MINISTRY OF FOREIGN AFFAIRS
OF DENMARK

IRENA
International Renewable Energy Agency

# WEco

## Women-Centric Toolkit for Small-Scale Hydropower

PLACE-SPECIFIC • CO-CREATED • VISUAL-BASED LEARNING

- NEED
- BUILD
- SUSTAIN

## Guide for Facilitators

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# Introduction

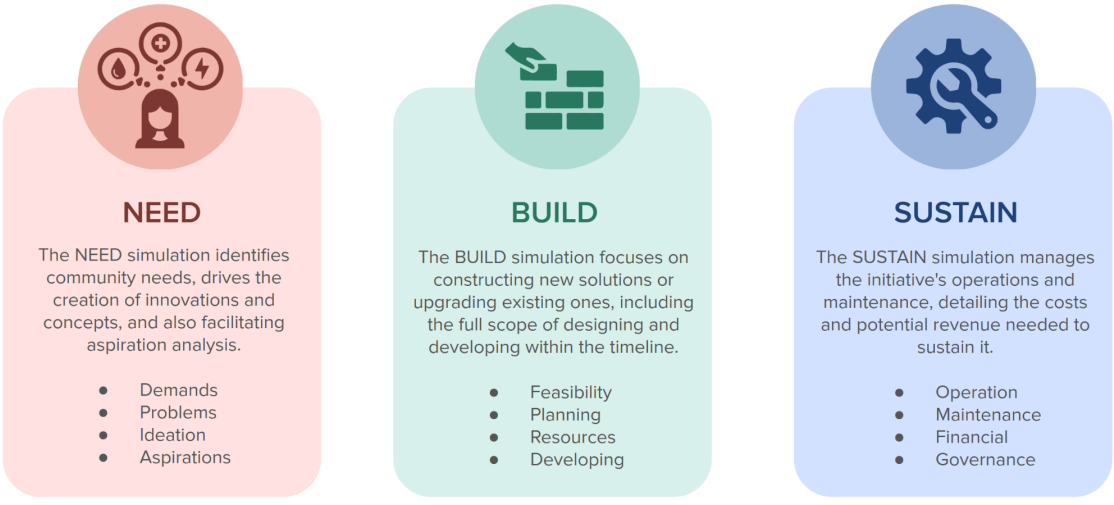
**WEco** (Women + Ecology + Economy) is an innovative capacity-building toolkit specifically designed to empower the socio-economic transformation of indigenous women in small-scale hydropower initiatives. Case studies consistently demonstrate the mutual benefits of women's empowerment and high-impact Decentralized Renewable Energy (DRE), highlighting the significant opportunities for women to drive transformative outcomes when supported in leadership roles.

In recognition of this, WEco was co-created through a collaborative process involving field-based practitioner organizations - Yamog and their local partners, including women's and indigenous groups in Sitio Lubas, Philippines to ensure the toolkit is deeply relevant and community-driven. WEco serves as a catalyst, enabling women to actively participate across the entire community-scale Micro-Hydropower (MHP) value chain, from implementation and productive end-use to critical watershed conservation, thereby maximizing their potential for socio-economic advancement.

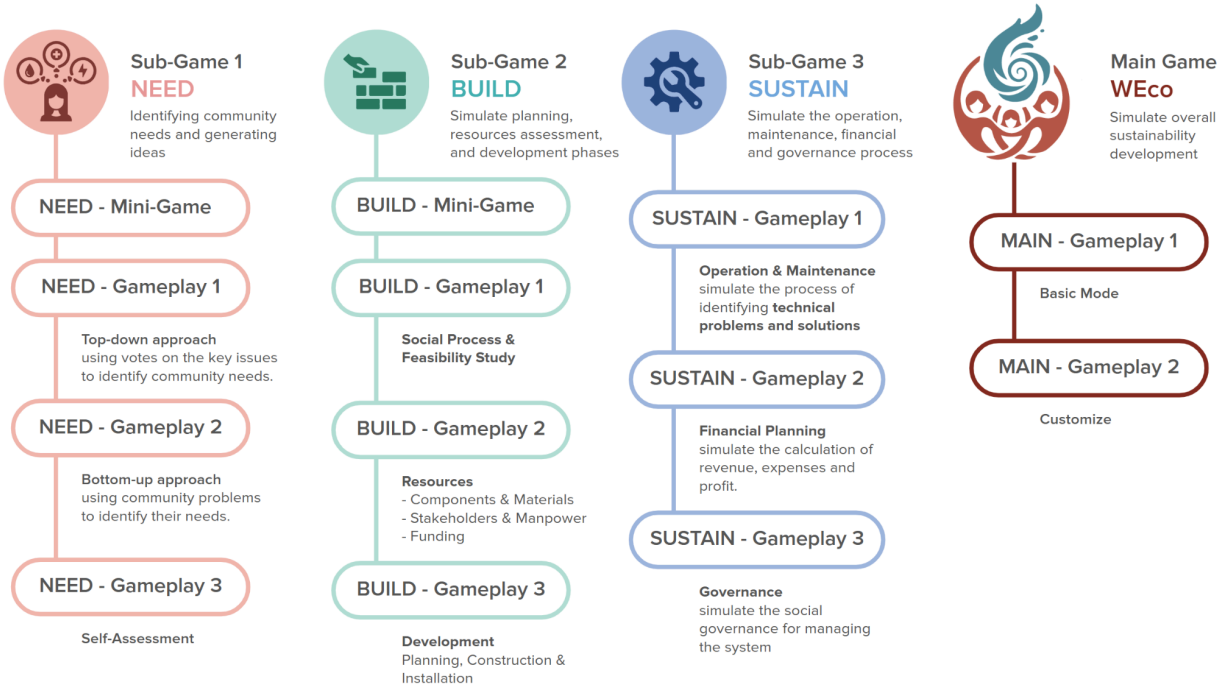
The **WEco** experience is built upon a core structure: one main game, simply named **WEco**, and three essential sub-games: **NEED, BUILD,** and **SUSTAIN**. What makes this toolkit so effective are its integrated learning approaches, combining **self-reflection**, inspiring **role-modeling**, hands-on **simulations**, and dynamic **peer-to-peer exchange**. All these elements are carefully engineered with **progressive learning mechanics**. The journey starts with basic understanding and gradually introduces more complex challenges, concepts, and information. This allows learners to build intuition and mastery over time, fostering a holistic grasp of project dynamics from both broad strategic perspectives and detailed operational insights, achievable through seamless transitions between the main game and its sub-components.

The **Sub-Games** offer a unique, visual, and interactive approach to understanding community dynamics.

- **NEED** focuses on identifying core community needs, driving innovation, concept creation, and facilitating aspiration analysis.
- **BUILD** simulates the construction of new solutions or the upgrading of existing ones, covering the full scope of design and development within a timeline.
- **SUSTAIN** delves into the crucial elements of long-term project success: Operations, Maintenance, Financial Planning, and Governance.



The main game, **WEco**, ties all these elements together in an immersive board game. It centers on how an indigenous community, led by women and powered by renewable energy, drives its own sustainable development even in the face of an unpredictable climate. This journey is a testament to the vital role and leadership of indigenous women as they seamlessly blend modern progress with traditional wisdom, exploring the complex interplay between human behavior, gender dynamics, and ecological and economic systems.




Beyond its current structure, WEco is built with an iterative mechanism, allowing for continuous adaptation. Players can actively contribute new content, modify gameplay, and customize the tool to be distinctly place-specific. This ensures the co-creation process will perpetually evolve, driven by new communities joining a collective effort. Together, they will further empower the socio-economic transformation of indigenous women within various sustainable development and Decentralized Renewable Energy initiatives.

# Essential Materials

The complete **WEco** capacity-building tool package comprises five core components, all readily available on the IRENA website for download. These materials are designed to provide a comprehensive and immersive learning experience:

1. **Introduction Video:** This engaging video offers a concise overview of WEco's purpose and guides you through the overall gameplay, setting the stage for your simulation journey.

2. **Role-Modeling Videos:** Witness the real-world impact of women's leadership through inspiring videos. These features showcase the agency of indigenous women in the implementation, productive end-use, and watershed conservation value chain of MHP initiatives, drawing directly from experiences in Lubas, Philippines.

3. **Printable Game Material Files:** All necessary game boards and cards are provided in downloadable PDF format on the IRENA website. For detailed file names, dimensions and quantities, please refer to the "Materials" section specific to each game within this guide.

4. **Guide for Facilitators:** This comprehensive guide includes detailed instructions, strategic questions for participants, insightful facilitator's notes, and practical examples to ensure an effective and impactful simulation session.

**Alternative Option: Adapting WEco Without Printing:**

While the printable game materials enhance the visual learning experience, the true strength of the WEco tool lies in its underlying game concepts and activities. Should printing services be unavailable, the entire simulation can be effectively conducted using readily accessible local resources.

- **Hand-Drawn Materials:** All game boards and card contents, including their designs and dimensions, are detailed within this guide. These can be easily **hand-drawn or written on paper**, allowing for full customization to your place-specific context.
- **Local Substitutions:** To further boost local relevance and accessibility, various game tokens can be creatively replaced with locally available materials such as **seeds, bottle caps, marbles, or coins.**

This adaptability ensures that WEco remains a powerful and inclusive capacity-building tool, regardless of access to printing facilities.

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# NEED

# Sub-Game 1: NEED

NEED is a self-reflection tool designed to help communities, particularly women, identify their most pressing needs and envision solutions. The activities draw directly from the best practices of Yamog, empowering participants to move from passive problem identification to active change agency. This tool is not just about finding answers; it's about building the confidence and collective action needed for successful rural development.

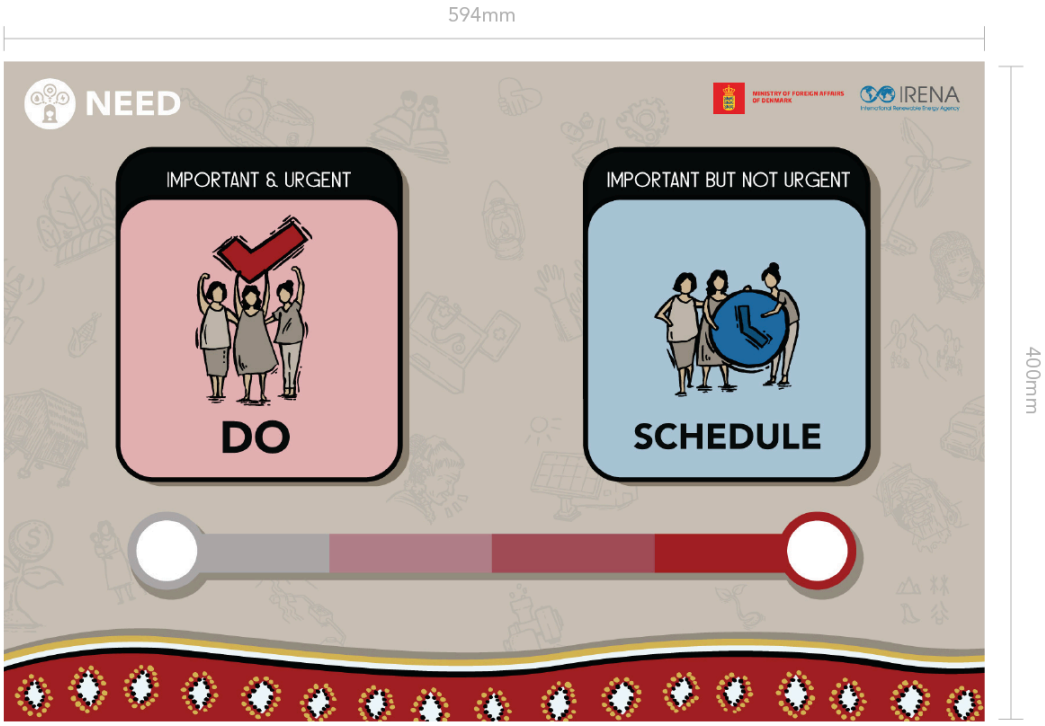
This tool also included a self-assessment process conducted by Yamog with the indigenous women of Lubas and Timodos. The methodology is rooted in the rich tradition of oral history and collective storytelling, which serves as a powerful tool for preserving experiences, reflecting on challenges, and articulating shared aspirations for experienced participants.

**Key Learning Outcomes**

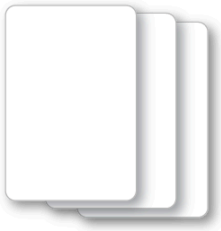
- Identify diverse community needs through effective assessment methods.
- Generate innovative solutions and concepts in response to identified community needs.
- Building confidence and collective action needed for a successful initiative.

**Materials:** NEED Game Board, "Need" cards x 12, "Ideas" cards x 93, blank cards, pen, tokens, Tent Cards, pens and Guide for Facilitators.

**Folder Location:** WEco_Toolkit_ver1 > 1_NEED

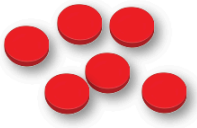



**NEED Game Board** (594mm x 400mm)



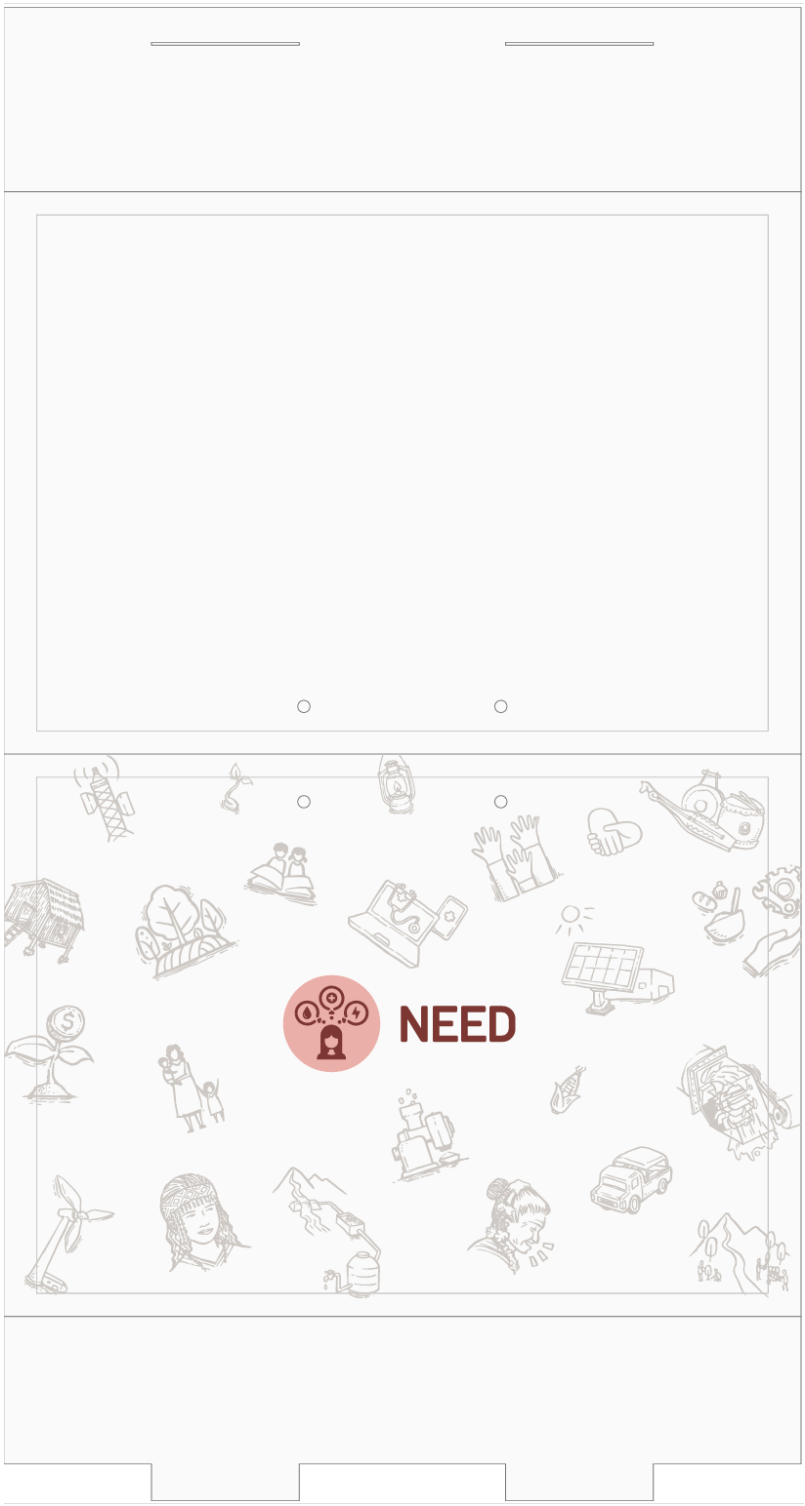
**Blank Cards**
(55mm x 85mm)

**Tent Card**



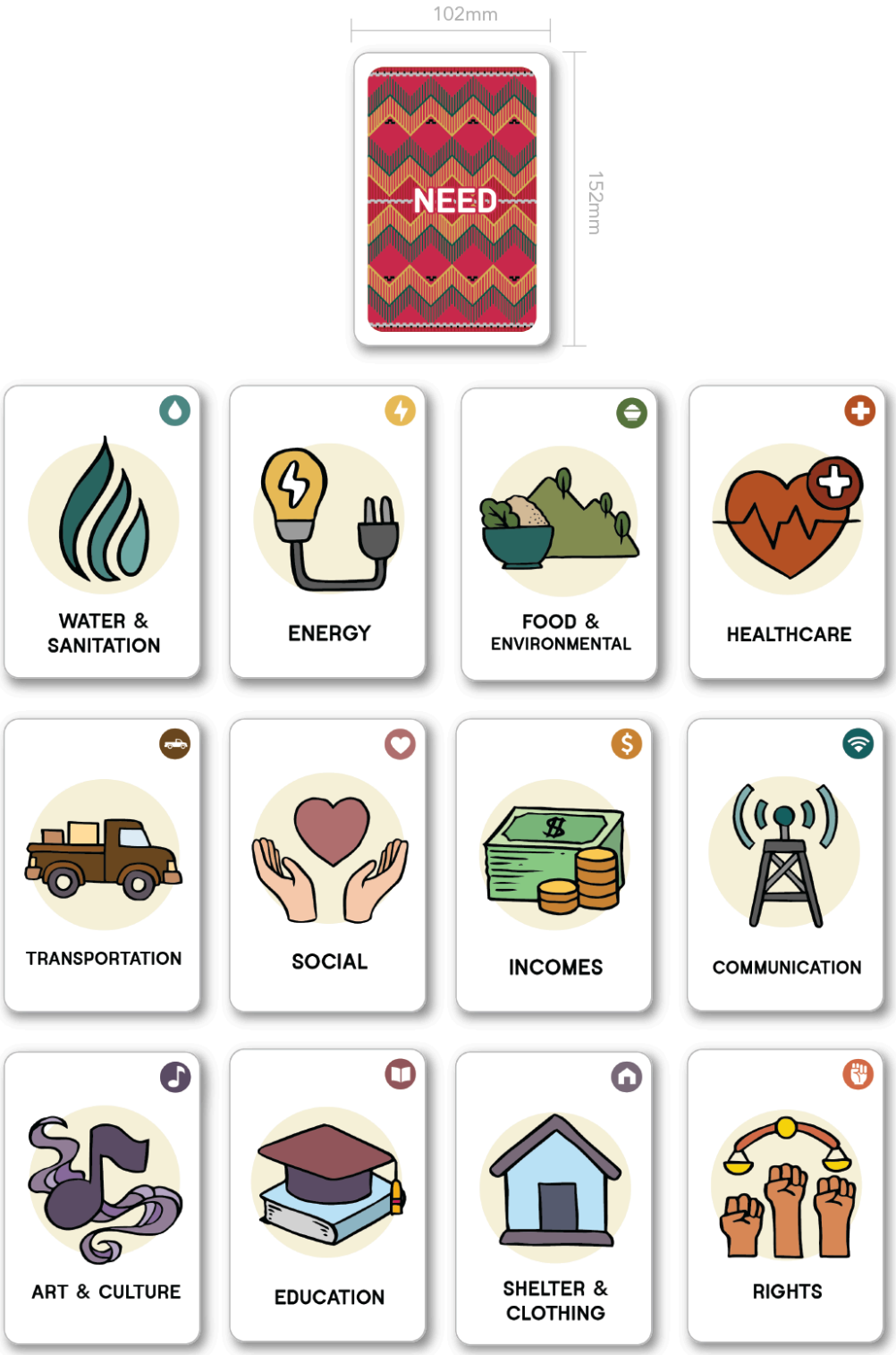
**Tokens**

File Name: NEED_Board_594x400mm.pdf




File Name: NEED_Tent_Card_Stand_330mmx610mm.pdf

Print the content onto **A4 size paper**. To assemble, punch holes in the cards, then secure them to the tent card stand using either **rings or string**.



