Technical Assistance Support for the R&D policy reform agenda (Subprogram 2) of the Policy Based Loan for the Philippines on Climate Change Action Program (CCAP)

Training workshop on Participatory Prospective Analysis (PPA)

With the case of Upper Marikina River Basin Protected Landscape (UMRBPL)

Alabang, Philippines, July 23 to July 25, 2025

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A. Introduction

1. Contexte

Context of the project

The Philippines is particularly vulnerable to climate change, with noticeable changes adversely affecting the country's agriculture (crops, livestock, fisheries) and natural resources (forests, soils). These have resulted in increasing damage and losses on the agriculture, fisheries and forest sector. The upward as well as the midstream and downstream segments of the agri-based value chains are adversely affected too. An increased R&D budget, along with appropriate extension services, is essential for adapting to and mitigating the adverse impacts of climate change on the agricultural sector.

During Climate Change Action Program (CCAP) Phases I and II, the French Development Agency (AFD) provided technical assistance through support for R&D policy reforms and the implementation of climate-smart technologies and practices for high-value crops. This technical assistance highlighted the need to increase R&D budgets within the agriculture and fisheries sectors and identified five innovative research projects on banana genetics, aquaculture, mango resilience, biomass valorization and recycling, and sugarcane resilience of Agriculture and Fisheries (A&F) sector. The French Agricultural Research Centre for International Development (CIRAD), in collaboration with the University of the Philippines in Los Baños Foundation, Inc. (UPLBFI), provided this R&D technical assistance to Department of Agriculture (DA), leveraging their extensive experience in applied research and in-depth knowledge of climate-resilient agriculture. This technical assistance aims to assist the Philippine Department of Agriculture and Department of Natural Resources in meeting their policy commitments under Reform Area 2 (Building Resilience to Climate Impacts) of Subprogram 3 (2024-2026) of the Philippine Climate Change Action Program (CCAP), which is co-financed by AFD, JICA and ADB.

Context of the workshop

From July 23 to 25, 2025, a training workshop on Participatory Prospective Analysis (PPA) was held at the Bellevue Hotel in Alabang, Metro Manila. Alabang is located in the Manila metropolitan area between Manila and Los Baños. We had access to excellent facilities, including equipment, video projection and whiteboards. We were fortunate to have the support of a facilitator who helped facilitate practical exercise, keep the participants energized throughout the three days and was responsible for the evaluation phases. We were also supported by a dynamic team from UPLB who took care of the logistics. Finally, we would like to thank the participants for their commitment.

The workshop took place amid dramatic circumstances in the Philippines, with hundreds of thousands of families having to seek refuge in shelters due to two typhoons, i.e., Dante and Emong (international names, Co-May and Francisco, respectively). Some participants were unable to travel as parts of the city were flooded, and the government had asked officials to stay home. Nevertheless, we attracted sufficient participants and regret that our colleagues from Department of Environment

and Natural Resources -Forest Management Bureau (DENR-FMB) were unable to attend due to the weather conditions. Fortunately, we had planned to accommodate all participants in this hotel, meaning that the training could go ahead despite the government not recommending travel.

The workshop is part of the technical assistance component 1, which is supported by the French Development Agency (AFD) and implemented by the French Agricultural Research Centre for International Development (CIRAD) and the UPLB Foundation, Inc., through the UPLB Interdisciplinary Studies Centre for Integrated Natural Resources and Environmental Management (UPLB-INREM). The initiative supports the Department of Environment and Natural Resources (DENR) and the Department of Agriculture (DA) in achieving their climate action goals under Subprogram 3 (2024–2026) of the Climate Change Action Plan (CCAP).

2. Background and rationale

The aim of this training is to apply the Participatory Prospective Analysis (PPA) approach to the management of the Upper Marikina River Basin Protected Landscape.

