring that products and systems were suitable for real-world deployment.

Two enterprises did not progress beyond the incubation phase. Their reasons for discontinuation varied, including pivoting their business models, reassessing market feasibility, and facing operational or resource-related constraints that affected their ability to continue.

5.4 Pre-acceleration phase

Upon completion of the incubation phase, three enterprises who would benefit most from additional financing in the form of machines/equipment to grow their business, moved forward to the pre-acceleration phase. Pre and post-investment coaching was provided to ensure pre-seed funds and machines/equipment provided are appropriately used to achieve incubation milestones focusing on growth and incremental increase in sales and revenue and job creation, where applicable, within an environmental and social impact framework.

5.4.1 Post Investment Coaching

Post investment coaching is an integral part of such intervention programmes to help incubatees develop the roadmap for the financing received from the grant, financial institutions and investors, along with guidance for optimal use of the funds. If such support is not available there is the possibility of enterprises being unable to manage and/or mismanagement of funds and inability to pay the interest. In this programme, the investment provided to incubatees was primarily in the form of equipment rather than direct cash. Based on each incubatee's business idea and operational requirements, a tailored list of equipment was prepared, reviewed, and approved. The procurement was carried out by Impact Hub Kathmandu in line with its established procurement processes to ensure quality, cost-effectiveness, and transparency.

Post-investment coaching at this stage focused on practical, hands-on guidance, including appropriate use of the equipment, operational efficiency, routine maintenance, and safety measures required during machine operation. Additional coaching support was provided as needed, based on the specific context and capacity of each incubatee, to ensure that the equipment investment translated into sustainable business growth.

Beyond equipment-related support, post-investment coaching also addressed broader business development needs. Where incubatees were already implementing projects or identified new business opportunities, Impact Hub Kathmandu (IHK) team members provided guidance on how these initiatives could be advanced from a commercial and financial perspective. This included support on product development, pricing strategies, business processes, and sustainability planning. Coaching sessions further covered practical aspects of running a business, such as invoicing, banking transactions, basic financial management, and

financial literacy. Through this holistic approach, post-investment coaching enabled incubatees to strengthen both their operational and financial capacities, ensuring more resilient and viable enterprises.

5.5 Communication & Outreach

Understanding the power and importance of developing credible communication and outreach content with resources available in the enterprises, Cross Pollination was onboarded in the P2G Project to support the three incubatees. Different social media pages were created for the greater outreach of the project activities. The P2G website was also created for the extensive inclusiveness of the innovative idea and knowledge as well as activities sharing platform. two-to three-minute video pitch of each incubatee, their journey and their progress throughout was also covered and spread from all media platforms created for the project so far.

6.

Challenges & Learnings

Drawing on the experiences of the ideation, incubation, and pre-acceleration phases, this section reflects on the key challenges and learnings that emerged throughout the P2G programme, offering insights to inform and strengthen future business incubation efforts in the plastic upcycling sector.

As teams/enterprises moved from idea to business model development through the ideation, incubation and pre-acceleration phases, several gaps surfaced, pointing to the need for deeper learning and targeted support. Key areas requiring targeted support included refining plastic upcycling related value propositions, technical knowledge and machinery parts, raw materials sourcing, product development (design and prototyping) infrastructure challenges (workspace and utilities) assessing customer and market needs, and ensuring the presence of committed team members capable of carrying the business forward. Some of the key learnings of the P2G business incubation programme are as follows:

Impact-driven value proposition

Throughout the incubation period, the incubatees were encouraged to incorporate social, environmental, and economic impact into their business. This was a special addition in the programme to review the business from sustainability and resilience perspectives. These components of the programme were reflected in the individual business plans and learnings of the business, making the incubation period a holistic approach to instil sustainable mind-set amongst the plastic upcycling enterprises. We observed that the entrepreneurs were more confident about their impact beyond profits, which was also seen in their business pitches and in their commitment to their business roadmap.

Refined ideas and implementation

Reflecting the two MAKEathons (ideation phase) and the incubation phase, it became evident that for the five incubating teams/enterprises their original plans significantly altered and the feasibility of their initial ideas were tested. Throughout the incubation journey, they went through challenging but necessary steps, with some letting go of concepts and plans that were not

viable due to limited resources, namely financial, human, physical resources, geographic constraints, climate considerations, and evolving programmatic priorities. These experiences offered valuable learning for the incubatees and coaches, highlighting the importance of understanding real needs, assessing the true positioning of each business, and making informed, timely decisions about the way forward.

Finance fundamentals

Another major learning was the importance of strong business and financial foundations. Many teams had limited experience in costing, pricing and planning. Through the programme, they developed a clearer understanding of production costing, pricing strategy, cash flow management and revenue forecasting, amongst others. These fundamentals enhanced their investment readiness and strengthened their business pitch and plan.

Technical knowledge

The incubatees needed support to work through the complexity of working with plastic waste and associated machines/equipment. Having a dedicated technical team and a digital fabrication lab at Impact Hub Kathmandu was critical to provide this support. The process revealed the importance of understanding the behaviour of different plastic types, identifying reliable raw-material sources, machine maintenance for consistent product quality and ensuring safety measures when working with heat and emissions. These learnings during the masterclasses and in the one-on-one sessions helped enterprises design safer, efficient, and consistent production processes. Likewise, hands-on experience, prototyping sessions, machine-handling practice, field visits, and real testing helped bridge the gap between theory and application. Unlike virgin plastics, the quality of products made from recycled

plastics will vary, even when the plastic type is the same. Factors such as the original brand, colour, previous contents, storage and usage conditions all influence the material's performance. These variations affect properties like mouldability and flow characteristics, which in turn impact quality control.

Team composition

The incubation journey emphasised the need for committed teams being essential for business development and growth. Those with clearly defined roles and teamwork managed challenges and opportunities more effectively. The incubatees learned to define roles and responsibilities clearly, communicate transparently, and address skill gaps proactively, fostering a culture of problem-solving, adaptability, and accountability to the enterprise. This focus on team cohesion and capacity building emerged as a critical factor in ensuring the long-term sustainability of their businesses.

Leveraging the ecosystem

Exposure to technical experts from local, regional, and global contexts, suppliers and peers helped the incubatees understand the broader plastic waste and the upcycling ecosystem from a systems perspective. This highlighted the value of partnerships, collaboration, and community engagement, especially in sectors like waste management, where networks influence access to materials, markets, and support.

Timeline

The ideation, incubation and pre-acceleration phases were deliberately designed to run for a period of one to two years to allow the incubating teams/enterprises to immerse fully in the programme and receive the best out of the knowledge and resources provided. Anything shorter would be compromise the quality of

the programme and the impact on the entrepreneurs. Generally the incubation period runs over a year but this programme was created to provide an overall exposure to ideation, incubation and acceleration phases to the participants.

Peer-to-peer learning

Peer learning and collaborative reflection was actively facilitated during the programme cycle through participants sharing potential solutions and receiving feedback from facilitators and fellow entrepreneurs during the masterclasses and beyond.