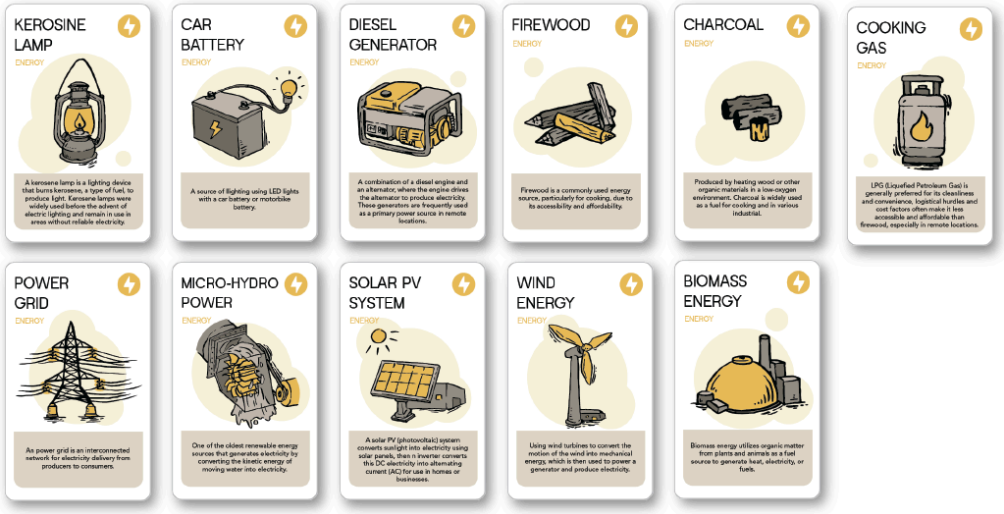

**"Need" Cards x 12** (102mm x 152mm)

File Name: NEED_Card_4R_102x152mm.pdf

## **"Idea" Cards x 93** (55mm x 85mm)

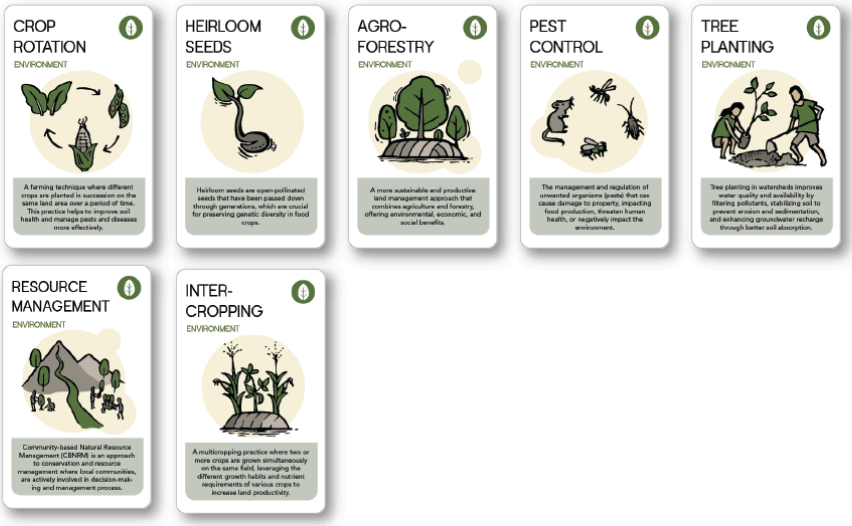
### "Idea" Cards For WATER

### "Idea" Cards For ENERGY



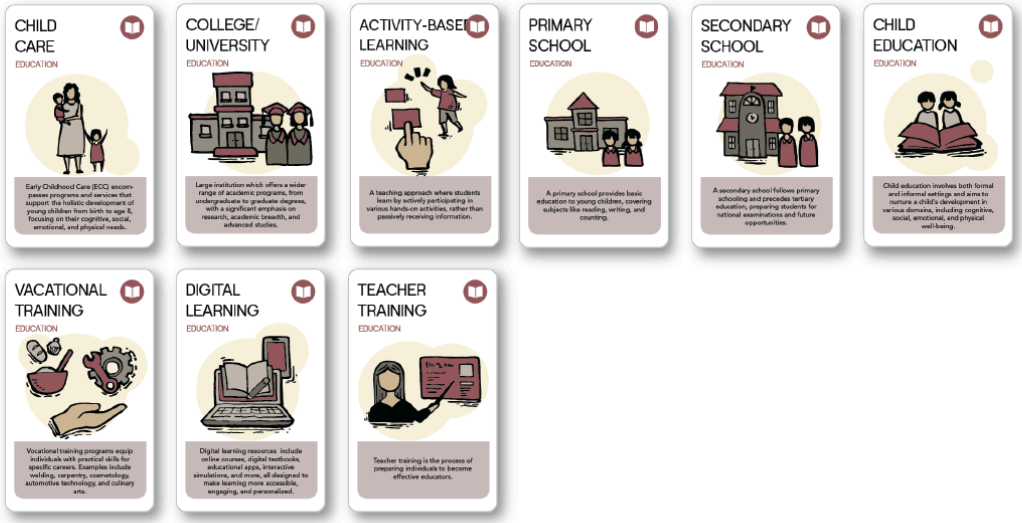

File Name: NEED_Card_85x55mm.pdf

## "Idea" Cards For FOOD & ENVIRONMENTAL




## "Idea" Cards For HEALTHCARE

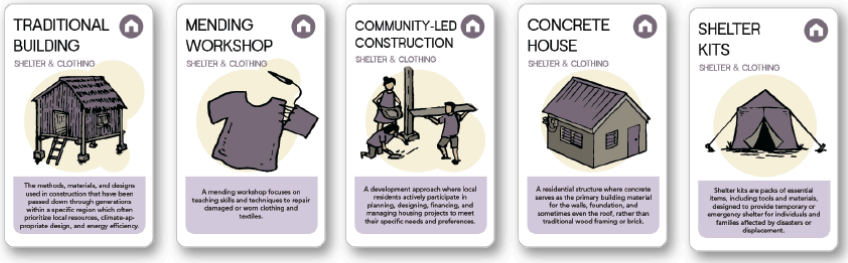
## "Idea" Cards For EDUCATION



## "Idea" Cards For INCOME

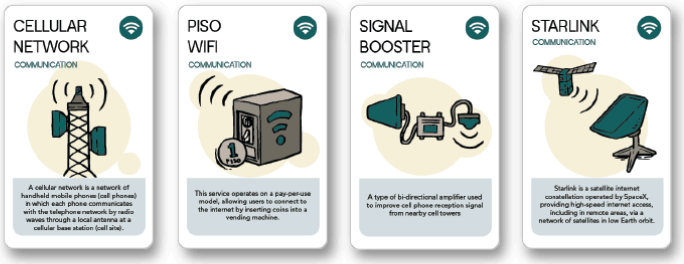
## "Idea" Cards For ART & CULTURE

## "Idea" Cards For SHELTER & CLOTHING




## "Idea" Cards For SHELTER & CLOTHING

## "Idea" Cards For COMMUNICATION




## "Idea" Cards For RIGHTS

## "Idea" Cards For RIGHTS

File Name: NEED_Card_85x55mm.pdf

# Introductory Exercise (Needs Tower Challenge)

1. A facilitator is recommended to run a mini-game especially for new participants. This mini-game is a simple, fun, and effective way to get participants engaged before starting the main simulation. It serves as an indirect introduction to the core themes of community needs and prioritization, using the same "Needs" cards they will encounter later.
2. Place all the "Needs" cards face up on a table.
3. Explain the goal of the game: "We're going to build a 'tower of needs.' Your task is to take turns selecting a card that you believe represents a fundamental community need and carefully stack it on the tower."

4. The game ends when all cards have been selected and stacked, or when the tower falls.
5. By playing this simple game, a facilitator can help participants get comfortable with the materials and each other, preparing them for a deeper, more meaningful discussion about community needs.

**Facilitator's Notes:**

- Encourage a playful atmosphere. This isn't about getting the "right" answer. The goal is simply to get everyone interacting with the cards and with each other.
- During or after the game, you can subtly introduce the idea that prioritizing needs is a key part of community development. Mention that the next simulation will explore this process more formally.
- Pay attention to how the participants interact. Who is a risk-taker (placing a card on a wobbly tower)? Who is more cautious? Who offers help to others? This can provide valuable insights into their personalities and how they might engage in the main simulation.
- If the tower falls, you can use it as a metaphor for what happens when a community's needs aren't addressed in a balanced way. For example, "It looks like our needs tower wasn't very stable. Just like a real community, if we don't address our most important needs in a careful way, things can fall apart." This sets the stage for the next activity.

# Gameplay 1: Top-Down Approach (Community-Level Needs)

**Objective:** To quickly identify and prioritize the community's most critical needs through a structured, open voting process.

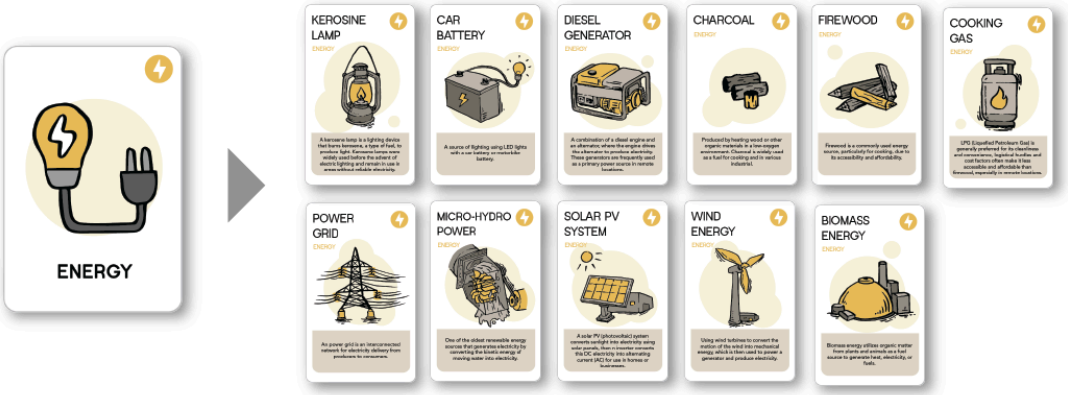
**Materials:** "Needs" cards, "Idea" cards, blank cards, pen, and two tokens per participant.

**Instructions:**

1. Lay all the "Needs" cards on the table for everyone to see.
2. Give each participant two tokens. They will place one token on their most important necessity and a second token on their second most important. This open voting allows all voices to be heard, without the influence of dominant personalities.

3. Explain that if their need isn't represented, they can write it on a blank card and add it to the table.

4. Once votes are cast, tally the results. The necessity with the most votes is the top priority.
5. Lead an open discussion about the choices. Ask participants: "Why did you vote for this need? What's the current situation and what difficulties does it cause?" Observe who is outspoken, proactive, or shy, as this information will be useful during the planning and development phase.




6. Place the selected necessity card at the center of the game board.
7. Take out the related "Idea" cards and place them around the necessity. Discuss the feasibility of each idea.
8. Create new idea cards if needed.

9. Each participant can choose their preferred ideas and write down their potential next steps or more detailed aspirations regarding those ideas on a card.
10. Everyone will reveal their cards and discuss potential actions to achieve the idea.

**Facilitator's Notes:**

- This method is a great starting point for communities with little experience in formal consultation. It provides a quick, democratic way to gauge a community's priorities. The research from Lubas showed that the women were "the most insistent" on prioritizing energy poverty, demonstrating that even a simple vote can reveal a powerful consensus.
- This process validates every participant's opinion from the start, which is a crucial first step in building a sense of agency, especially for women who may be unaccustomed to having their voices heard in public forums.

- Use tent cards to document and present **local or regional case studies**. Keep these visible during discussions—they serve as excellent, accessible reference points to connect the simulation to real life.

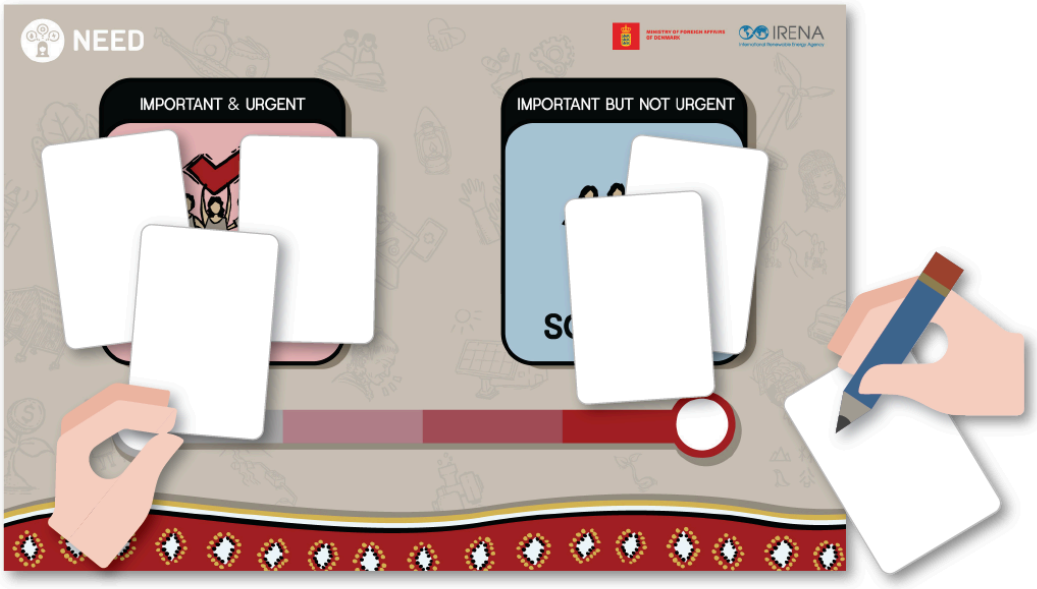
# Gameplay 2: Bottom-Up Approach (Problem-Based Solutions)

**Objective:** To empower individuals to anonymously describe their problems, which are then used to identify core community needs and develop a roadmap for change.

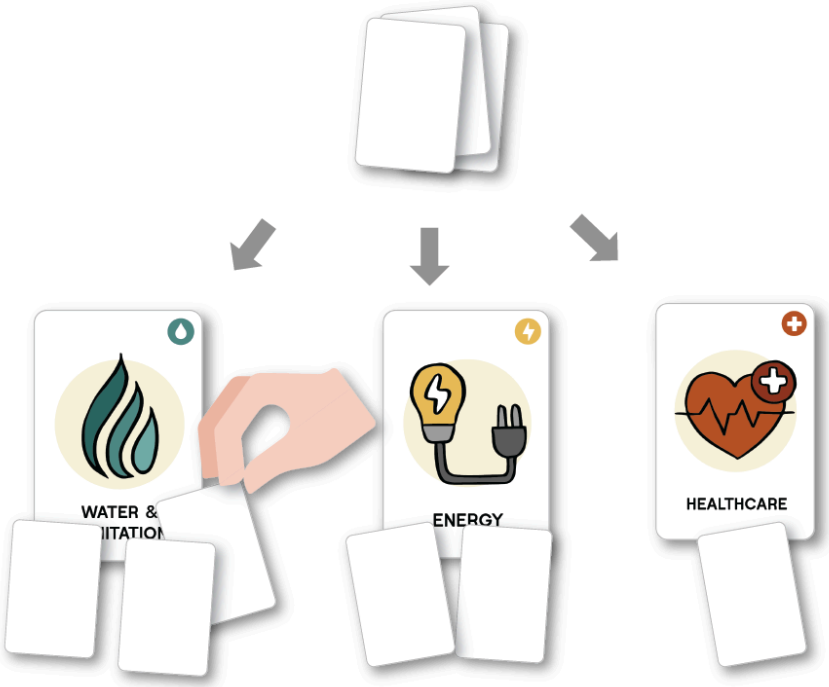
**Materials:** "Needs" cards, "Idea" cards, blank cards, pen, and NEED game board.

**Instructions:**

1. Give each participant blank cards and instruct them to write down the problems they face. This anonymous approach makes them more comfortable describing their issues.
2. Ask them to place the cards face down on the game board, categorizing them into "Important & Urgent" or "Important But Not Urgent." This reduces the influence of dominant voices.



3. Shuffle and read aloud the "Important & Urgent" cards first, followed by the "Important But Not Urgent" cards. As a group, categorize the problems to identify the core needs.




4. Place the identified necessity at the center of the board.
5. Take out the related "Idea" cards and place them around the necessity. Discuss the feasibility of each idea.
6. Create new idea cards if needed.

7. Participants place an "Idea" card that represents their current situation on the left side of the spectrum.
8. They then select an "Idea" card that represents their aspiration and place it on the right side of the spectrum.
9. Place the remaining cards along the spectrum, representing the journey from their current state to their aspiration.

10. Discuss the actions needed to achieve their aspiration.

**Facilitator's Notes:**

- This method complements the top-down approach by revealing the underlying struggles that shape a community's needs. The research from Lubas highlighted problems like poor roads, lack of safe drinking water, and kerosene lamp fires. This activity allows participants to directly address those kinds of real-world issues.
- This approach encourages "self-reflection and collective action" of the participants. By moving from problems to solutions, they realize their capacity to "do something instead of merely waiting for largesse."

- Use tent cards to document and present **local or regional case studies**. Keep these visible during discussions—they serve as excellent, accessible reference points to connect the simulation to real life.

# Gameplay 3: Community Self-Assessment

The process is built on the understanding that for many indigenous communities, oral history is the primary way of preserving knowledge and cultural memory. The facilitator's role is not to simply extract information but to create a safe space for this tradition to flourish. The sessions are designed to be highly participatory, ensuring that all voices are heard. The use of small groups followed by a larger plenary encourages free and relaxed discussion, building confidence before sharing with the wider group.

Conducting the sessions in the local dialect (e.g., Cebuano) is essential. It removes language barriers and fosters a sense of comfort and authenticity, allowing participants to express themselves fully in their native tongue. The core of the methodology is a structured story-telling model. This approach helps participants trace their collective journey, from past challenges to present successes and future aspirations, creating a comprehensive narrative of their experience. The **CIPOO model** (**Context, Input, Process, Outcome, Outlook**) provides a clear, yet flexible, guide for this narrative.

## Session 1: Collective Story-Telling and Reflection

**Goal:** To reconstruct the community's journey and experiences, focusing on the role of women, by using a structured story-telling approach.

**Materials:**

- Large sheets of paper or a whiteboard for each small group.
- Markers in various colors.
- Pens and notebooks for notetaking.
- A quiet, comfortable space where participants can sit in small circles.

**Part 1: Setting the Stage (10-15 minutes)**

1. **Welcome and Introduction:** Begin with a warm welcome. Acknowledge and honor the community's oral traditions. Briefly explain the purpose of the session: to collectively reflect on their shared experiences and tell their story in their own words.
2. **Forming Small Groups:** Divide the participants into three small groups. This creates an intimate, relaxed atmosphere, making it easier for people to share openly without feeling intimidated.

**Part 2: Group Story Reconstruction (45-60 minutes)**

1. **Assigning Guiding Questions:** Assign a specific guiding question to each group, based on the **CIPOO framework**. This ensures each part of the story is addressed.
    - **Group 1 (Context):** "What was our situation, especially for us women, before the MHP (micro-hydropower) project was created?" This question helps set the scene and recall the initial challenges.
    - **Group 2 (Input & Process):** "What has been the participation of women in decision-making and problem-solving amidst the socio-economic challenges we've collectively experienced?" This focuses on their actions and roles.
    - **Group 3 (Outcome & Outlook):** "What changes have you noticed regarding the role of women in the community since the MHP project, and what are the contributing factors to these changes? What do you foresee will be our role in the coming years?" This prompts them to reflect on the results and future possibilities.
2. **Facilitating Group Discussion:** Guide each group to discuss their assigned question. Encourage them to share personal anecdotes and collective memories. The facilitator's role here is to listen, ask clarifying questions, and help the group stay focused on their part of the story. Encourage them to capture key points on their large sheet of paper.

**Part 3: Plenary Sharing and Consolidation (60-90 minutes)**

1. **Group Presentations:** Invite each group to present their story to everyone else. Encourage them to tell the story in their own way, using the notes they've created as a guide.
2. **Wider Sharing and Reflection:** After each group presents, open the floor for wider discussion. This is a crucial step for **corroboration and collective ownership**. Ask questions like:
    - "Does anyone have anything to add to what Group 1 shared about the situation before the project?"
    - "Can anyone provide another example of women's participation from what Group 2 presented?"
    - "Are there other changes or future ideas you've noticed that Group 3 didn't mention?"
3. **Consolidating the Narrative:** As the discussion unfolds, help the group collectively agree on a single, shared story. This is the moment when the individual stories become

a collective narrative. The facilitator can summarize key themes and ensure everyone feels their contributions are included.

## Session 2: Deepening Reflection and Analysis

**Goal:** To build on the stories from the first session and collectively assess progress, inner convictions, and future challenges. This session is done in a plenary setting.

**Part 1: Review and Recapitulation (15-20 minutes)**

1. **Recap the Story:** Start by briefly summarizing the collective story from the first session. This helps everyone reconnect with the shared narrative.
2. **Introducing the Framework for Analysis:** Introduce the four key dimensions used for analysis:
    - **Community Processes:** How the community makes decisions and includes women.
    - **Community Social Structures:** The institutions and associations that shape community life.
    - **Community Asset Base:** The physical, financial, and human capital of the community.
    - **Community Natural Capital:** The management of their environment and natural resources.

**Part 2: Collective Analysis and Deeper Reflection (60-90 minutes)**

1. **Applying the Framework:** Use the four dimensions as a lens to analyze the story that was told. Ask guiding questions to stimulate discussion on each dimension:
    - **Community Processes:** "How have our norms and practices for women's participation changed over time, from when we first started to now?"
    - **Community Social Structures:** "How have the new organizations we've formed (like KATAWA) influenced the traditional structures like the tribal council or local government? How does this feel?"
    - **Community Asset Base:** "Looking back at the MHP project, how have we developed our own skills, social connections, and financial capabilities? How has this given us more power?"

- **Community Natural Capital:** "What is our role now in protecting our river and watershed? What have we learned about ourselves and our environment through this process?"

2. **Exploring Inner Convictions:** The discussion should also touch on the participants' inner journey. Ask questions like:
    - "What do you believe has been the most significant change within you as a woman since the project began?"
    - "Knowing what we've accomplished, what challenges are you still anticipating, and what gives you the confidence to face them?"
3. **Synthesizing Key Learnings:** Conclude by summarizing the key insights that emerged. Highlight the women's journey from being marginalized to becoming central players in community development. Emphasize that their active participation has not only led to a successful project but has also transformed gender relations, empowered them to take control of resources, and earned them respect.