Organized by CIRAD & UPLB, the three-day workshop brought together 18 people, including experts from DENR Biodiversity Management Bureau (BMB), DA-Bureau of Agricultural Research (BAR), SEARCA, and UPLB. Two colleagues from UPLB are in charge of the mango research with Julien Sarron of CCAP TA, component 2. The objective of the training was to share with participants the tools and concepts of anticipation. The training was scheduled to take place over three days and should enable implementation in the following months in the Upper Marikina River Basin Protected Landscape (UMRBPL) region. The training alternated between theoretical parts on the tools and practical application phases.

We had a set of training tools, PowerPoint presentations and films from a CIRAD collective led by Robin Bourgeois, following 10-day training courses held at CIRAD in Montpellier in 2023 and 2025, which we ourselves had attended. We are very grateful to our colleagues in this CIRAD group, of which we have been members since the training courses in Montpellier. Before the training course in Alabang, we drew on this material, taking into account our objective and time constraints. We organized the training course as follows:

- On the first day, we presented some general concepts of anticipation, with a particular focus on PPA. In the morning, we presented conceptual frameworks from future studies. In the afternoon, we introduced the theory of participatory prospective analysis (PPA) (see Appendice 4).
- The second day was dedicated to practical exercises on the PPA, applied to the Upper Marikina River Basin Protected Landscape (UMRBPL). In the morning, we defined the system using the UMRBPL example and then defined factors of change with the participants. We then identified three driving forces and completed a structural analysis exercise, resulting in a scenario frame and narrative (see Appendice 5).
- On the third day, we presented multiple anticipation tools that can be combined with PPA: visioning, backcasting, the triangle of futures, and the three horizons. We did a practical exercise on the three horizons in relation to the future of the UMRBPL. In the afternoon, we presented the wheel of futures and did a practical exercise on the possible future effects of carbon credits for the management of UMRBPL Park (see Appendice 6).
- At the end of each day, an evaluation was carried out, and at the end of day 3, a more in-depth discussion was held to assess the participants' interest in these foresight tools (see Appendice 3).

B. Anticipation as a culture and discipline (day 1)

Our objective was to enable participants to mobilize the future not only through the use of dedicated tools, but also through an understanding of the different ways of using the future according to different contexts and objectives.

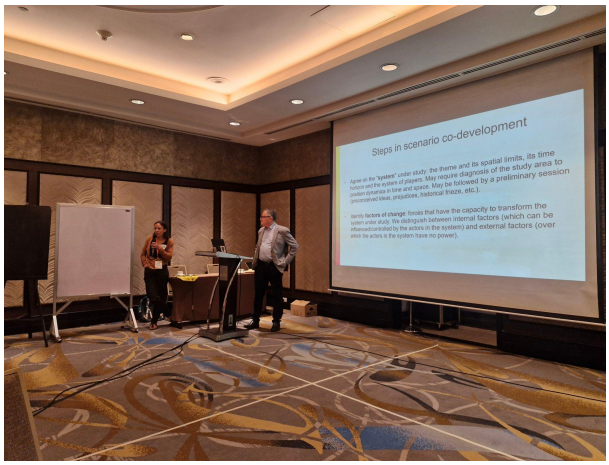
On the first day, we began with an opening address by Dr John Pulhin, Director of the UPLB INREM. He thanked the participants for choosing to attend the training despite the typhoons and the government offices being closed. Dr Pulhin then explained the context of the workshop as part of Phase 3 of the Technical Support Program, which is a collaboration between the French and Philippine governments through CIRAD.

We then organized an exercise in which participants had to place themselves on two axes according to their perception of the future: how certain or predictable they thought it was, and their perceived capacity to change it. They were then asked to discuss and explain their position. This conceptual framework[1] was later discussed and used throughout the workshop as a grid for interpreting different approaches to the future.

In the morning, we introduced precise concepts and definitions that facilitated the training. For example, we defined a scenario as "*a representation of the future connected to a representation of the present*". We discussed how we anticipate and how the future can be used. Anticipation can be seen as a discipline that allows us to question how humans anticipate, the nature of their anticipatory systems and their integrated "predictive" models, and the use made of anticipation.

A short film was shown to introduce the PPA method, which was then explored in more detail throughout the afternoon of day 1.

Facilitation of the morning predictability/agency exercise in the morning by Ms. Janet Martires



Presentation of the PPA steps in the afternoon.

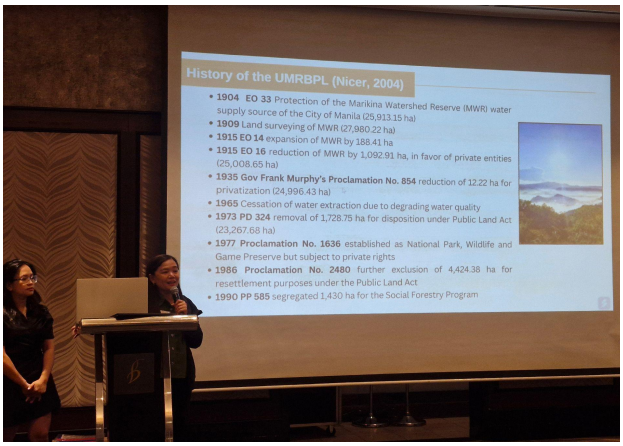
[1] Minkkinen M, Auffermann B, Ahokas I. Six foresight frames: Classifying policy foresight processes in foresight systems according to perceived unpredictability and pursued change. Technological Forecasting and Social Change. 2019.

C. Putting the PPA into practice (Day 2)

On day 2, we spent the whole day putting the PPA into practice step by step. We began with a presentation on the UMRBPL by Ms Liezl Grefalda and Ms Ma Louiella Catudio, who are both conducting research in this field. Participants then applied this methodological framework to the future of the UMRBPL by: (i) defining the system (i.e. questions, area, timeline and stakeholders); (ii) identifying factors of change and driving forces; (iii) constructing a morphological table to define the future states of the driving forces; and (iv) constructing a scenario frame and its associated narrative.

Due to the limited time available (just one day instead of the typical three to ten days), the objective was not to conduct a comprehensive analysis, but rather to provide participants with hands-on experience of this methodology. We therefore had to simplify each step to fit within this timeframe. We identified around 20 factors of change and selected 12 of these so that we could quickly analyze their influence and dependence to identify three driving forces. We then created a single plot with a single narrative.

It was therefore a day involving a lot of interaction between participants. They were able to carry out the process themselves, thus gaining a better understanding of the steps and associated vocabulary. This resulted in participants evaluating their own learning more positively at the end of day 2 than at the end of day 1.



Presentation of the UMRBPL context.

Practical exercises.

D. Adapting the PPA and other tools for exploring the futures (day 3).

By the end of Day 2, participants were wondering how to implement the PPA, particularly when they didn't have much time. They realized that completing all these steps could take one or more weeks. Fortunately, we had planned a presentation and discussion on how this methodology could be adapted to the constraints of the field. We began by presenting how the PPA should normally be implemented and that could take several weeks, which is possible when resources are available and participants are willing to invest their time; preparatory steps with resource persons are also necessary to prepare for such a process. This depends on the context of the question asked. We then showed concrete examples of PPAs carried out in the field in three days, tips for shortening certain steps, and the associated tools used.

A variety of other anticipation tools were presented (Futures triangle, visioning and backcasting, Three Horizons, Futures wheel). Together with the participants, we selected two topics for practical exercises: the future of the UMRBPL, which we explored using the 'three horizons' method; and the future effects of a carbon credit system to support UMRBPL management, which we discussed using the Futures Wheel method in the afternoon.

Results of one Futures wheel.