**Facilitator's Notes**

- The participants are the experts on their own lives and experiences. A facilitator is there to facilitate a process, not to provide answers.
- The power of this methodology lies in the collective story-telling itself. Trust that the truth and the key insights will emerge from the participants' own narratives.
- Regularly affirm the value of their stories and the strength of their contributions. Use phrases like, "Thank you for sharing that powerful story," or "That is a really important insight."
- During the sessions, take careful notes to accurately capture the participants' own words and ideas. This documentation is crucial for synthesizing the final report and ensuring the community's voice is preserved.

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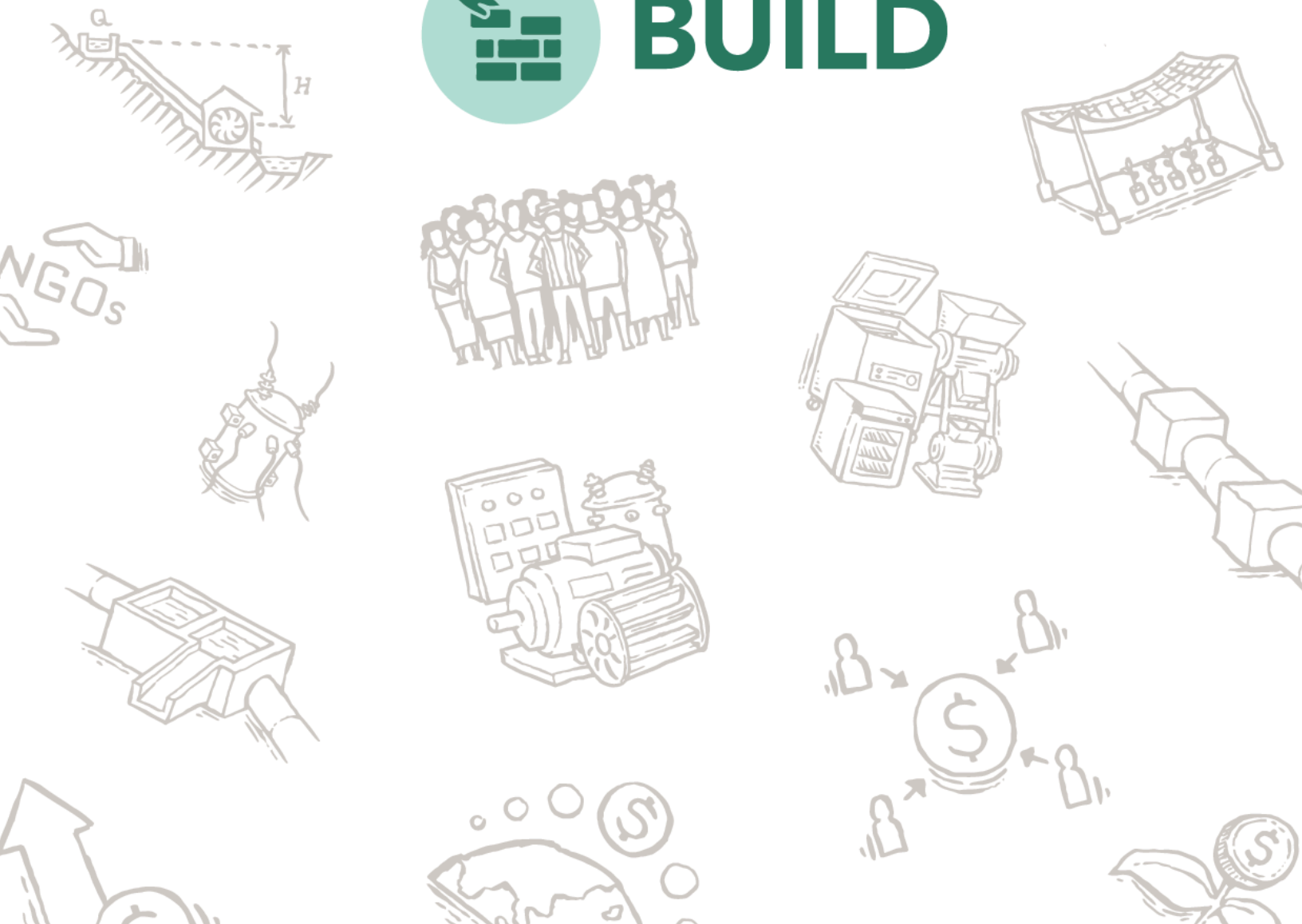
# BUILD



# Sub-Game 2: BUILD

## MHP Planning & Development Simulation

Involving women in the planning and development of a MHP project kickstarts social change, boosting their awareness, confidence, and self-expression. By actively contributing and learning new skills throughout this process, they build a foundation for even greater changes later on, during the operation, maintenance and utilization stages.

This game models the MHP planning and development process using the real-life experiences of the women in the Lubas community. It's a safe space to test strategies, identify potential problems, and make informed decisions without real-world risk. By immersing themselves in this process, participants can experience the transformative social changes that lead to real-life empowerment. By combining the feasibility study with social processes and maintaining transparency about resources and community involvement during the construction phase, this project prioritizes community engagement, trust, and effective communication from its inception.

This guide provides a step-by-step walkthrough for facilitating the MHP Planning & Development Simulation. The goal is to help participants understand the vital connection between technical planning and community engagement, drawing from the real-world experiences of the Lubas women.

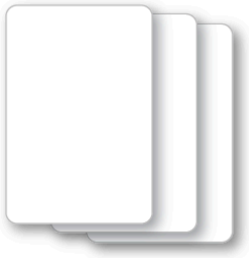
**Key Learning Outcomes**

- Apply best practices for feasibility study, constructing and developing micro-hydro or other solutions efficiently.
- Understand the steps, components and resources required to design and develop a micro-hydro system or other solutions.
- Manage the full scope of design and development of micro-hydro or other solutions within a given timeline.

**Materials:** BUILD Game Board, "Social Process", "Feasibility Study", “Components & Materials”, “Stakeholders & Manpower”, “Fundings”, and “Development” card sets, blank cards, tent cards and pen.

**Folder Location:** WEco_Toolkit_ver1 > 2_BUILD

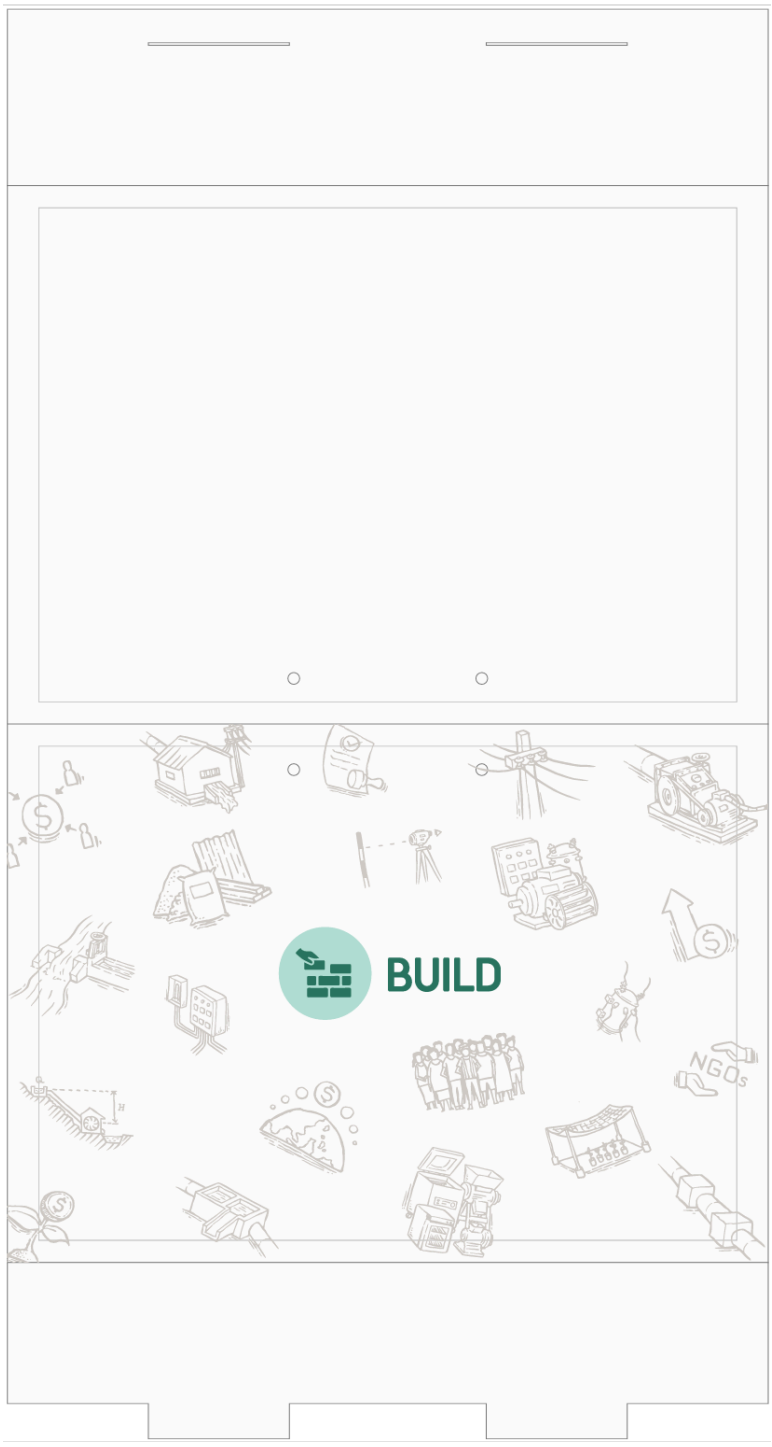
**BUILD Game Board** 594mm x 400mm



**Blank Cards**
(55mm x 85mm)

**Tent Card**

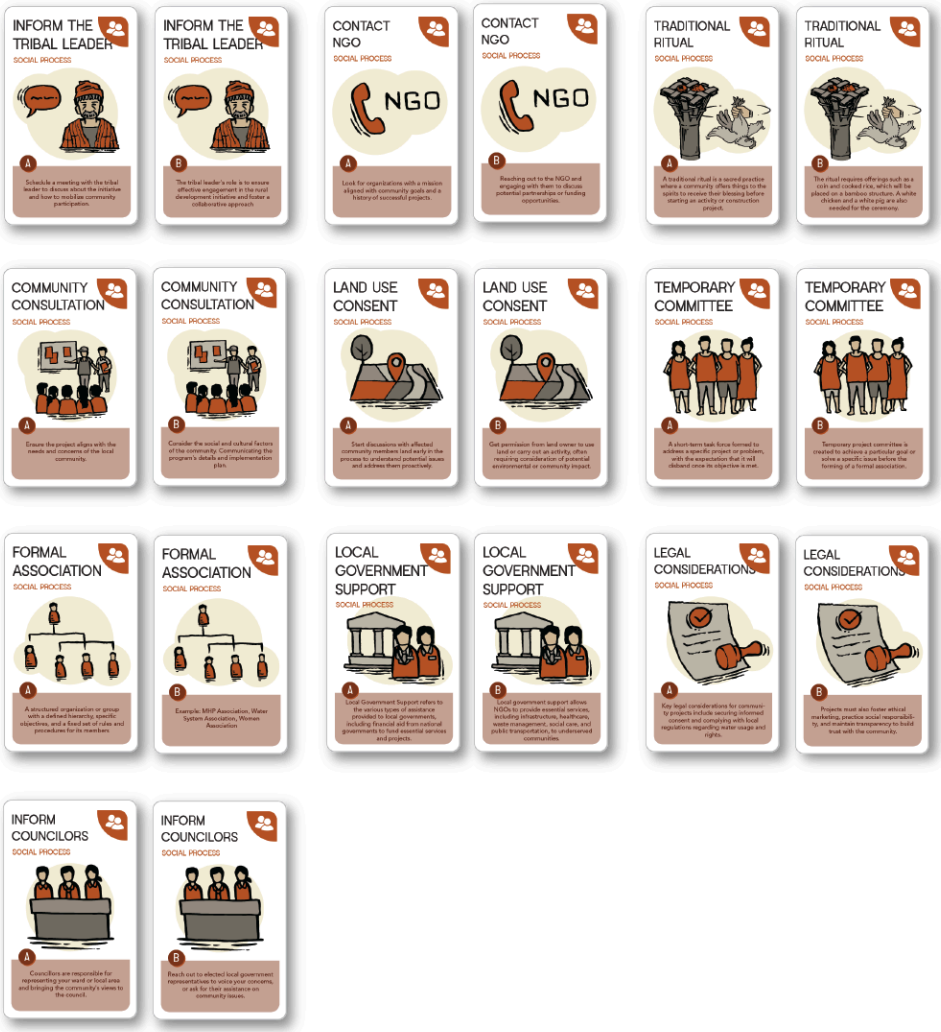
File Name: BUILD_Board_594x400mm.pdf




File Name: BUILD_Tent_Card_Stand_330mmx610mm.pdf

Print the content onto **A4 size paper**. To assemble, punch holes in the cards, then secure them to the tent card stand using either **rings or string**.

## "Social Process" Cards x 20 (55mm x 85mm)




File Name: BUILD_Card_85x55mm.pdf

## "Feasibility Study" Cards x 14 (55mm x 85mm)

File Name: BUILD_Card_85x55mm.pdf

## "Resources Assessment" Cards x 34 (55mm x 85mm)

### "Components & Materials" Cards x 10

### "Stakeholders & Human Resources" Cards x 10

"Fundings" Cards x 14

File Name: BUILD_Card_85x55mm.pdf

## "Development" Cards x 26 (55mm x 85mm)

File Name: BUILD_Card_85x55mm.pdf

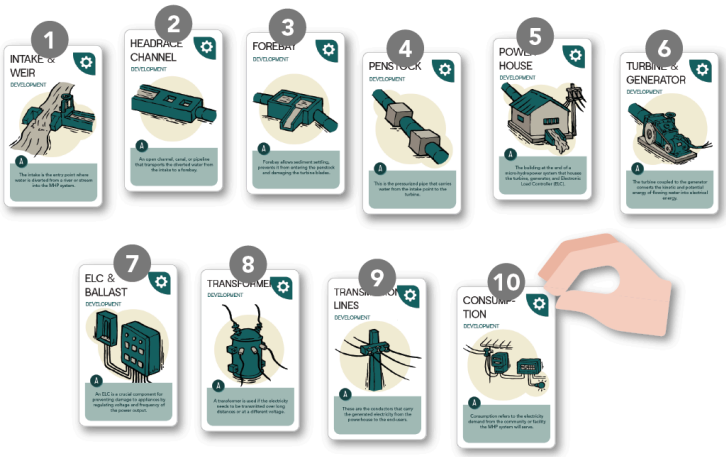
# Introductory Exercise

1. Place each set of cards face-down on the game board in its designated category.
2. To start, especially for new participants, a facilitator is recommended to use cards from each gameplay to run a series of mini-games. This serves as an icebreaker and helps participants become familiar with the game's components. These engaging, low-stakes activities build confidence and prepare everyone for the main simulation.

3. **Memory Mini Game**: Take the set of cards from one of the gameplay shuffles and laid face-down on a grid. Each card has a matching pair. The participants take turns to flip over two cards at a time, trying to find a matching pair. If the cards match, the participant takes them from the board; if not, they are flipped back over, and the next participant will repeat the process until all cards are taken. The participant with the most cards wins. Afterward, each participant takes turns to read out their cards before placing them face up on the table.

4. **Puzzle Mini Game**: Participants are divided into two teams. Each team receives a set of identical cards from one of the gameplays and a reference sequence to follow. The first team to correctly arrange their cards wins.

**Example sequence using MHP development cards.**



# Gameplay 1: Social Process & Feasibility Study

The goal is to help participants understand the vital connection between technical planning and community engagement, while focusing on women's evolving roles.

## Phase 1: The Foundation - Social Process & Feasibility Study

**Objective:** To demonstrate the critical and interconnected nature of social processes and feasibility studies in MHP project planning, highlighting the "evolutionary" journey of women's involvement.

**Materials:** "Social Process" and "Feasibility Study" card sets, and blank cards.

**Instructions:**

1. Place the **"Social Process"** and **"Feasibility Study"** card set face-up on the table, organized by category. Note that each card has an identical pair with a slightly different description.
2. Have participants gather around the table.

**Facilitator's Notes:**

- Explain that a successful MHP project isn't just about technical calculations. The **feasibility study** handles the technical viability, but the **social process** ensures the community is not just a recipient of a project but an active, driving force. The research shows that women's participation is a journey, starting with a powerful voice in problem identification.

- Remind them of the finding that the Lubas women were the most insistent on prioritizing energy poverty, even without technical knowledge. This demonstrates the power of the **social process** to shape the project's direction from the very beginning. Lilia Tinambon's decision to donate her family's land for the project after careful consultation is a tangible example of how a well-executed social process can enable critical project steps.

- **Discussion Prompt:** Ask the participants, "Before you start any technical study, why is it vital to identify the community's most pressing problems? How can involving all community members, especially women, help you find the right solution?"

## Phase 2: Sequencing the Process

**Objective:** To have participants create a logical sequence for planning, encouraging reflection and discussion on the progression of women's roles.

**Instructions:**

1. **For New Participants:**
    - Instruct them to look at the example sequences on the guide for facilitators.
    - Ask them to collaboratively decide on the most logical order for carrying out both the social process and feasibility study.

    - Encourage discussion about *why* they place each card where they do, paying attention to how community buy-in and data gathering must happen in parallel.

2. **For Experienced Participants:**
    - Have them use one set of cards to arrange a sequence based on a past MHP project they worked on.
    - Then, using the second set of cards, ask them to create a new, "ideal" sequence that reflects what they learned and how they would improve the process.
    - After they finish, ask them to compare both sequences and discuss the differences.

**Facilitator's Notes:**

- The research on Lubas MHP project revealed that women's empowerment is an "evolutionary" process, built on self-reflection and collective action. This project shows that women's involvement progressed from simply agreeing to the project (social acceptability) to a more proactive role in its conceptualization and design. For new groups, this activity helps them understand this progression. For experienced groups, the comparison of a past project to an improved one embodies this self-reflection, a key driver of empowerment.
- **Discussion Prompt:** Ask the experienced participants, "What were the key challenges in your first project that you addressed in your 'improved' sequence? Did the social process need to be given more time or more importance?" For the new participants, "Why is it important to have a group consensus on this sequence, and what could be the consequences of rushing through it?"

**Example sequence of Lubas community based on their MHP project.**

## Phase 3: Documentation and Reflection

**Objective:** To capture key insights and new ideas for future reference, contributing to the co-creation of a capacity-building tool.

**Instructions:**

1. Encourage participants to use the provided blank cards or the blank pages on the guide for facilitators.
2. The facilitator can document any new insights or improvements that come from the group discussions. This can be in the form of a new card, a note on the guide for facilitators, or simply a bulleted list of key takeaways.

**Facilitator's Notes:**

- The simulative-learning tools goal is to create a capacity-building method and tools co-designed with empowered women. By documenting new ideas, the participants are actively contributing to this process. Remind them of the "CIPOO" storytelling model from the research—their ideas here are a crucial part of the "Input," "Process," and "Outcome" of the MHP story.
- **Closing Remark:** Reinforce that just like the Lubas women, their experience and reflection are invaluable. This is how you "lay the foundation" for empowerment that will have an impact far beyond this simulation. This kind of self-reflection is the engine of sustained social change.

# Gameplay 2: Resources Assessment

The goal is to help participants understand the interconnected relationships between the various resources required for a successful MHP project, following the initial feasibility studies and social processes.

## Phase 1: The Resources and Their Connections

**Objective:** To demonstrate how a project's physical, financial, and human resources are deeply interconnected. By actively engaging women in the resource assessment phase, a project can accelerate their social transformation and ensure the foundation is not just technically sound but also socially inclusive from the very beginning.

**Materials:** "Components & Materials," "Stakeholders & Manpower," and "Fundings" card sets, and blank cards.

**Instructions:**

1. Take the **"Components & Materials," "Stakeholders & Manpower,"** and **"Fundings"** card sets.
2. Lay all the cards face-up in a vertical line on the game board, placing them under their respective category slots.

**Facilitator's Notes:**

- Explain that a successful MHP project depends on more than just technical viability. This phase focuses on the interconnectedness of **physical capital** (components), **human capital** (manpower/stakeholders), and **financial capital** (funding).
- The research shows that women's success was not just about getting a project but about how they effectively managed every aspect of it. Beverly Ahao's experience as treasurer and Maribel Tungcaling's role as operations manager prove that the management of these resources and the people involved is critical for success. This activity simulates that real-world experience.

## Phase 2: Building a Resources Plan

**Objective:** To have participants create a practical and logical resources plan tailored to their experience level, with a focus on women's capacity building.

**Instructions:**

1. **For New Participants:**
    - Ask them to discuss and decide which **components and materials** they'll need for an MHP project, then remove any unused cards.
    - Next, have them match the necessary **"Stakeholders & Manpower"** cards to the selected components, placing them side-by-side to show the relationship.
    - Finally, ask them to discuss and identify potential **"Fundings"** for all the chosen cards.
2. **For Experienced Participants:**
    - Have them use one set of cards to arrange the interconnected relationships based on a past MHP project they worked on.
    - Then, using the second set of cards, ask them to create a new, "ideal" model that reflects what they learned and how they would improve the process.
    - After they finish, ask them to compare both models and discuss the differences.

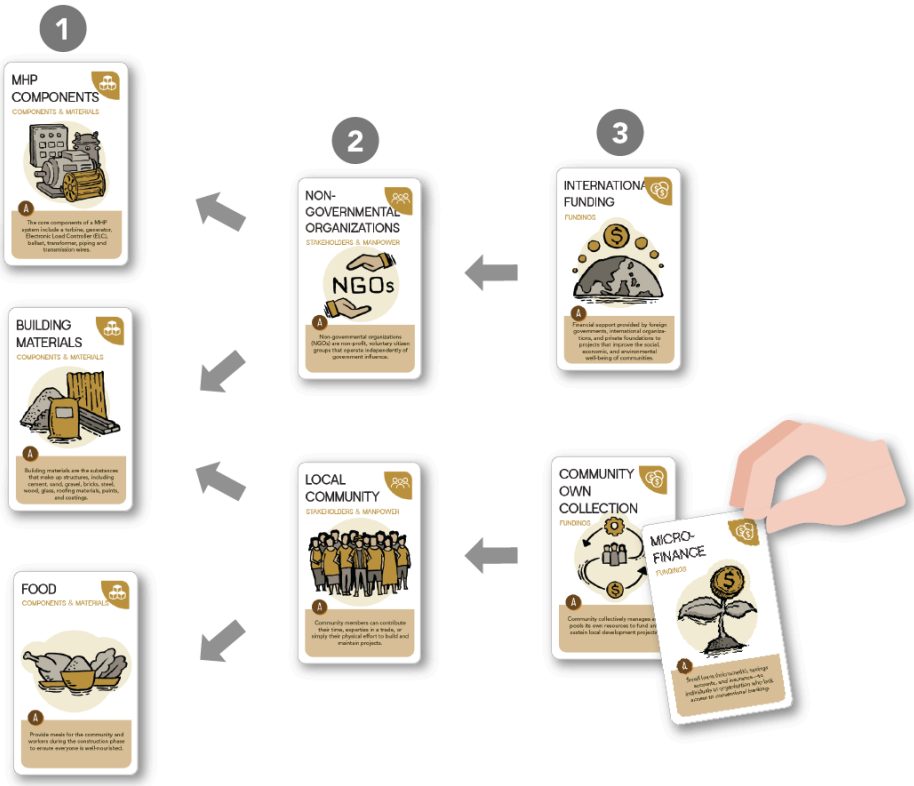
**Facilitator's Notes:**

- The Lubas MHP project highlights the project's policy of involving at least **40% women beneficiaries** in all activities. This intentional approach was a **game-changer** that built women's capacities and ensured the project's success. This activity lets them proactively think through the vital role of women's participation from the start.

- **Discussion Prompts:**

    - For the new participants, ask, "Beyond the technical roles, what roles can women take in managing these resources? How can involving them from the start contribute to the project's success?"

    - For the experienced participants, ask, "What was a major miscalculation with your original plan regarding manpower or funding, and how does your new, improved plan account for it?" "How did your experience with these resources influence the development of your own leaders?"




**Example resources assessment of Lubas community based on their MHP project.**

## Phase 3: Documentation and Reflection

**Objective:** To capture key insights and new ideas for future reference.

**Instructions:**

1. Encourage participants to use the provided blank cards or the blank pages on the guide for facilitators.
2. The facilitator should document any new insights or improvements that come from the group discussions, especially those related to resource management, team dynamics, and the role of women.

**Facilitator's Notes:**

- The simulative-based learning tools goal is to co-create a capacity-building method. Remind participants that the women's ability to take on leadership roles was a result of their direct involvement in managing resources. The documentation here helps to identify new "best practices" and "placed-based approaches."
- **Closing Remark:** Reinforce that a successful MHP project is more than just a good technical design. It is built on a strong foundation of **human capital**, smart financial planning, and the collective effort to ensure every resource is used wisely.

# Gameplay 3: Development Phase Simulation

The goal is to help participants understand the critical link between the planning stages and the hands-on work of building a project, while also emphasizing long-term sustainability and the vital role of women's leadership.

## Phase 1: The Build and Installation

**Objective:** To demonstrate the logical sequence of construction and the importance of planning for challenges and environmental stewardship, reflecting the women's proactive involvement.

**Materials:** "Development" card sets, and blank cards.

**Instructions:**

1. Take the **"Development"** card sets and place them face-up on the table.

**Facilitator's Notes:**

- Explain that this phase is where the plan on paper becomes reality. It's not just about building; it's about executing a plan effectively, managing risks, and building a foundation for the future. The Lubas MHP project shows that women were a "driving force" during this stage, making community mobilization possible.
- Remind participants of the real-world challenges the Lubas women faced, like dealing with "hard-headed workers" and political issues. This activity allows them to proactively strategize for these potential problems. The Lubas MHP project also showed that the women's participation in construction, like hauling materials, was a key step in building their confidence and a sense of ownership, making them reliable not just during implementation but also in later stages.

## Phase 2: Sequencing Development and Planning for the Future

**Objective:** To have participants create a practical development plan, tailored to their experience level, while considering the long-term environmental and social impact.

**Instructions:**

1. **For New Participants:**
    - Ask them to discuss and decide on the **sequence of construction** for each MHP component.
    - Next, have them identify and discuss **potential challenges** they might face during the process.
    - Finally, prompt a discussion about **long-term sustainability activities**, such as setting up a tree nursery, collecting seeds, and tree planting for watershed conservation.
2. **For Experienced Participants:**
    - Have they use one set of cards to arrange the sequence based on a past MHP project they worked on.
    - Then, using the second set of cards, ask them to create a new, **"ideal" sequence** that reflects how they would improve the process.
    - After they finish, ask them to compare both sequences and discuss the differences.

**Facilitator's Notes:**

- The Lubas MHP project highlights that women's empowerment was an "evolutionary" process. It shows that women were not only active in the physical construction but also took a **proactive role in environmental stewardship**. Their efforts led to a formal watershed protection plan and ordinances. By having them plan for this, they are thinking beyond the immediate project to its long-term impact on their natural capital.
- **Discussion Prompts:**
    - For the new participants, ask, "What problems might arise if you build the powerhouse before the headrace canal? How can involving women in construction help with community mobilization?"
    - For the experienced participants, ask, "What was the biggest, unexpected challenge during your construction, and how does your new sequence

account for it? How did your project's development phase lead to women taking on leadership roles later?"

**Example MHP development sequence of Lubas community.**

## Phase 3: Documentation and Reflection

**Objective:** To capture key insights and new ideas for future reference, contributing to the co-creation of a capacity-building tool.

**Instructions:**

1. Encourage participants to use the provided blank cards or the blank pages on the guide for facilitators.
2. The facilitator can document any new insights, challenges, or best practices that come from the group discussions.

**Facilitator's Notes:**

- The simulative-based learning tools ultimate goal is to co-create a capacity-building method. The women's ability to stand up to the Vice Mayor and address problems head-on is a result of the confidence gained from their direct involvement. By documenting their ideas, participants are contributing to a tool that will empower others just like them.
- **Closing Remark:** Reinforce that the development phase is about more than just building a physical structure. It's about building **human capital** and **social capital** and empowering all community members to become agents of change.

- Use tent cards to document and present **local or regional case studies**. Keep these visible during discussions—they serve as excellent, accessible reference points to connect the simulation to real life.

MINISTRY OF FOREIGN AFFAIRS
OF DENMARK

IRENA
International Renewable Energy Agency

# SUSTAIN

# Sub-Game 3: SUSTAIN

Operations, maintenance, financial and governance are crucial for the long-term success of a Micro-Hydro Power (MHP) system, ensuring it remains a reliable source of energy for the community. A simulation of the troubleshooting process is an effective way to train community members. By practicing how to identify and solve problems in a controlled environment, they can build the skills and confidence needed for real-life situations. This hands-on approach helps them to learn about the various components of the MHP system and how they work together. When a real problem occurs, they won't panic. They'll have a clear process to follow and the confidence to diagnose and fix the issue. The simulation trains them to think logically, test hypotheses, and work as a team to solve complex problems, all of which are vital for a successful MHP project.

**Key Learning Outcomes**

- Manage the day-to-day operations and maintenance of a micro-hydro system or other solutions.
- Detail the costs associated with a micro-hydro system or other solutions ongoing operations and maintenance.
- Identify potential revenue streams and calculate the revenue needed to sustain the micro-hydro system or other solutions.
- Understand the governance process, roles and responsibilities of each position.

**Materials:** SUSTAIN-O&M Game Board, “Indicators” cards, “Problems” cards, “Actions” cards, Financial Planning Game Board, "Initiative/Business" cards, “Expenses” cards, Financial Worksheet, Governance Game Board, "Roles" cards, "Situations" cards, blank cards, tent cards calculator, and tokens.

**Folder Location:** WEco_Toolkit_ver1 > 3_SUSTAIN

# Gameplay 1: MHP Operation and Maintenance Simulation

Operations and maintenance are crucial for the long-term success of a Micro-Hydro Power (MHP) system, ensuring it remains a reliable source of energy for the community. A well-maintained system prevents costly breakdowns, maximizes power output, and extends the lifespan of the equipment.

Proper operation involves daily checks and routines to monitor the system's performance. This includes things like clearing debris from the intake, inspecting leaks, and checking gauges and meters for daily checks. Routine maintenance like greasing bearings, checking fluid levels, and tightening bolts on a regular schedule. Regular maintenance prevents minor issues from becoming major, expensive failures. Without it, the system's efficiency will decline, leading to less power, more frequent outages, and eventually, a total shutdown.

A simulation of the troubleshooting process is an effective way to train community members. By practicing how to identify and solve problems in a controlled environment, they can build the skills and confidence needed for real-life situations. This hands-on approach helps them to learn about the various components of the MHP system and how they work together. When a real problem occurs, they won't panic. They'll have a clear process to follow and the confidence to diagnose and fix the issue. The simulation trains them to think logically, test hypotheses, and work as a team to solve complex problems, all of which are vital for a successful MHP project.

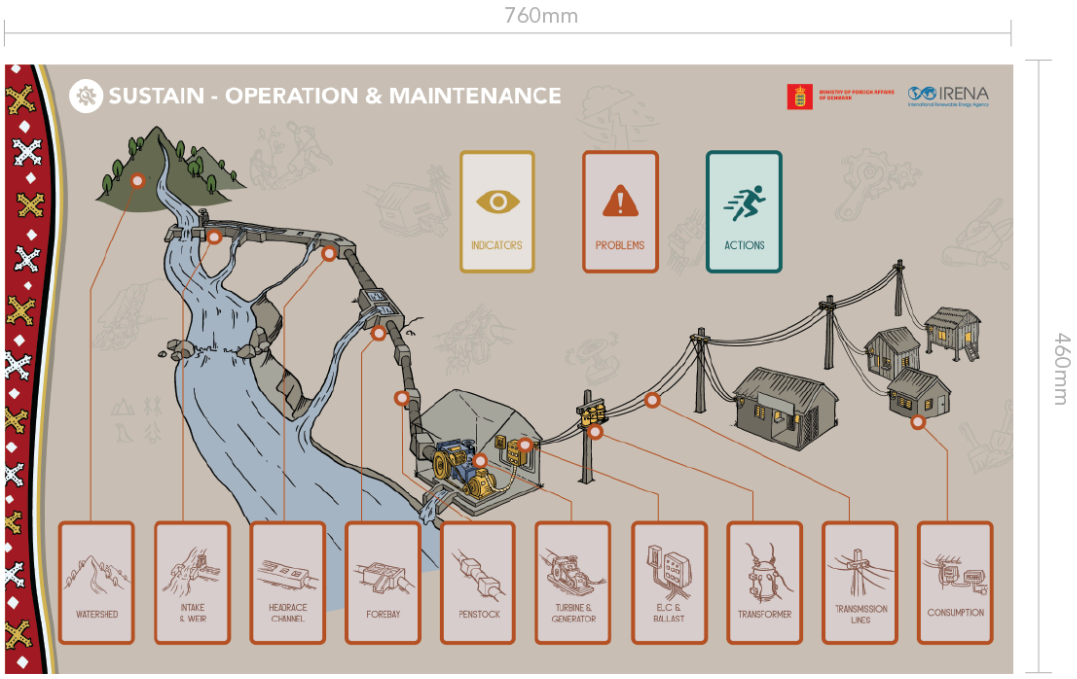
The simulation's goal is to build critical troubleshooting skills, but with a deeper focus on the women’s **social capital** and **leadership** that makes a community-managed project sustainable.

File Name: SUSTAIN_Tent_Card_Stand_330mmx610mm.pdf

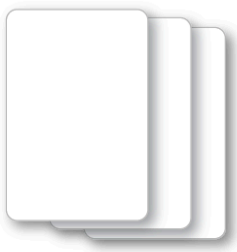
Print the content onto **A4 size paper**. To assemble, punch holes in the cards, then secure them to the tent card stand using either **rings or string**.

**Materials:** SUSTAIN-O&M Game Board, “Indicators” cards, “Problems” cards, “Actions” cards, tent cards, and tokens.

**Folder Location:** WEco_Toolkit_ver1 > 3_SUSTAIN > 1_Operation&Maintenance

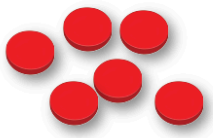



**SUSTAIN-O&M Game Board** 760mm x 460mm



**Blank Cards**
(55mm x 85mm)

**Tent Card**



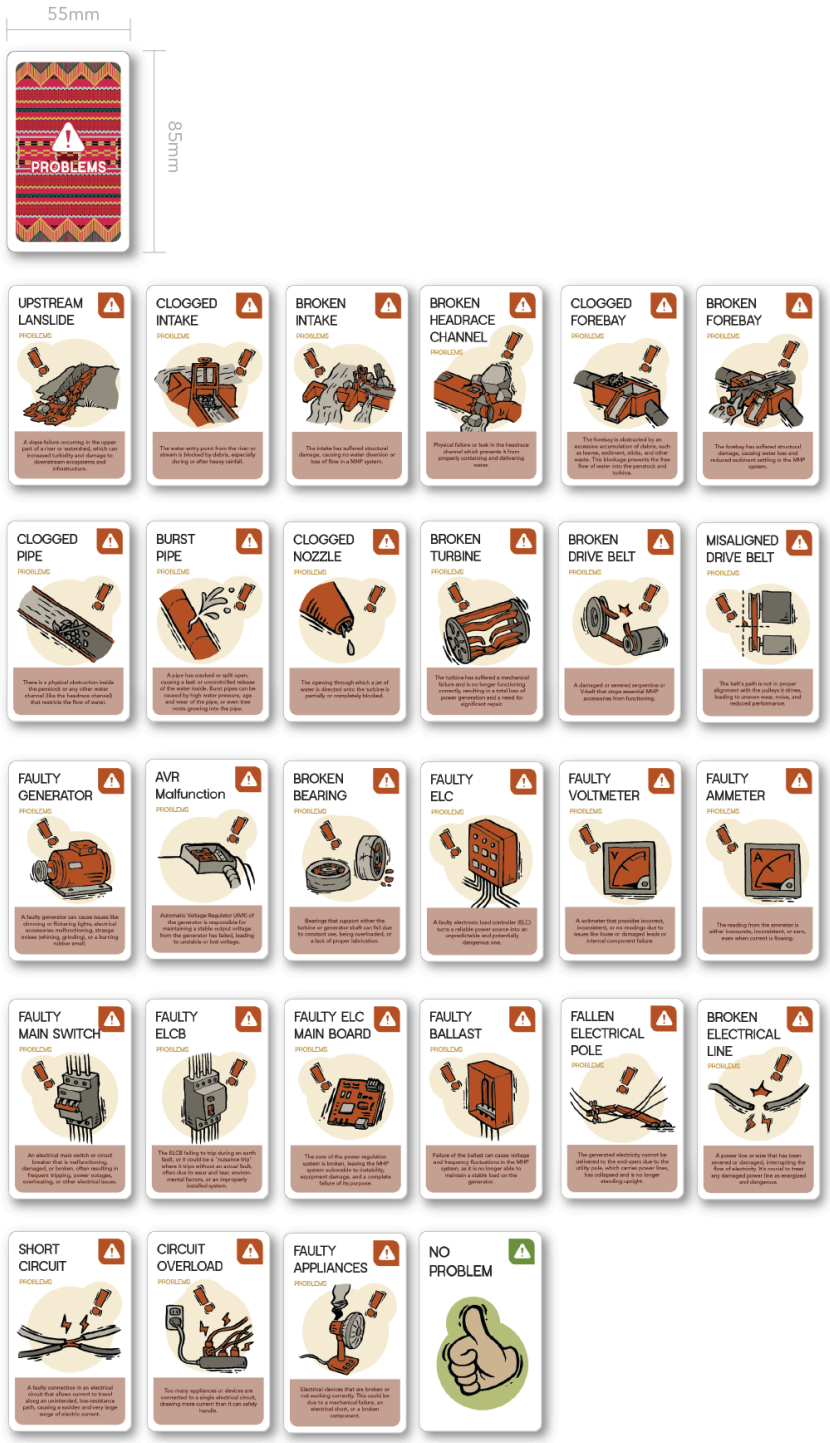
**Tokens**

File Name: OPERATE_MHP_Board_760x460mm.pdf

## "Indicators" Cards x 17 (55mm x 85mm)

File Name: OPERATE_MHP_Card_85x55mm.pdf

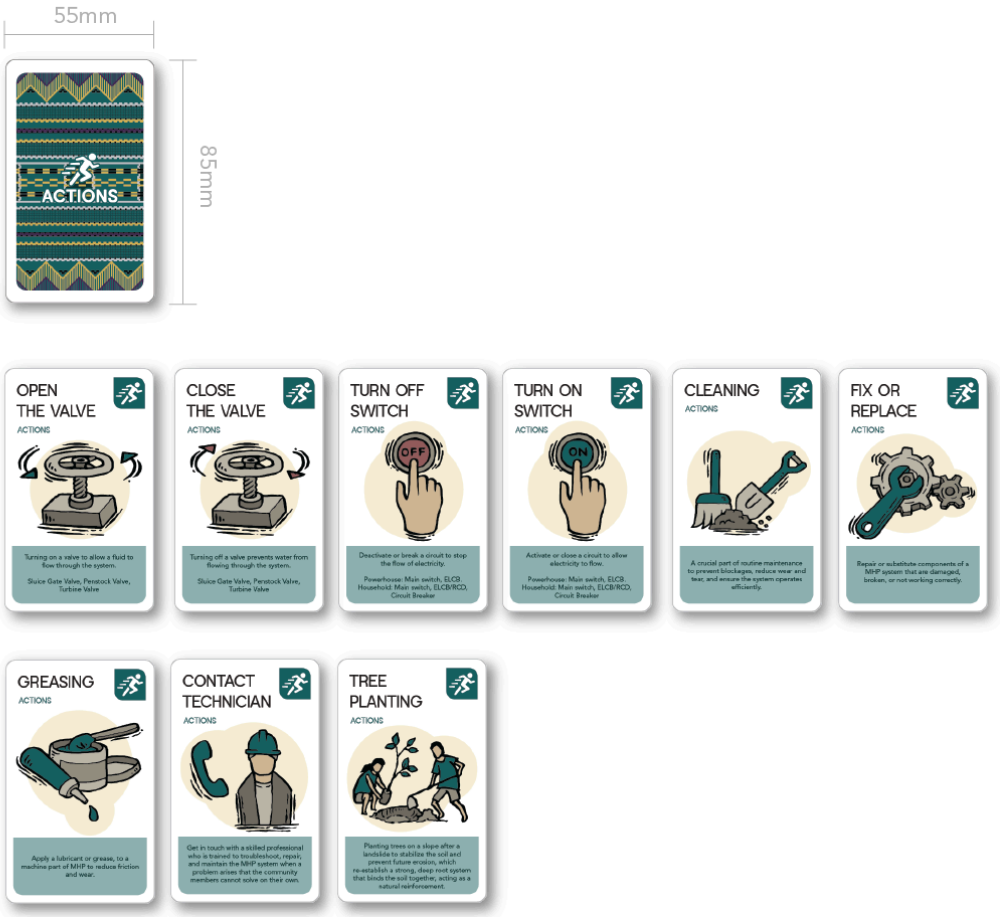
## "Problems" Cards x 28 (55mm x 85mm)




File Name: OPERATE_MHP_Card_85x55mm.pdf

* **"NO PROBLEM" card** on page 47 - **Quantity x 10**

## "Actions" Cards x 17 (55mm x 85mm)




File Name: OPERATE_MHP_Card_85x55mm.pdf

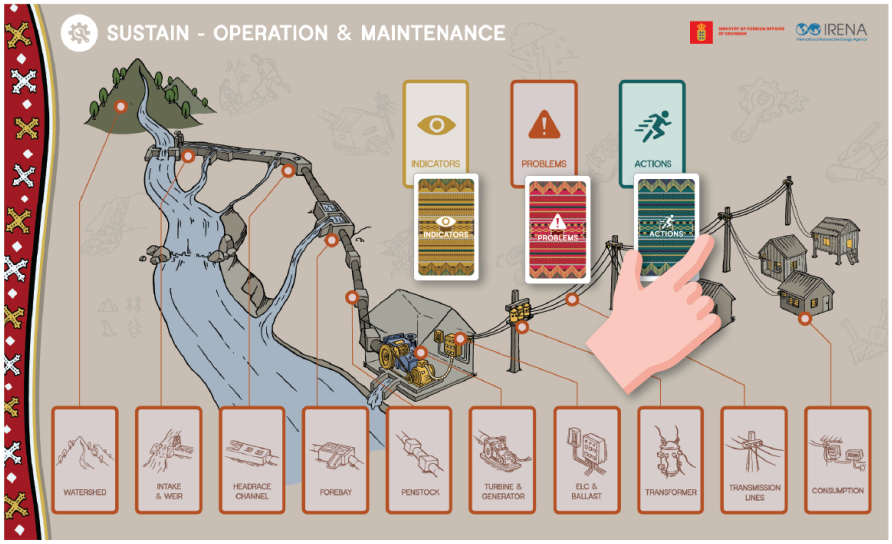
* **Cards** from page 49 to 54 - **Quantity x 3**

## Phase 1: Game Setup

**Objective:** To prepare the teams for the "Setting Problem" and "Finding Problem" rounds, emphasizing the importance of unity and communication.

**Instructions:**

1. Place “Indicators” cards, “Problems” cards, and “Actions” cards on the game board.




2. Divide participants into two teams, Team A and Team B.
3. Designate one team as the **"Setting Problem"** team and the other as the **"Finding Problem"** team for the first round.

**Facilitator's Notes:**

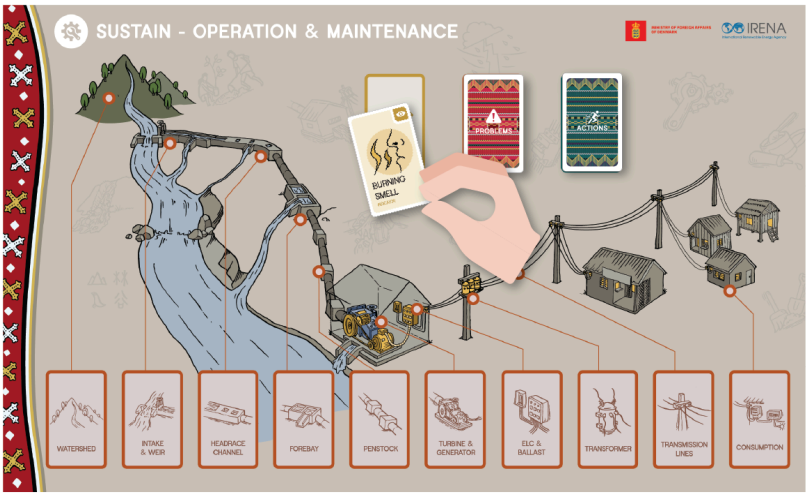
- Explain that this game simulates the very real challenges of managing an MHP system. The research shows that a sense of **collective action** and **unity** is crucial for solving these problems. Janeth Mandamlay's quote, "It’s so essential for us to stay committed to clear communication, face issues head-on, and support one another," is the guiding principle of this game.
- Remind them that women like Melodina Angga, who became a powerhouse operator despite her lack of formal education, and Beverly Ahao, who managed finances, gained confidence through hands-on learning. This game is a risk-free way to build that same confidence and show how women can take on technically demanding roles.

## Phase 2: The "Setting Problem" Round (Team A)

**Objective:** To create a realistic troubleshooting scenario for the opposing team to solve, highlighting potential real-world issues.

**Instructions:**

1. **Team A** secretly selects a problem card for one of the MHP components based on a chosen indicator (e.g., "low voltage," "unusual noise").




2. Team A places the selected problem card face-down on the designated slot for that component on the game board.

3. Team A then places dummy cards labeled **"No Problem"** face-down on all other component slots.

**Facilitator's Notes:**

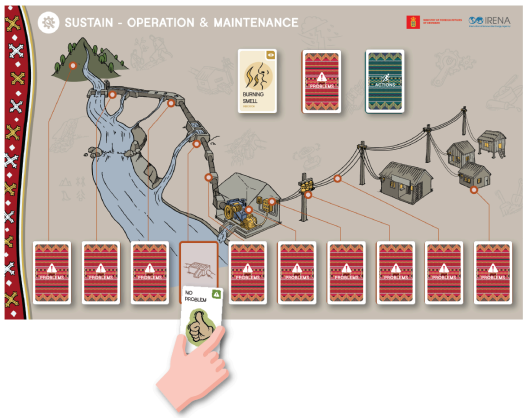
- **Discussion Prompt:** Guide Team A to think about potential, realistic problems they might encounter. Encourage them to consider issues that stem from both technical failures and human behavior. This reinforces the finding that a project's success is linked to social structures and processes.
- Use tent cards to document and present **local or regional case studies**. Keep these visible during discussions—they serve as excellent, accessible reference points to connect the simulation to real life.

## Phase 3: The "Finding Problem" Round (Team B)

**Objective:** To logically diagnose and locate the problem with minimal points deducted, simulating a real-world troubleshooting process.

**Instructions:**

1. **Team B** starts with **5 points**.
2. Each action they take—either asking a question or guessing—**deducts one point**.
3. Team B can ask questions to Team A. Team A must answer truthfully, as long as the question is related to other potential indications based on the problem (e.g., "Is the water flow rate high or low?").
4. Team B can guess where the problem is by flipping over a card. If they guess correctly, they keep any remaining points. If not, they lose a point, and the card is flipped back over.



**Facilitator's Notes:**

- This phase models the problem-solving and logical thinking that the women of Lubas demonstrated when facing challenges. Remind them of the "lessons learned" and the training provided by Yamog that helped the women "open their eyes to many possibilities." The new findings show that women in the OMT were able to take on technical responsibilities, demonstrating their strong aptitude for overall project management.

## Phase 4: Collective Action and Reflection

**Objective:** To reinforce the importance of unity in solving problems and recognizing new leadership roles.

**Instructions:**

1. Once the problem is correctly identified, both teams will **work together as a community** to sequence the corrective actions needed to fix it.
2. The participants can use the action cards to represent the steps and explain the details of each action (e.g., "Close the Valve: Turning off the Sluice Gate Valve of intake" -> "Cleaning: Remove Debris from Intake").

3. After the round, teams switch roles. The first team to reach a predetermined number of points wins the game.

**Facilitator's Notes:**

- This final step is crucial. The Lubas MHP project emphasizes that the women's ability to overcome challenges was rooted in their **unity and resilience**. It shows that they have gained **"recognitional justice"** and are acknowledged by traditional leaders for their ability to self-assert and manage projects. This is a key outcome of their involvement.
- **Closing Remark:** Reinforce that even in competition, the goal is collaboration. A community's success with an MHP system depends on its members working as one to face problems and find solutions. This game is not just about winning; it's about learning to work together to ensure their MHP system is a long-lasting, successful project.

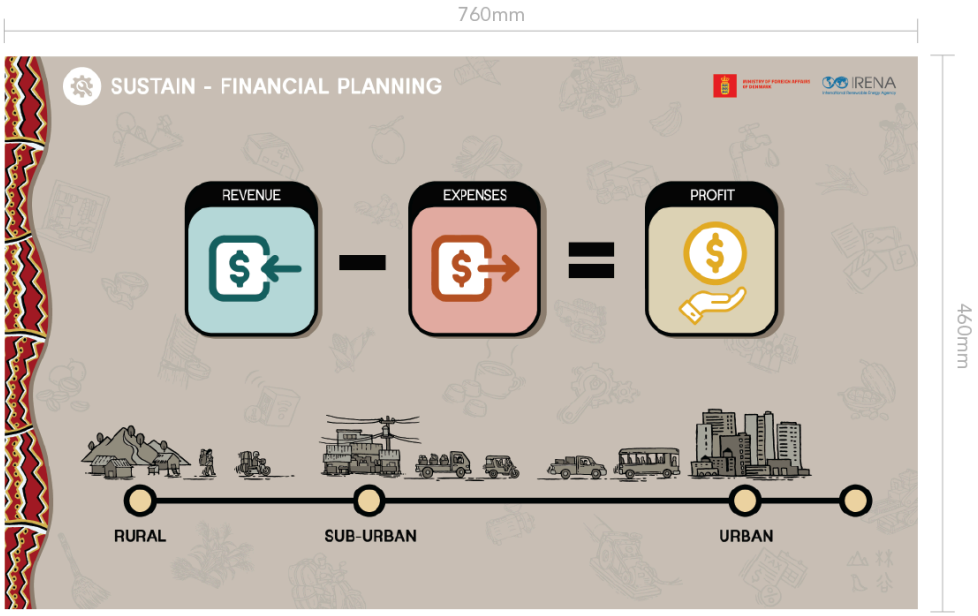
# Gameplay 2: Financial Planning Simulation

A well-designed financial plan ensures the MHP system remains a sustainable asset for the community, generating income and improving livelihoods for the long term. The MHP system itself is only the first step. The real value comes from how the community uses that power to create economic benefits through productive end uses. A solid financial plan helps make this happen.

The goal is to help participants understand how to transform MHP electricity into a source of sustainable income and community resilience, with a deeper focus on the **women's capacity to own and control** RE-driven projects.

**Materials:** Financial Planning Game Board, "Initiative/Business" cards, “Expenses” cards, Financial Worksheet, blank cards, pen, tent cards, and a calculator.

**Folder Location:** WEco_Toolkit_ver1 > 3_SUSTAIN > 2_Financial_Planning

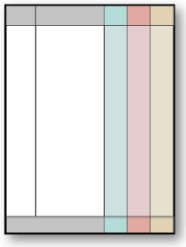



**SUSTAIN-O&M Game Board** 760mm x 460mm

**Blank Cards**
(55mm x 85mm)

**Tent Card**

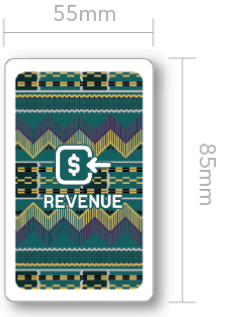
**Calculator**

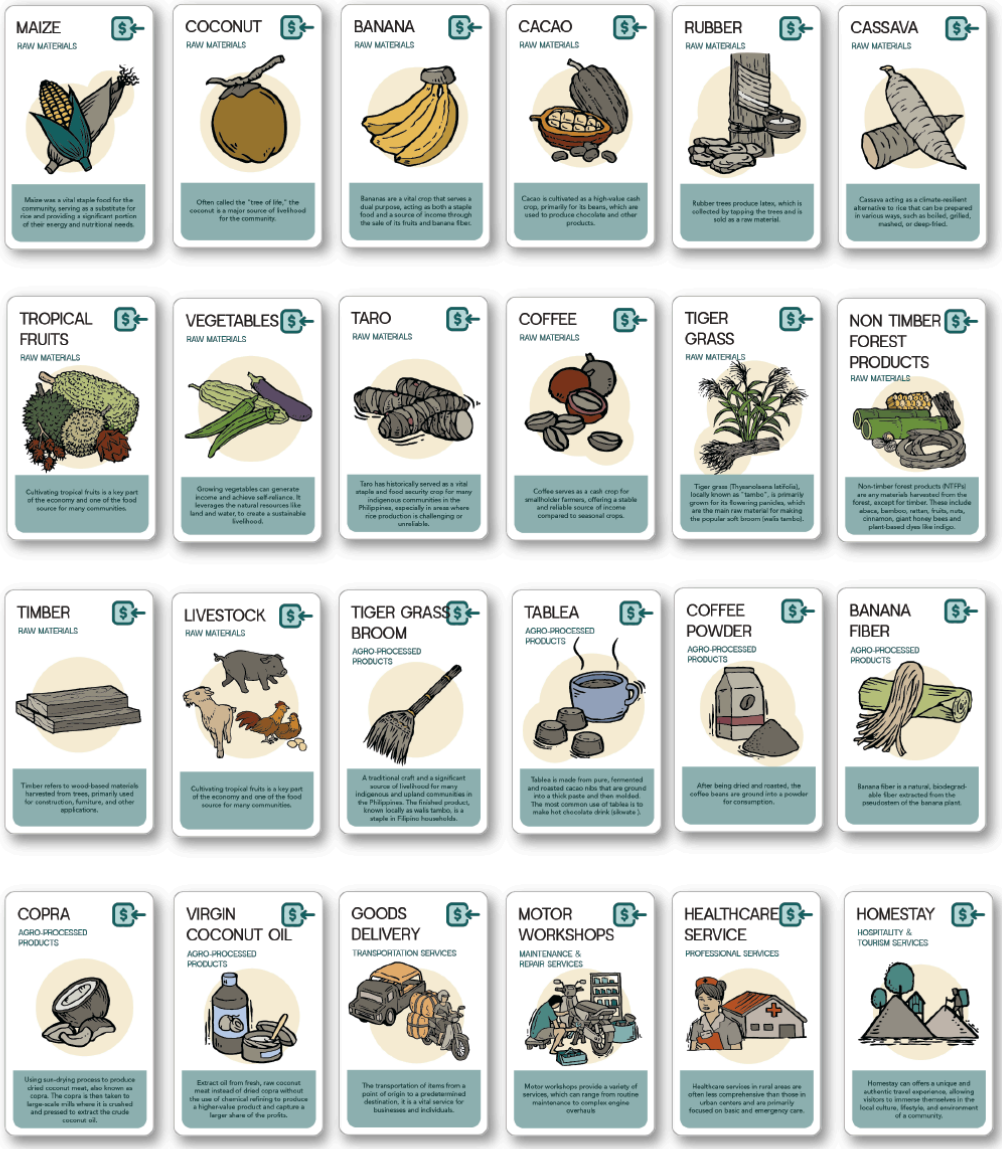


**Financial Worksheet**

File Name: OPERATE_Finance_Board_760x460mm.pdf

# "Revenue" Cards x 35 (55mm x 85mm)



File Name: OPERATE_Finance_Card_85x55mm.pdf

## "Expenses" Cards x 4 (55mm x 85mm)

File Name: OPERATE_Finance_Card_85x55mm.pdf

## Financial Worksheet

| Date | Description | REVENUE Money IN | EXPENSES Money OUT | PROFIT Balance |
|---|---|---|---|---|
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| | | | | |
| | **TOTAL** | | | |

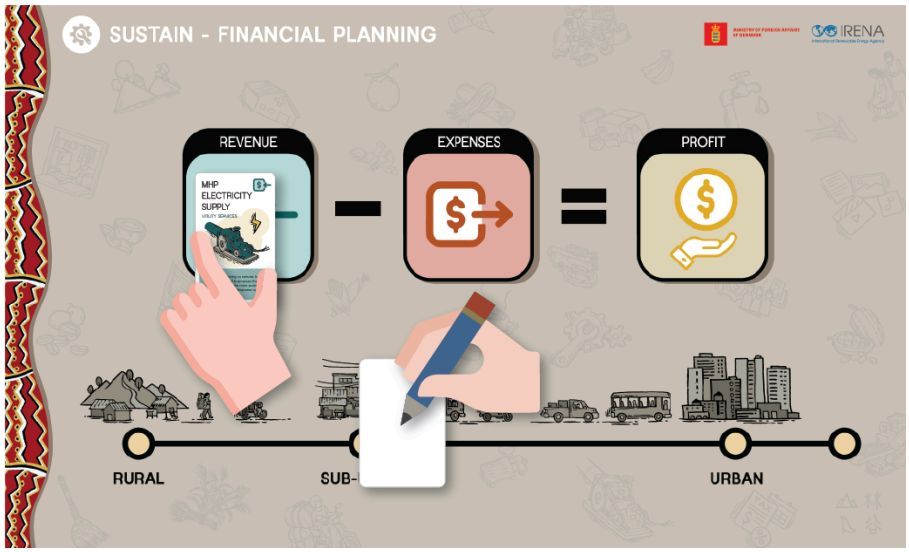
File Name: OPERATE_Finance_Worksheet_210x297mm.pdf

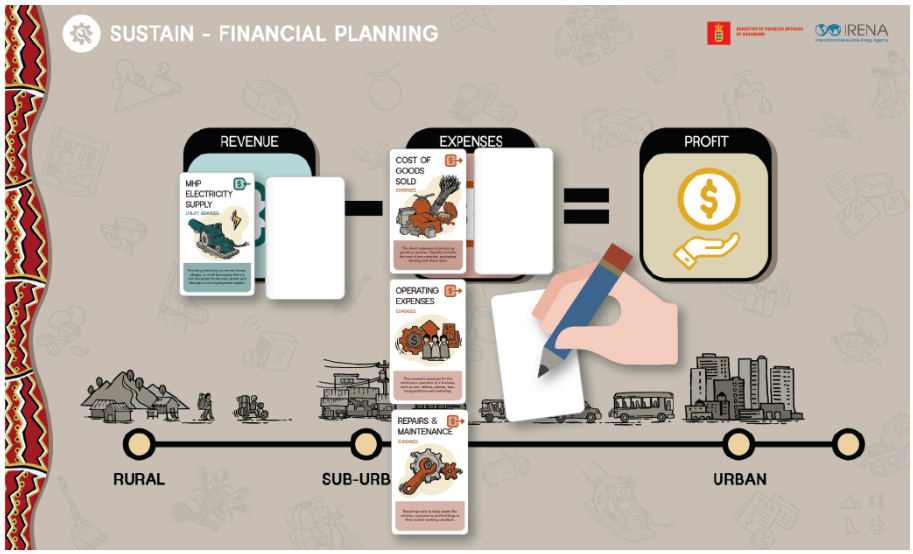
## Phase 1: Business Viability and Sustainability

**Objective:** To teach participants how to create a simple financial model for a productive end-use initiative and strategize for its sustainability, reflecting women's roles in financial management.

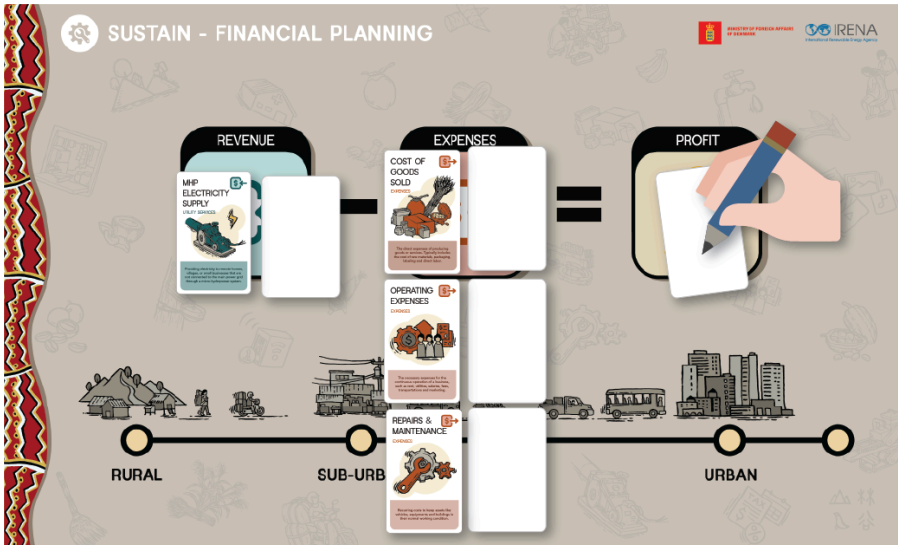
**Instructions:**

1. Ask participants to select one initiative/business from the cards provided and place it on the **"Revenue"** slot of the board.
2. Guide them to identify the **selling price, number of customers, and their monthly purchase power**. They should write this on a whiteboard card and place it under the "Revenue" slot.



3. Next, have them identify and list all potential **expenses**, such as Cost of Goods Sold and Operating Expenses. They will write these on a separate whiteboard card and place it under the **"Expenses"** slot.
4. Instruct them to **calculate the net income** by subtracting total expenses from total revenue.




5. To simulate different scenarios, encourage them to **change the parameters** (e.g., lower selling price, fewer customers, higher expenses) and recalculate the income.
6. Extend the simulation by having them **change the duration** from one month to a quarter, six months, or one year to project financial viability over time.
7. Facilitate a discussion on **strategies for sustainability**, such as increasing revenue or reducing expenses.

**Facilitator's Notes:**

- The Lubas MHP project shows that the women of Lubas have the capacity to **"own and control"** their MHP system and its financial aspects. This activity directly relates to the experiences of women like Beverly Ahao and Michelle Icdang, who successfully managed the associations' finances, ensuring every amount was accounted for.

- The women's involvement in financial management was a huge **confidence-building** phenomenon. It showed them that they could take control of resources and make them work for the community.

- **Discussion Prompt:** Ask, "How does a profitable business ensure the MHP system itself remains operational?" "What specific financial challenges might a woman face in managing a community business, and what can be done to help her?"

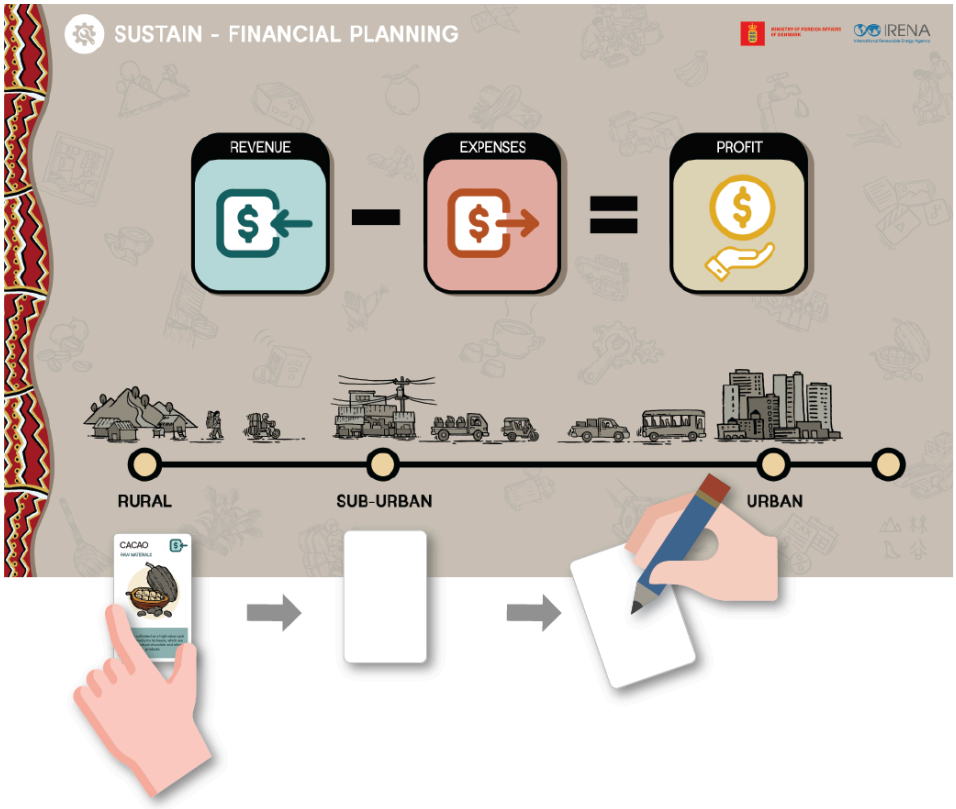
## Phase 2: Market Access and Value-Added Products

**Objective:** To help participants understand how to increase income by adding value to their products and accessing larger markets.

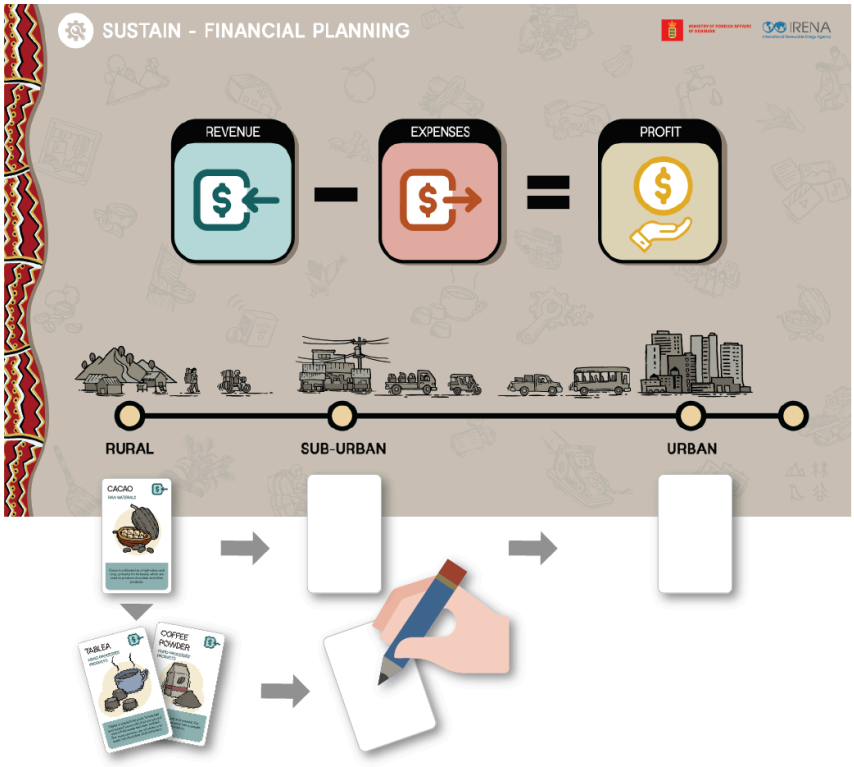
**Materials:** Financial Planning Game Board, whiteboard cards, markers, and a calculator.

**Instructions:**

1. Explain the concept of **market access**. Using the map, identify Lubas (rural), Magpet (suburban), and Davao City (urban).
2. Ask participants to choose an agricultural product like coffee or cacao beans.




3. Have them perform a "market survey" by assigning different prices to each location, reflecting the price difference between rural, suburban, and urban markets.
4. Facilitate a discussion on the **challenges** of accessing bigger markets, such as transportation costs and political issues.
5. Prompt them to think about how MHP electricity can be used to create **value-added products** (e.g., roasted coffee beans, cacao powder).




6. Discuss how these value-added products can command a higher price and help them reach a wider market, further increasing their incomes.

**Facilitator's Notes:**

- This phase addresses the core idea that women can "enrich and advance" their way of life with electricity. The women's creation of the **Nähren Center** and their work in sustainable agriculture shows their capacity to move beyond basic needs toward economic optimization.
- The Lubas MHP project highlights that women's increased confidence allows them to make representations to government officials. Maribel Tungcaling's story of confronting the Vice Mayor to defend the project shows that the women are willing to assert themselves. This simulation prepares them to do the same for market access.
- **Discussion Prompt:** Ask, "What are the biggest barriers to getting your products to a city like Davao? How can electricity and the women's association (KATAWA) help you overcome those barriers and assert your rights?"
- Use tent cards to document and present **local or regional case studies**. Keep these visible during discussions—they serve as excellent, accessible reference points to connect the simulation to real life.

# Gameplay 3: Governance Simulation

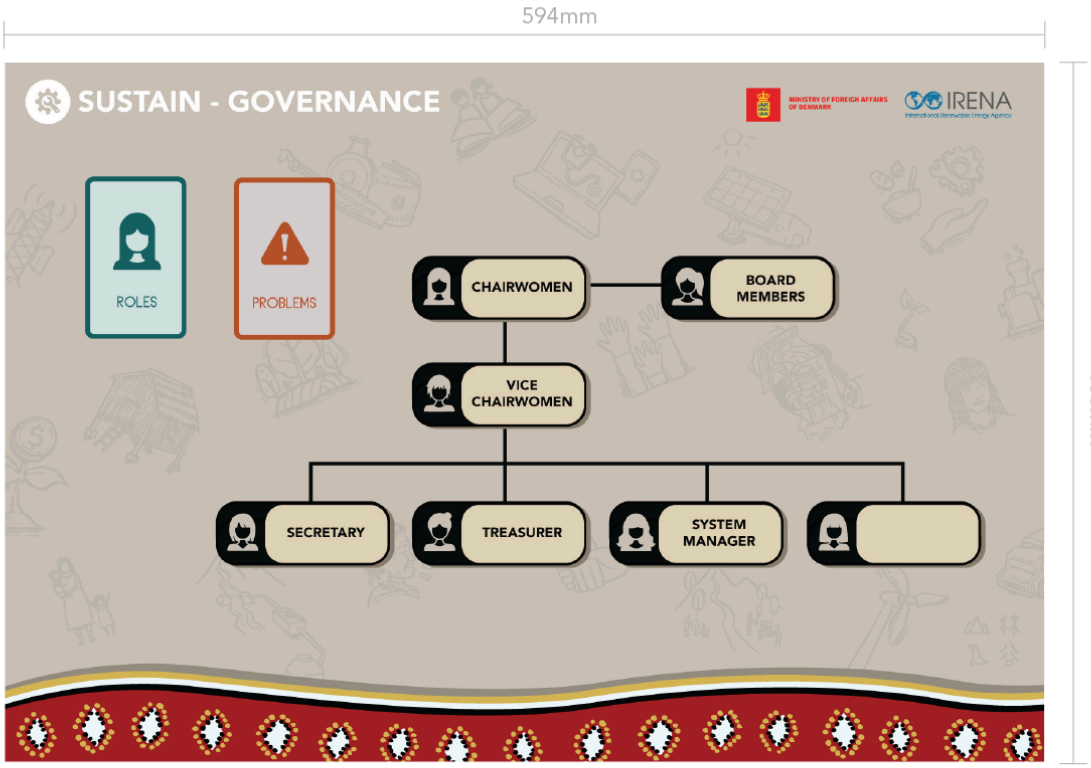
Governance is the backbone of any sustainable community project, especially for an MHP system. A clear and effective governance structure is what transforms a physical asset into a long-term benefit. It provides the framework for transparent decision-making, ensures the fair distribution of resources, and creates a system for resolving conflicts.

Without a strong governance model, an MHP project can quickly fall into disrepair due to a lack of funds for maintenance or a breakdown in community relations. The experiences of the Lubas women, who took on key leadership roles in various associations, proved that good governance is not just a concept—it's the driving force behind project sustainability and community empowerment.

This guide provides a framework for a simulation that helps participants understand the critical importance of governance in community-managed initiatives. Through hands-on role-playing, participants will experience how leadership, rules, and collective problem-solving ensure a project's long-term success.

**Materials:** Governance Game Board, "Roles" cards, "Situations" cards, blank cards, tent cards, and pen.

**Folder Location:** WEco_Toolkit_ver1 > 3_SUSTAIN > 3_Governance




**SUSTAIN-GOVERNANCE Game Board** 594mm x 400mm

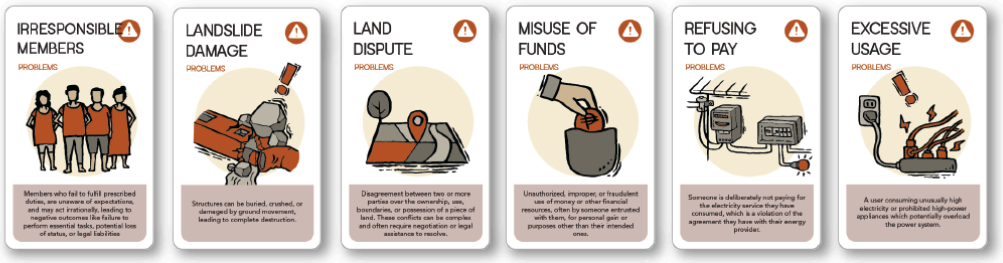
**Blank Cards**
(55mm x 85mm)

**Tent Card**

File Name: OPERATE_Governance_Board_594x400mm.pdf

## "Roles" Cards x 6 (55mm x 85mm)

## "Situations" Cards x 6 (55mm x 85mm)



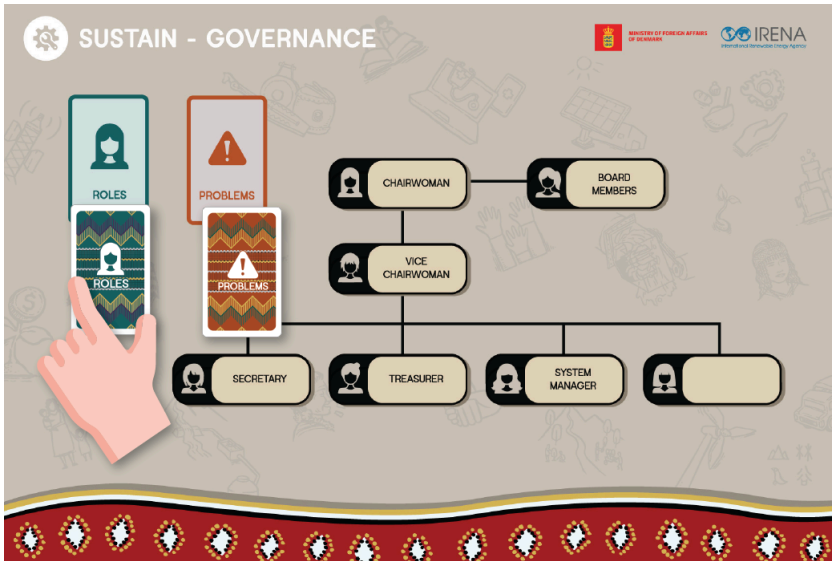

File Name: OPERATE_Governance_Card_85x55mm.pdf

## Part 1: Setting the Stage

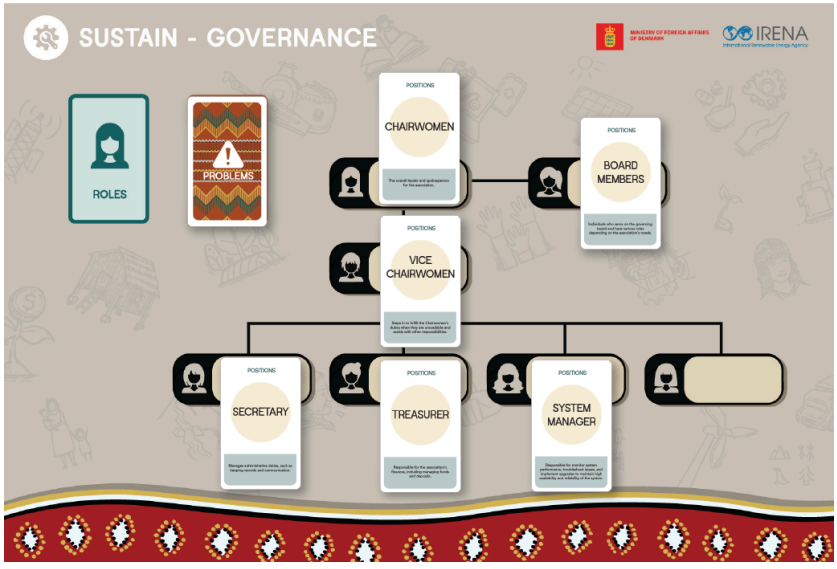
**Objective:** To introduce the concept of governance and its importance by having participants select an association and their individual roles within it.

**Instructions:**

1. Setup the game board by placing "Role" cards and "Situation" cards onto their respective slots. Ask participants to select one type of association (e.g., MHP system association, Water system association, or women's association).




2. Have each participant choose a role within that association from the **"Role"** cards. You can decide as a group whether roles are chosen, elected, or assigned randomly. This simulates different real-world scenarios.



3. Once the roles are set, each participant will hold their respective **"Role"** card.
4. Facilitate a brief discussion where each person shares their understanding of their roles and responsibilities based on the card.

**Facilitator's Notes:**

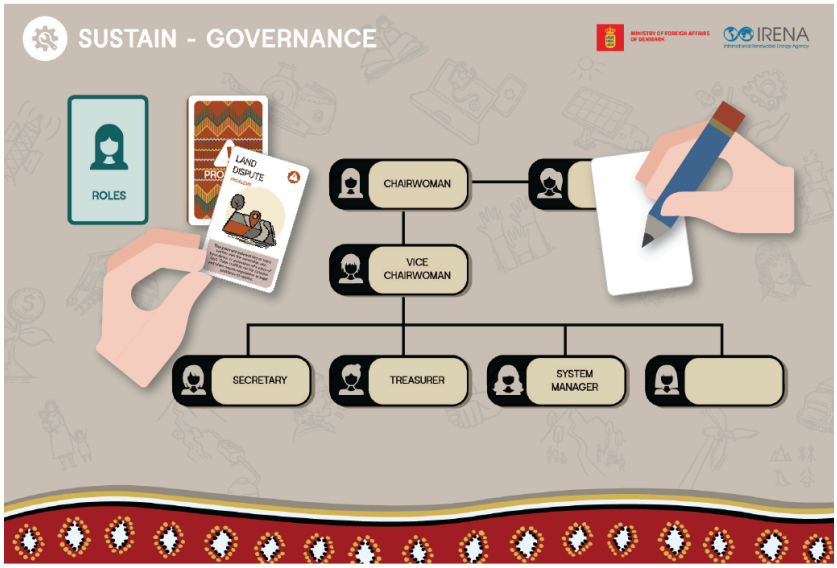
- Emphasize that every role, from Chairperson to Treasurer or a regular member, is vital for the association's success. The research showed that women's participation was a "game-changer" precisely because they took on key roles that were once held by men.
- **Best Practices:** Remind them that good governance is built on clear communication and mutual respect. The Lubas women, for instance, learned how to face issues "head-on" and find solutions together.

## Part 2: The Problem-Solving Process

**Objective:** To put the newly formed association to the test by having them collectively resolve a real-world problem.

**Instructions:**

1. Take all the **"Situation"** cards related to the selected initiative, shuffle them, and place them face-down on the table.
2. Randomly draw one card or create a new problem by writing it on a blank card. This card will present a potential problem the association must solve. Examples could be a conflict over electricity fees, a technical breakdown, or a dispute over project funds.



3. As an association, let the participants discuss and decide how they will resolve the problem, such as creating clear policies, ensuring transparency, or finding a democratic solution.
4. After they have reached a solution, debrief the process. Ask questions like, "Who spoke the most? Did everyone get a chance to share their ideas? How did you ensure the solution was fair to everyone?"

**Facilitator's Notes:**

- This phase simulates the challenges faced by organizations like LUTHEDA and KATAWA. The research highlights instances where women had to deal with tough issues like non-payment of fees and land security. This activity allows them to practice problem-solving in a safe environment.
- Pay close attention to how individuals' step into leadership roles. This mirrors the real-life experience of women like Janeth Mandamlay, the KATAWA Chairperson, who learned to lead through direct experience.

## Part 3: Experience the Evolution of Roles

**Objective:** To allow participants to experience different roles and understand how leadership can emerge from any position.

**Instructions:**

1. After completing one or more rounds, give participants the option to **switch or re-elect their roles**.
2. Encourage participants to try a role that is different from their initial choice. For example, if someone played a technical role, have them tried a financial or leadership role.

**Facilitator's Notes:**

- This final step is crucial for reinforcing the research's finding that women's empowerment is an "evolutionary journey." The ability to switch roles demonstrates that leadership is not fixed; it is a skill that can be developed.
- This activity can show how a simple act like giving women a chance to lead can change a community. It aligns with the finding that the women of Lubas gained a "new balance of power" by actively participating in and taking control of their associations.

- Use tent cards to document and present **local or regional case studies**. Keep these visible during discussions—they serve as excellent, accessible reference points to connect the simulation to real life.

MINISTRY OF FOREIGN AFFAIRS
OF DENMARK

IRENA
International Renewable Energy Agency

# Main Game: WEco

**The main game: WEco** is an immersive board game centered on how an indigenous community, **led by women** and powered by **renewable energy**, drives its own sustainable development even in the face of unpredictable climate.

It is a multi-stage journey that seamlessly blends **modern infrastructure** (Micro-Hydropower or MHP) with **traditional wisdom** to spark profound social change—ranging from individual growth and agricultural improvements to policy-making and collective economic stability.

**WEco** redefines trade and development for sustainability. Players engage in eco-friendly production, facilitate resource sharing, and build a circular economy, all while striving for equitable market access. The game specifically highlights the vital and often undervalued leadership role of indigenous women in this transition.

Ultimately, this board game explores the complex connections between **human behavior, gender dynamics, and ecological, hydrological, and economic systems**, preparing participants to recognize, support, and replicate real-world empowerment.

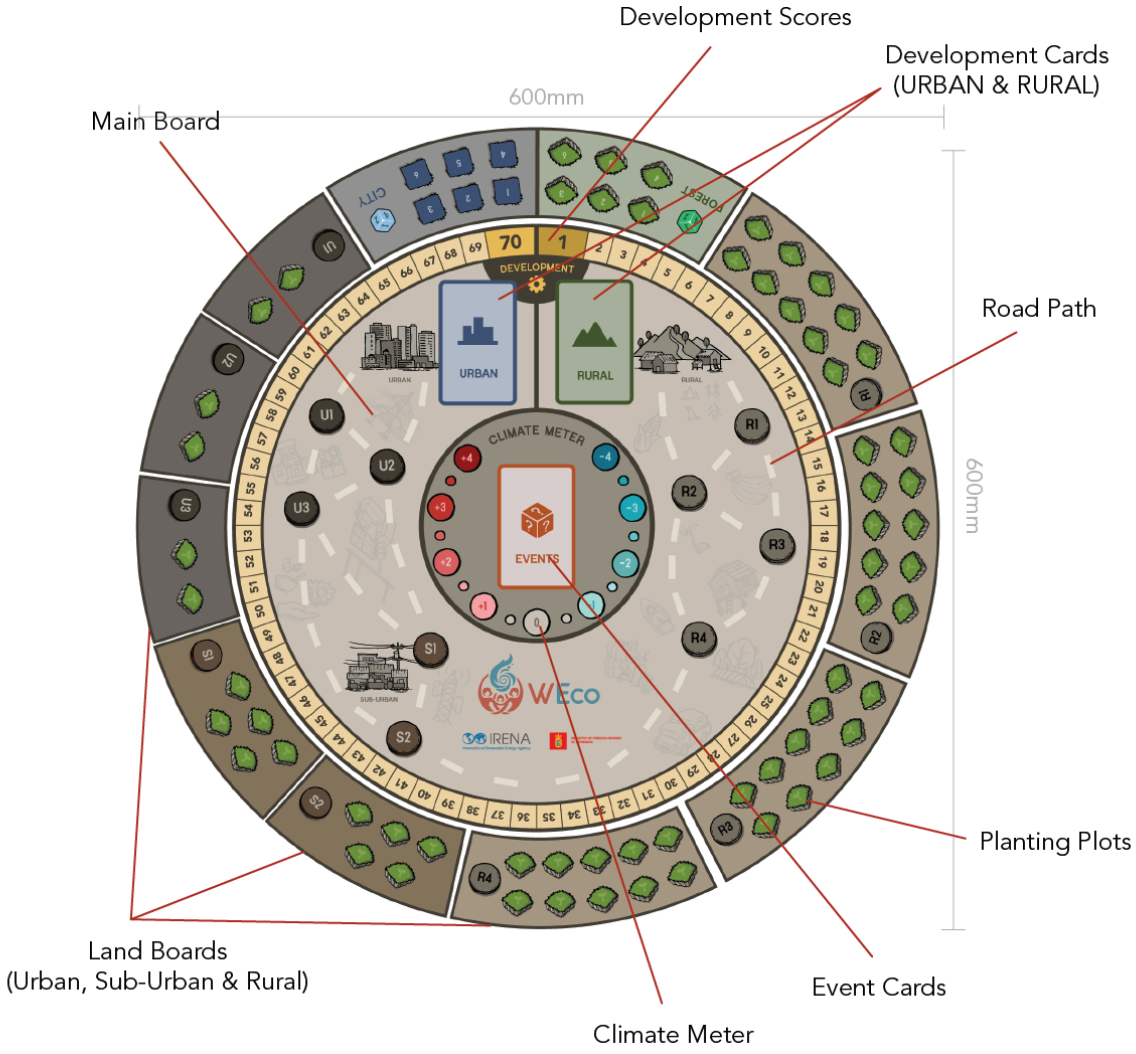
**Key Learning Outcomes**

Through this simulation, participants will:

- **Ecological Stewardship:** Understand the crucial relationship between **watershed health**, sustainable land use, and community **resilience** to environmental changes.
- **Economic Empowerment:** Identify how **productive end-use applications of energy** can be leveraged to maximize economic benefit and improve livelihoods within communities.
- **Market Strategy:** Recognize the primary challenges and opportunities related to community **market access** and food supply chains.
- **Cooperative Models:** Understand the principles of **cooperative, inclusive, and sustainable economic models** as viable alternatives to purely competitive ones.
- **Recognitional Justice: Recognize the vital role and leadership of Indigenous women** in driving the transition towards more equitable and sustainable economic systems.

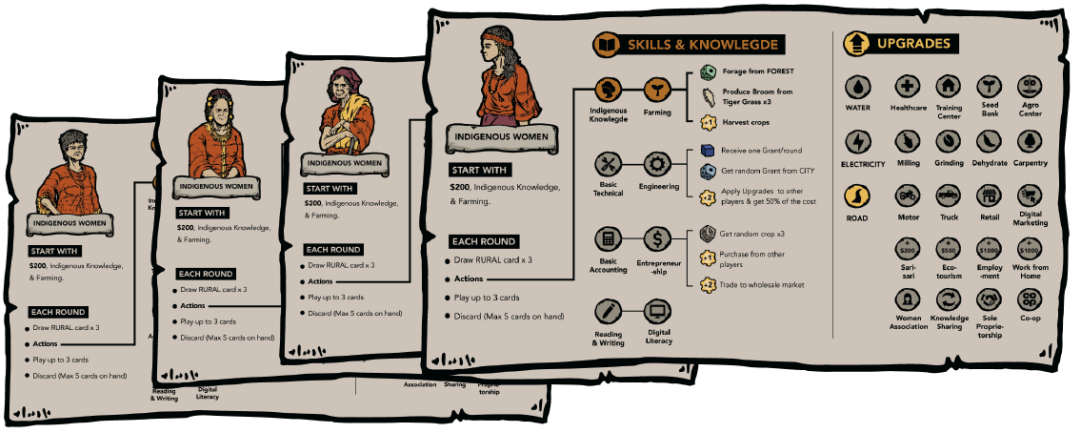
**Materials:** WEco Game Board, Land Boards, Role Boards x6, “Event” cards, “Urban” cards, “Rural” cards, Market Board, Game Money, Product tokens, Upgrade tokens, Climate token and Player Tokens.

**Folder Location:** WEco_Toolkit_ver1 > 4_MAIN

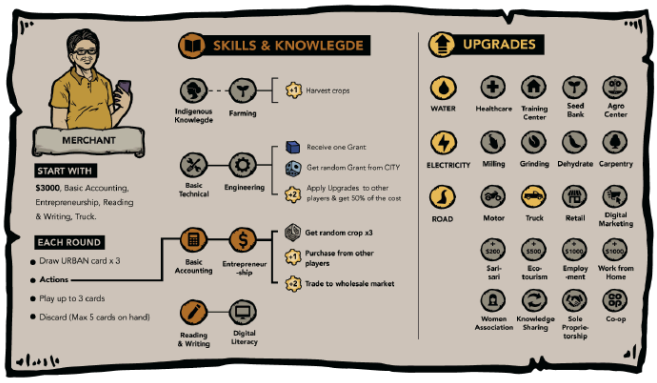



**WEco Game Boards** 600mm x 600mm

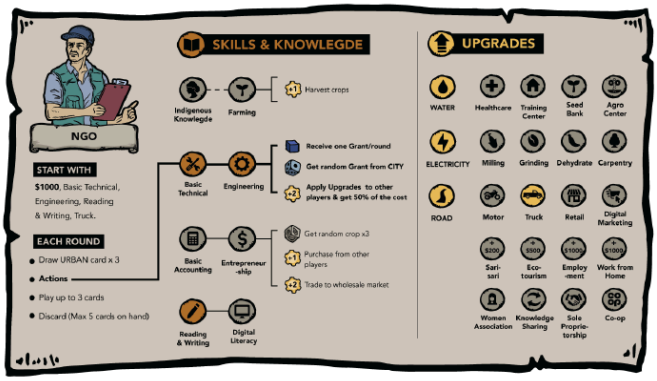
File Name: MAIN_Center_Board_&_Land_Boards.pdf




**INDIGENOUS WOMEN Role Boards x4**
230mm x 140mm




**MERCHANT Role Boards x1**
230mm x 140mm




**NGO Role Boards x1**
230mm x 140mm

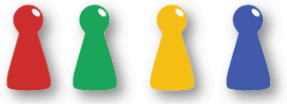
File Name: MAIN_Role_Board_230mmx140mm.pdf

Climate Token

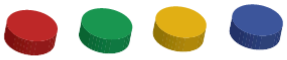
Crops Dice

Numbers Dice

## MARKING TOKENS


Player Tokens

House Tokens


Skill & Upgrade Tokens

## INFRASTRUCTURE TOKENS

Transmission Line Tokens

Water Pipe Tokens

Dirt Road Tokens

Concreate Road Tokens

## RAW MATERIALS

Maize Tokens

Fruit Tokens

Grass Tokens

Cacao Tokens

Tree Tokens

## PROCESSED PRODUCTS

Food Tokens

Dried Fruit Tokens

Broom Tokens

Tablea Tokens

Furniture Tokens

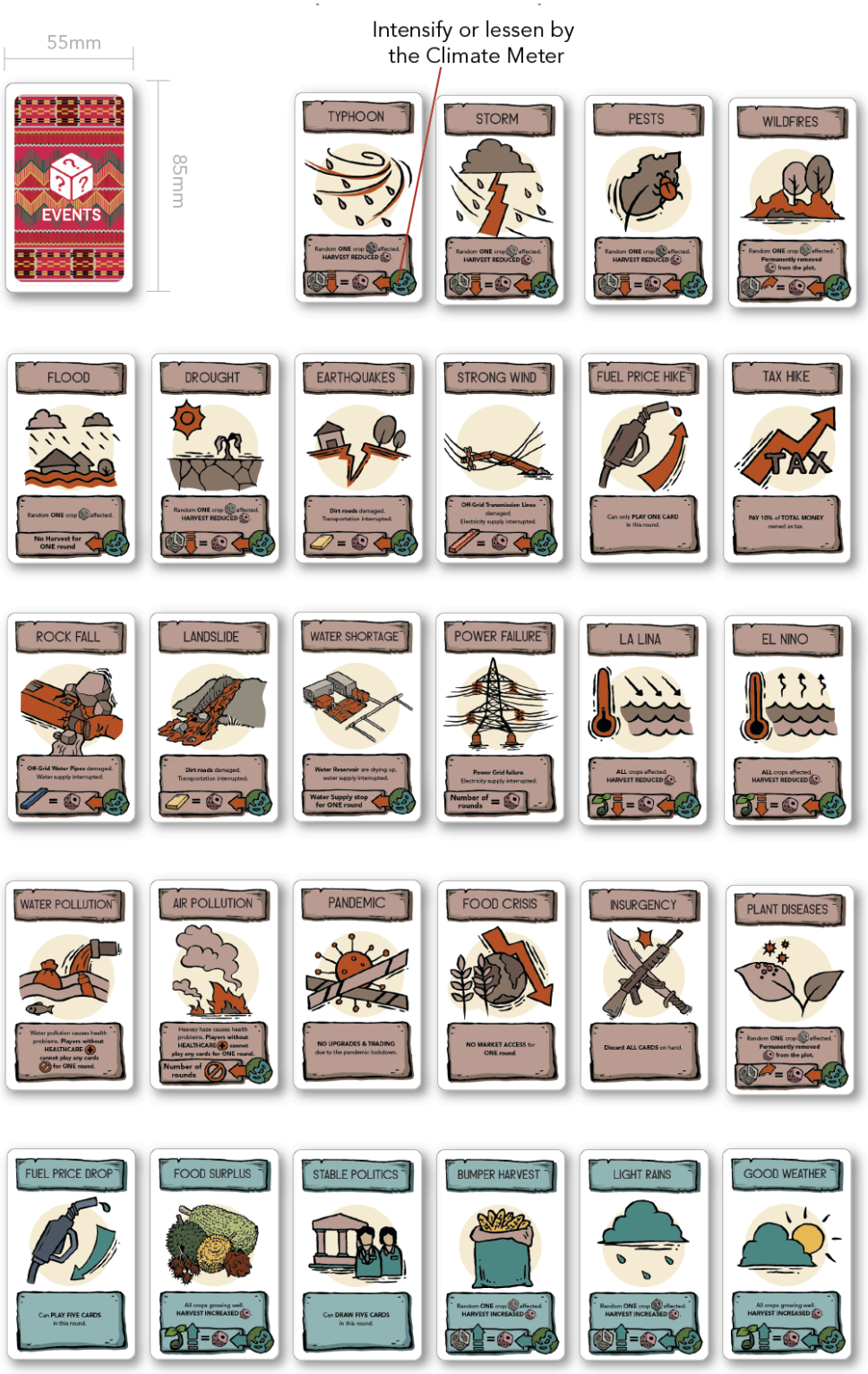
Grant Tokens

Game Money

**Blank Cards**
(55mm x 85mm)

**Tent Card**

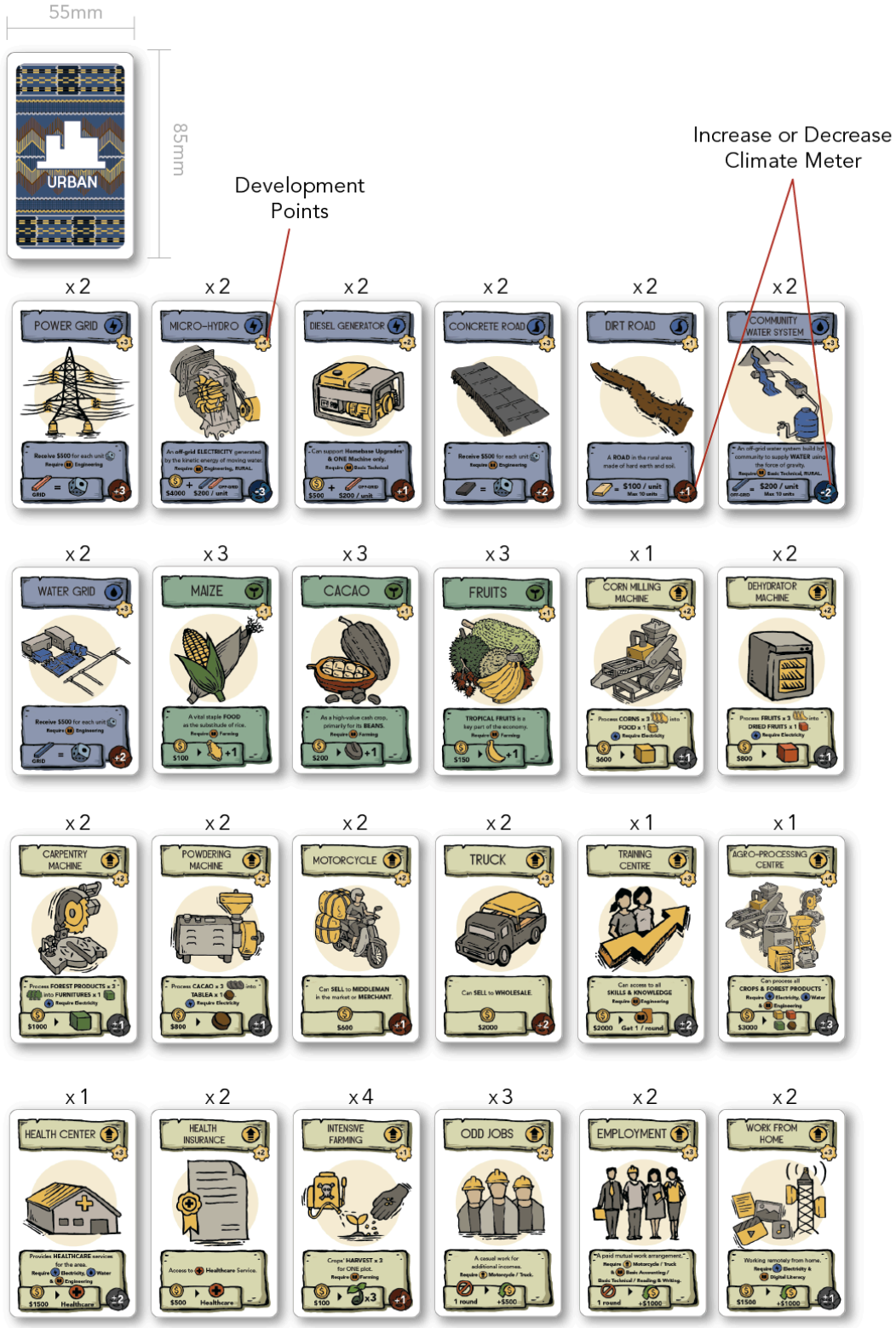
File Name: MAIN_Components_210mmx297mm.pdf,
MAIN_Tent_Card_Stand_330mmx610mm.pdf

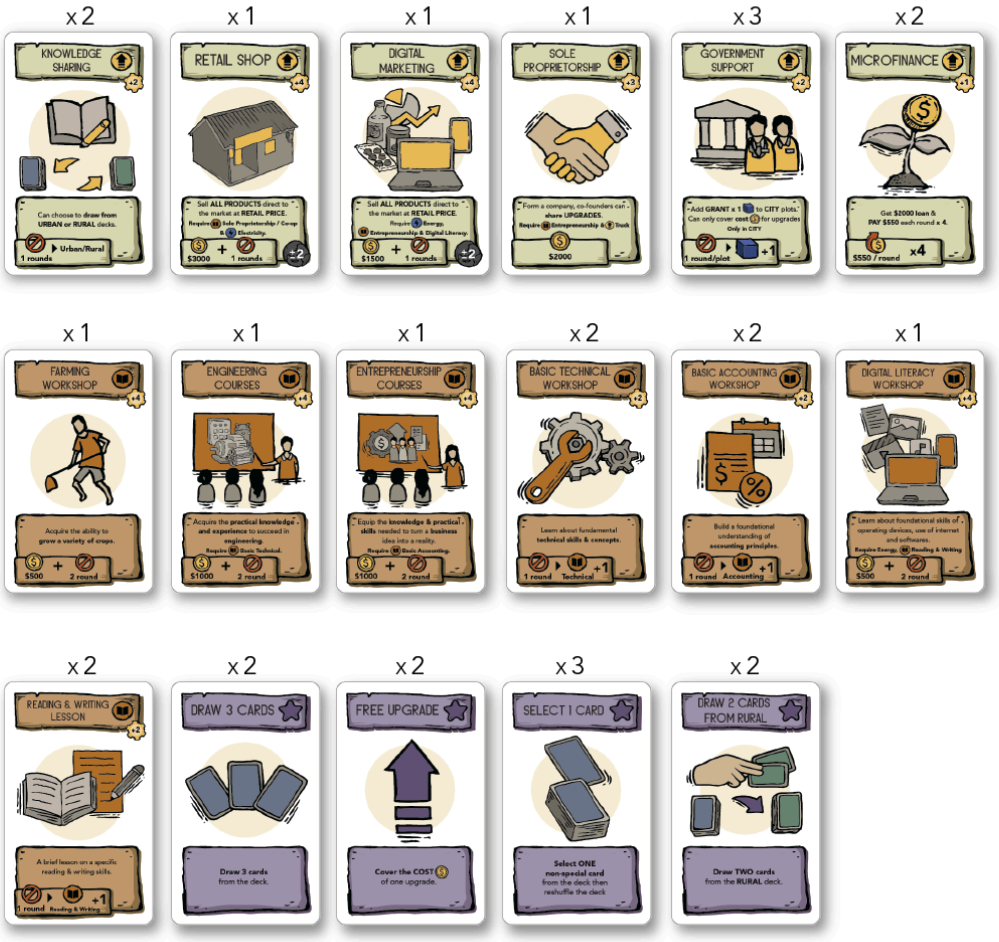



File Name: MAIN_Components_210mmx297mm.pdf

| EVENTS | Page Number | Quantity |
|---|---|---|
| Insurgency | 2 | 1 |
| Food Crisis | 3 | 1 |
| Pandemic | 4 | 1 |
| Air Pollution | 5 | 1 |
| Water Pollution | 6 | 1 |
| Tax Hike | 7 | 1 |
| Fuel Price Hike | 8 | 1 |
| Rock Fall | 9 | 1 |
| Strong Wind | 10 | 1 |
| Earthquakes | 11 | 1 |
| Typhoon | 12 | 1 |
| Flood | 13 | 1 |
| Drought | 14 | 1 |
| Wildfires | 15 | 1 |
| Plant Diseases | 16 | 1 |
| El Nino | 17 | 1 |
| La Lina | 18 | 1 |
| Pests | 19 | 1 |
| Storm | 20 | 1 |
| Power Failure | 21 | 1 |
| Water Shortage | 22 | 1 |
| Landslide | 23 | 1 |
| Good Weather | 24 | 1 |
| Light Rains | 25 | 1 |
| Bumper Harvest | 26 | 1 |
| Stable Politics | 27 | 1 |
| Food Surplus | 28 | 1 |
| Fuel Price Drop | 29 | 1 |

## "Urban" Cards x 80 (41 types - 55mm x 85mm)






File Name: MAIN_Components_210mmx297mm.pdf

| URBAN | Page Number | Print Quantity |
|---|---|---|
| Power Grid | 31 | 2 |
| Micro-Hydro Power | 32 | 2 |
| Diesel Generator | 33 | 2 |
| Concrete Road | 34 | 2 |
| Dirt Road | 35 | 2 |
| Community Water System | 36 | 2 |
| Water Grid | 37 | 2 |
| Maize | 38 | 3 |
| Cacao | 39 | 3 |
| Fruits | 40 | 3 |
| Corn Milling Machine | 41 | 2 |
| Dehydrator Machine | 42 | 2 |
| Carpentry Machine | 43 | 2 |
| Powdering Machine | 44 | 2 |
| Motorcycle | 45 | 2 |
| Truck | 46 | 2 |
| Training Centre | 47 | 1 |
| Agro-Processing Centre | 48 | 1 |
| Health Center | 49 | 1 |
| Health Insurance | 50 | 2 |
| Intensive Farming | 51 | 4 |
| Odd Jobs | 52 | 3 |
| Employment | 53 | 2 |
| Work From Home | 54 | 2 |
| Knowledge Sharing | 55 | 2 |
| Retail Shop | 56 | 1 |
| Digital Marketing | 57 | 1 |
| Sole Proprietorship | 58 | 1 |
| Government Support | 59 | 3 |
| Microfinance | 60 | 2 |
| Farming Workshop | 61 | 1 |

| | | |
|---|---|---|
| Engineering Courses | 62 | 1 |
| Entrepreneurship Courses | 63 | 1 |
| Basic Technical Workshop | 64 | 2 |
| Basic Accounting Workshop | 65 | 2 |
| Digital Literacy Workshop | 66 | 1 |
| Reading & Writing Lesson | 67 | 2 |
| Draw 3 Cards | 68 | 2 |
| Free 1 Upgrade | 69 | 2 |
| Select 1 Card | 70 | 3 |
| Draw 2 Cards From Rural | 71 | 2 |

## "Rural" Cards x 80 (28 types - 55mm x 85mm)

File Name: MAIN_Components_210mmx297mm.pdf

| RURAL | Page Number | Print Quantity |
|---|---|---|
| Dirt Road | 73 | 3 |
| Community Water System | 74 | 3 |
| Diesel Generator | 75 | 3 |
| Maize | 76 | 6 |
| Cacao | 77 | 6 |
| Fruits | 78 | 6 |
| Tiger Grass | 79 | 8 |
| Reforestation | 80 | 1 |
| Agroforestry | 81 | 1 |
| Forest Management | 82 | 2 |
| Intercropping | 83 | 4 |
| Traditional Remedies | 84 | 2 |
| Motorcycle | 85 | 3 |
| Transportation Service | 86 | 2 |
| Logging | 87 | 2 |
| Odd Jobs | 88 | 3 |
| Sari-sari Store | 89 | 3 |
| Ecotourism | 90 | 2 |
| Women Association | 91 | 2 |
| Community Seed Bank | 92 | 2 |
| Co-op | 93 | 1 |
| Basic Technical Workshop | 94 | 2 |
| Basic Accounting Workshop | 95 | 2 |
| Reading & Writing Lesson | 96 | 2 |
| Draw 3 Cards | 97 | 2 |
| Free 1 Upgrade | 98 | 2 |
| Select 1 Card | 99 | 3 |
| Draw 2 Cards From Modern | 100 | 2 |

## **Market Board** (190mm x 252mm)

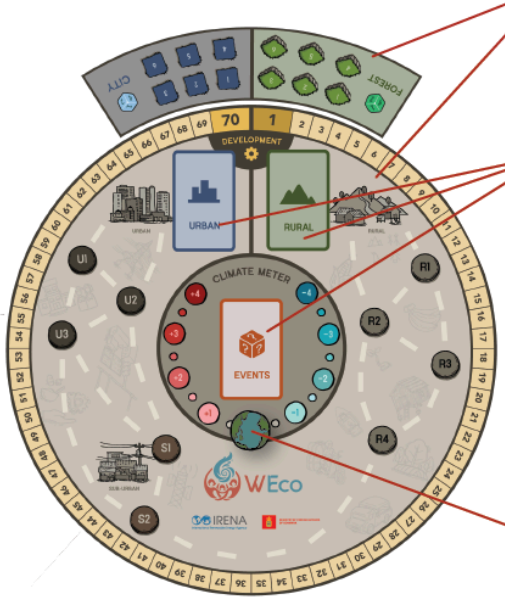
190mm

252mm

| PRODUCE / PRODUCT | MIDDLEMAN | WHOLESALE | RETAIL |
|---|---|---|---|
| Grass | 10 | 30 | 50 |
| Maize | 20 | 60 | 90 |
| Fruit | 20 | 80 | 120 |
| Cacao | 40 | 100 | 150 |
| Tree | 50 | 200 | 400 |
| Broom | 50 | 100 | 200 |
| Food | 50 | 100 | 200 |
| Dried Fruit | 100 | 200 | 400 |
| Tablea | 200 | 400 | 800 |
| Furniture | 250 | 500 | 1000 |

File Name: MAIN_Market_Board_190mmx252mm.pdf

**Setup:**




## 1 Setup the game boards

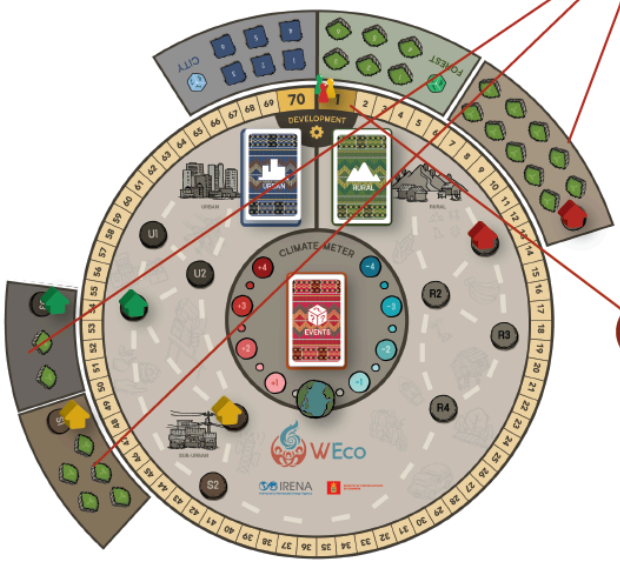
Place 2 of the Land Boards (CITY & FOREST) at the top of the Main Board.

## 2 Place the cards

Shuffle and place the Event Cards face down at the center; Urban and Rural Cards under the Development section.

## 3 Climate Meter Token

Place the Climate Meter Token at the "0" marking of the Climate Meter.




## 4 Number of Players

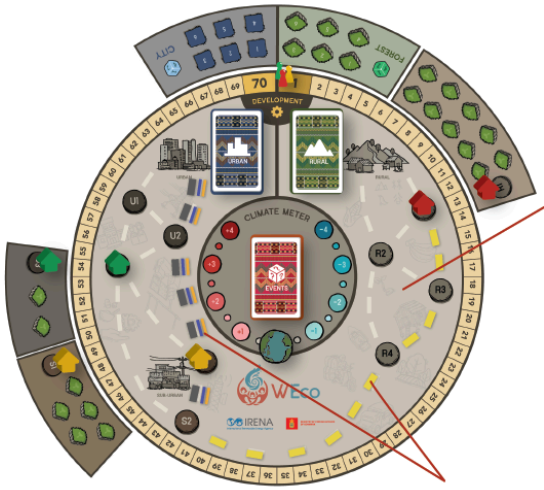
The Main Game accommodates 3 to 6 players. For instance, in a three-player game, each player selects a land and a role, then arranges their Land Boards around the Main Board. Each Land Board corresponds to a specific area on the Main Board based on its label. Players can mark their land using the House tokens.

## 5 Development Score

All Player Tokens start at the beginning of the Development Score track. Players move their tokens along the track based on the points they earn, showing their development progress.

## 6 Game Setup

Players can choose different game setup to play the game.



### A. Basic Mode

In Basic Mode, players in the rural area don't have the access to electricity and water compare to sub-urban and urban area. To unlock more advanced development, they'll need to construct basic infrastructures like water systems or electricity supply.

### B. Customize Mode

Players can decide their own setup to address different issues or simulate real-life challenges. For example the setup can reflecting various stages of their Micro-Hydro Power (MHP) development (either Implementation or Productive End Use). In the Productive End Use stage setup, the community already has electricity and water access, but limited access to markets, healthcare, and education due to poor road conditions.

Use the Infrastructure Tokens
to set up different stages of development

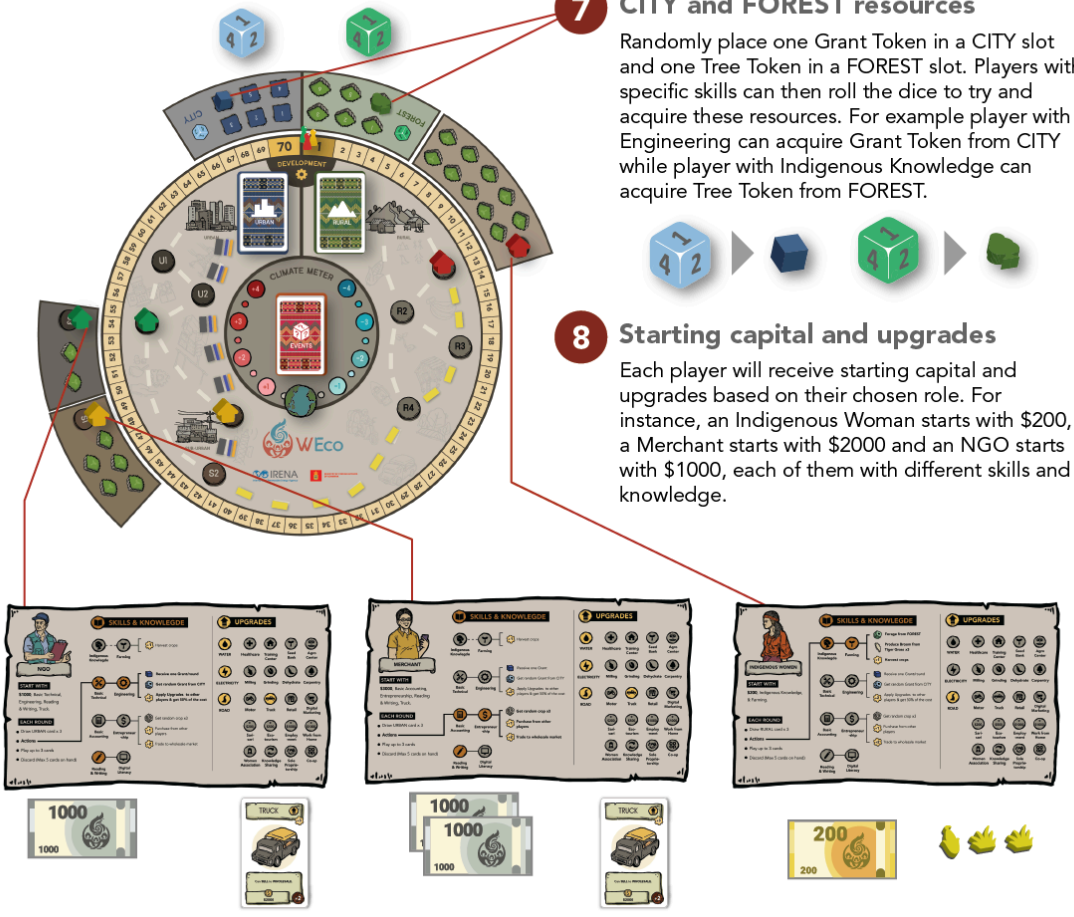
## 7 CITY and FOREST resources

Randomly place one Grant Token in a CITY slot and one Tree Token in a FOREST slot. Players with specific skills can then roll the dice to try and acquire these resources. For example player with Engineering can acquire Grant Token from CITY while player with Indigenous Knowledge can acquire Tree Token from FOREST.



## 8 Starting capital and upgrades

Each player will receive starting capital and upgrades based on their chosen role. For instance, an Indigenous Woman starts with $200, a Merchant starts with $2000 and an NGO starts with $1000, each of them with different skills and knowledge.



## Part 1: Introduction and Setup

**Objective:** To introduce the game's core concepts and facilitate a smooth setup.

**Instructions:**

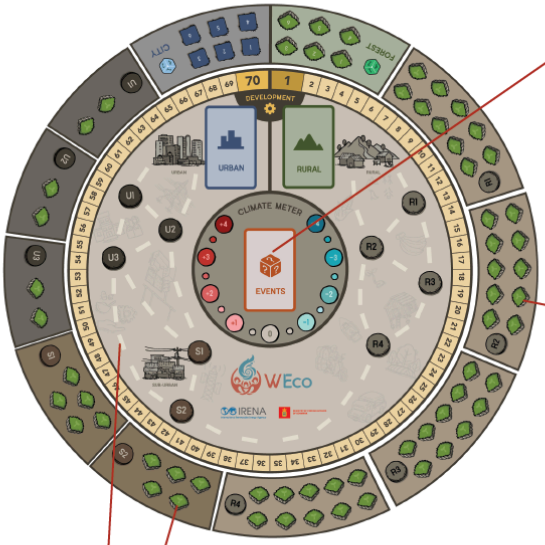
1. Begin with a brief introduction that sets the stage. Explain that the game is a narrative about how a community's choices—particularly those of indigenous women—can lead to profound social change and sustainable development.
2. Guide participants through the setup steps as outlined in the game instructions.
3. Help participants choose their game mode (Basic or Customize).
4. Ensure each participant understands their unique role and starts money. Emphasize that while they have different advantages, success depends on collaboration.
5. Explain the three main actions: **Production, Trade, and Development**.
    1. **Production:** Use the "Farming" skill to plant crops on your land. These crops produce **Crop Tokens** which can be stored, processed into more valuable goods, or sold.
    2. **Trade:** Buy, sell, or barter goods with other players. If you have the "Entrepreneur" skill, you can also access the wholesale market. The market board provides pricing suggestions, but the final trade price is always negotiable.
    3. **Development:** Spend resources to play **Development Cards** and upgrade your skills, infrastructure, or machinery. This improves your capabilities and moves you along the path of progress.

**Facilitator's Notes:**

- Frame the game as a journey of **"evolutionary change"** and **"collective action."** Highlight is that the game isn't just about winning points; it's about experiencing the process of empowerment.

- Encourage participants to lean into their roles but remind them that collaboration is the key to success. The research shows that a single person, no matter how skilled, is not as strong as a unified group."

- If participants choose customize mode, explain that it can reflect a real-life scenario where the community had to overcome specific challenges.



## DEVELOPMENT

To improve their skills, infrastructure, machinery, or agriculture, players can spend resources and money to play Development Cards. These upgrades are then positioned using tokens in the appropriate slots on each player's board and main board.

## EVENT

Each round begins with drawing a random Event Card. The Climate Meter will then modify its effects, either amplifying or reducing them, for all players during that round.

## PRODUCTION

Players can place Crop Cards in land slots, which then yield Crop Tokens based on their type. These Crop Tokens can be stored, processed, or traded.

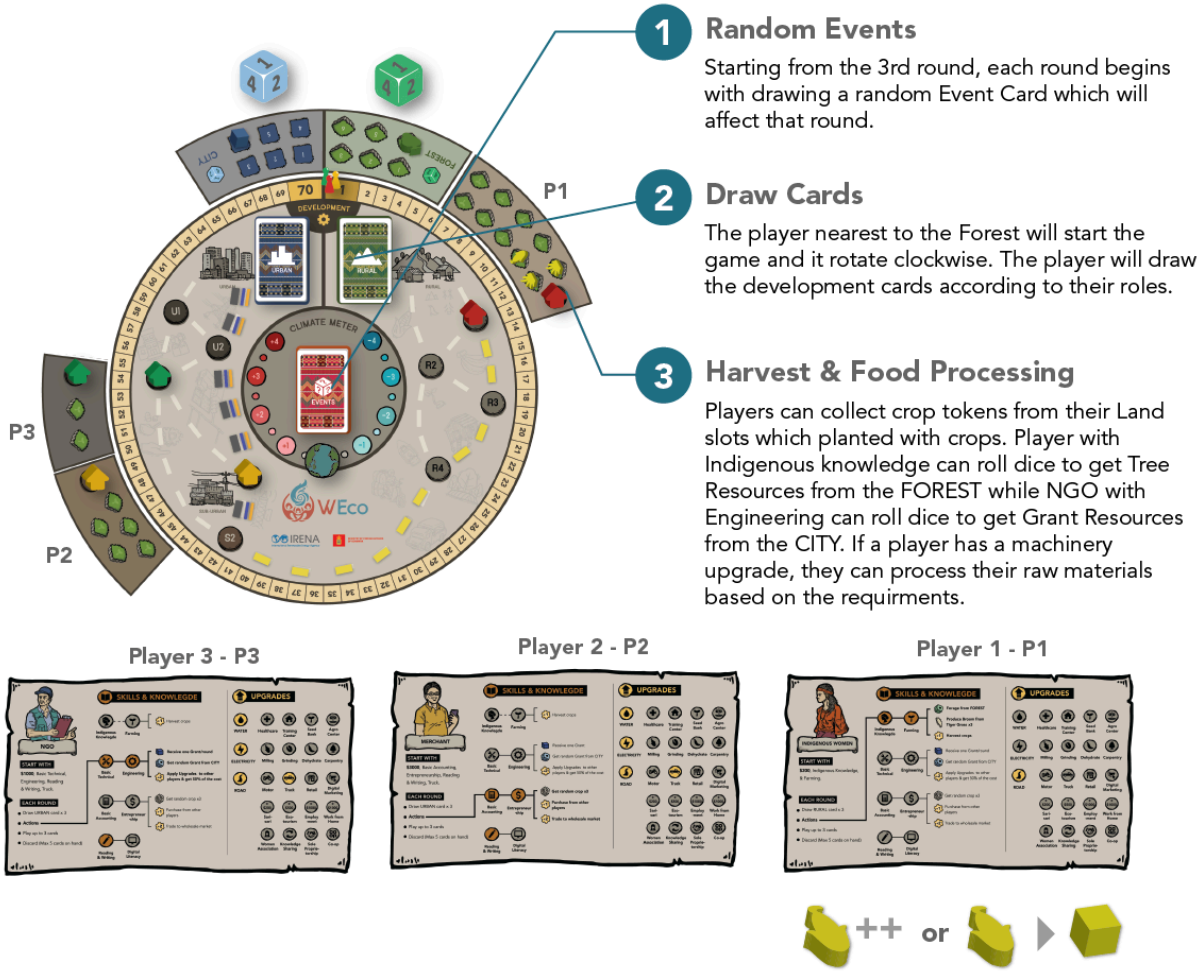
## TRADE

Players can sell their produce, buy goods, or barter (exchange) with other players. While the Market provides guidance on trading prices, the final price is always negotiable between players.

## Part 2: Gameplay and Strategic Guidance

**Objective:** To guide participants through the game rounds, linking their decisions to the research's core findings.

**Instructions:**

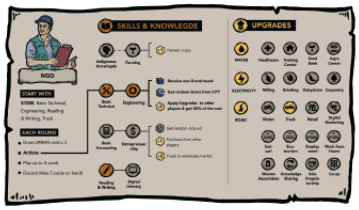


## 4 Trade

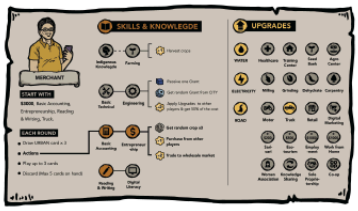
Without any upgrades, players can only wait for the Merchant to purchase thier goods at the lower middleman price. Only the Merchant, or players who have acquired specific upgrades, are allowed to sell goods directly to the Market. All baseline prices are listed on the Market Board, but players are always free to negotiate prices among themselves.

| PRODUCE / PRODUCT | MIDDLEMAN | WHOLESALE | RETAIL |
|---|---|---|---|
| Grass | 10 | 30 | 50 |
| Maize | 20 | 60 | 90 |
| Fruit | 20 | 80 | 120 |
| Cacao | 40 | 100 | 150 |
| Tree | 50 | 200 | 400 |

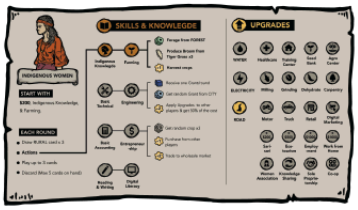
Player 3 - P3

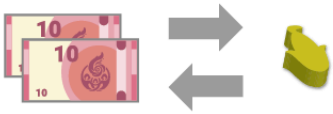



Player 2 - P2




Player 1 - P1



## 5 Play the cards

There are **FIVE** types of Development Cards, and players can choose one card of each type per round (up to a maximum of four cards total). Each card has its own cost, requirements, and special ability. Once played:

Crops are placed on the Land Slots with the respective Crop Tokens.

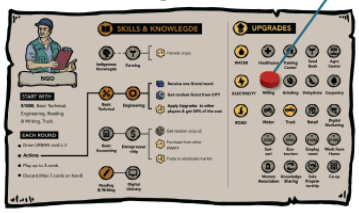
Infrastructures are placed on the Path with the Infrastructure Tokens

Upgrades are placed on the Upgrade Slots with the tokens.

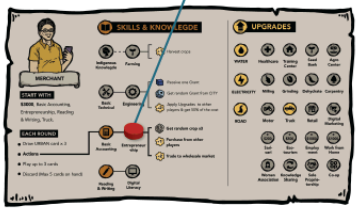
Skills are placed on the Skill Slots with the tokens.

Special Cards can be played directly.

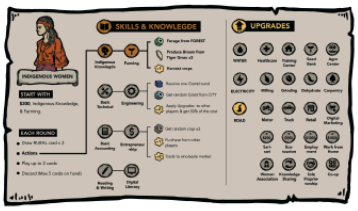
Player 3 - P3




Player 2 - P2




Player 1 - P1



## 6 End of turn

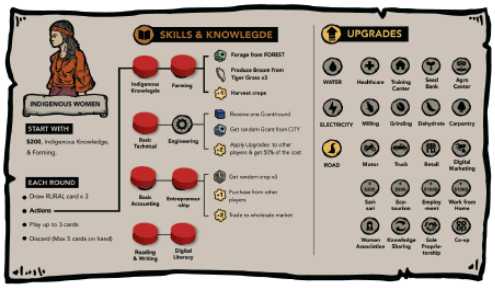
At the end of each turn, players can only hold a maximum of 8 cards. Any extra cards must be discarded and placed at the bottom of their respective decks.

## 7 HOW TO WIN

The game ends as soon as a player hits the 70+ mark on the Development Score Track.

To determine the winner, each player's final score is calculated by adding their Development Score (First player get additional +10 points), their money converted to points (1 point per $100), and their Skill Upgrade points (5 points each). **The player with the highest total score wins.**

**EXAMPLE:**




| | |
|---|---|
| **Development Score =** | **70 points + 10 points** |
| **$3000 Money =** | **30 points ($3000/100)** |
| **7 x Skills =** | **35 points (5 points x 7)** |
| **TOTAL SCORE =** | **145 points** |

Players can also define their own game goals, ranging from short-term to long-term objectives.

**Facilitator's Notes:**

- Point out that in the early stages, "Farming" is a basic survival skill, but as they acquire MHP and other modern developments, they can produce more valuable goods. This reflects the finding that **access to reliable electricity is essential for economic empowerment**. It allows indigenous women to move from subsistence farming to income-generating activities.

- As players engage in trade, remind them that the price is negotiable. This simulates the real-world challenge of achieving **equitable market access**. Encourage players to form partnerships or cooperatives, as the research shows these new social formations empower women and give them a stronger collective voice, even in economic matters. The game allows them to **gain a voice in decision-making** and **challenge stereotypes** of being confined to the household.

- Draw their attention to the interplay between **Event Cards** and the **Climate Meter**. This shows that development has an environmental impact, and that sustainable development requires balancing modern needs with traditional wisdom, as the Lubas women did with their watershed conservation plan.

- This game encourages players to explore diverse possibilities through collaboration, rather than competition. Encourage players to negotiate trade prices, transportation, knowledge sharing, land use, partnerships, and more, maximizing limited resources for mutual benefit.

- Set different game goals to simulate real-life challenges. For example:

    - Financial goals (reaching a collective capital target)
    - Sustainability goals (surviving a set number of rounds)
    - Social goals (ensuring all villagers acquire specific knowledge)
    - Development goals (develop a MHP system, forming a cooperative and achieving a revenue target)

## Part 3: Debrief and Reflection

**Objective:** To lead a discussion that connects the in-game experience to the real-world lessons learned.

**Instructions:**

1. After the game ends, everyone gathers for a debriefing session.
2. Start by asking open-ended questions about their experience.
3. Use the following points to facilitate the discussion, focusing on the social changes observed.

**Facilitator's Notes:**

- **Empowerment:** Ask the participants who played as indigenous women, "How did your role evolve throughout the game? When did you feel most empowered?" This links to the research finding that **self-confidence grows as women successfully take on new roles**.
- **Collaboration vs. Competition:** Ask the whole group, "Did you find that collaboration helped you more than competition? Can you give an example?" This reinforces the finding that **collective action** is key to success, as demonstrated by the Lubas women's ability to solve problems together and with other community associations.
- **Role of Other Players:** Ask the participants who played as the NGO, indigenous women, or merchants, "How did your decisions impact others? What role did you play in either empowering or hindering their development?" This prompts a discussion on how external stakeholders can be either barriers or allies to social change.
- **Final Thoughts:** Conclude by reiterating the key message: the project's success is not just about physical infrastructure. It's about building **human and social capital** and creating a community where every member, especially women have the opportunity to lead and thrive. The women's journey in this simulation reflects their real-world path to **recognitional justice** and **leadership**.