End of the workshop and participants' feedback

E. Participants' perceptions of the training

As the training came to an end, the trainees were asked to share their thoughts and impressions of the training, as well as what they had learned. The key messages were:

- The PPA partially overlaps with other participatory diagnostic or anticipation methodologies that participants have previously used. However, participants recognized the advantages of using the PPA: its structure enables a systematic view of the issue, encourages out-of-the-box thinking, and acknowledges future uncertainty. Participants also pointed out that the time constraint can be challenging, as it involves committing 3 to 10 days for all stakeholders.
- Participants recognized the potential of the PPA to facilitate participatory processes, particularly for the Community-Based Resource Management Plan (CBRMP) in Upper Marikina, as well as in other landscapes. Some participants proposed running their own PPA workshops for research purposes, or for planning activities or programs within their offices or inter-agency programs. In particular, the training was very timely for SEARCA, as they are currently tasked with developing their next 5-year plan.

F. Results and conclusion

In conclusion, we consider this training to have been a success, as it achieved our initial goals:

1. enable participants to gain autonomy in using a set of tools to explore the future(s) and understand their use and implications;
2. gather information on the UMRBPL (see Appendix 6), the major issues regarding its management, and the possible implementation of carbon credits;

3. and bring together people from different backgrounds and institutions to discuss these issues and create networking and collaboration opportunities.

The participants obtained results that enabled them to understand the process. This was purely educational and limited by the available time. The results included graphs for analyzing factors of change and selecting driving forces, as well as a morphological table with only three driving forces. Normally, we would want twice as many in order to construct more consistent narratives and scenarios (see appendice 5).

Figure 1: Graphs to help selecting driving forces

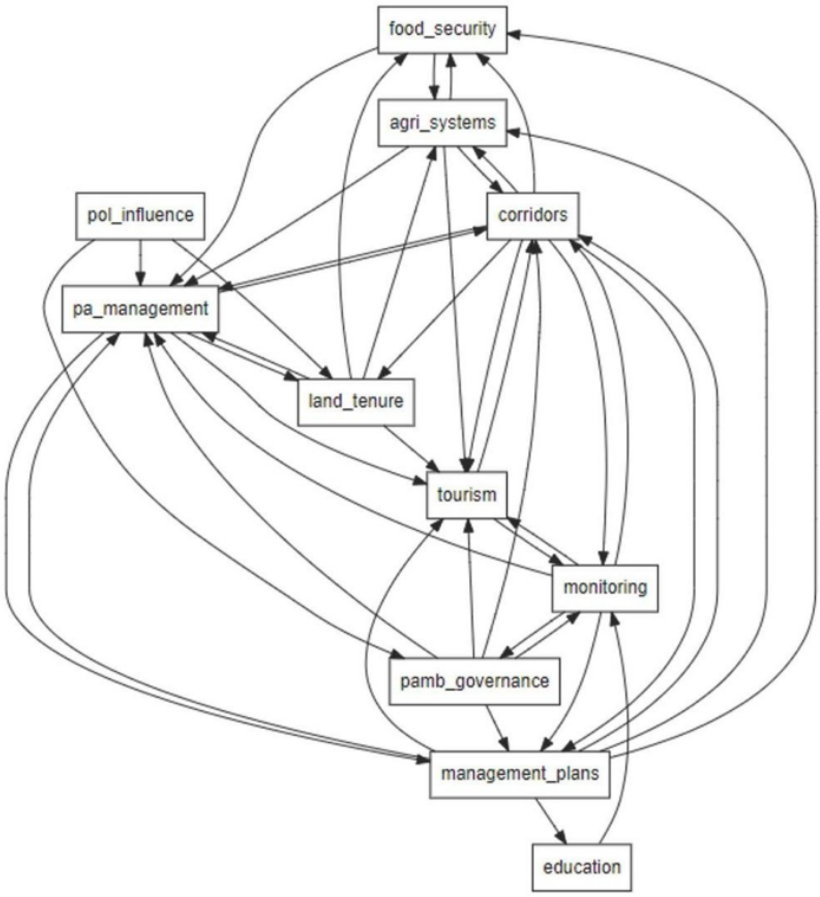
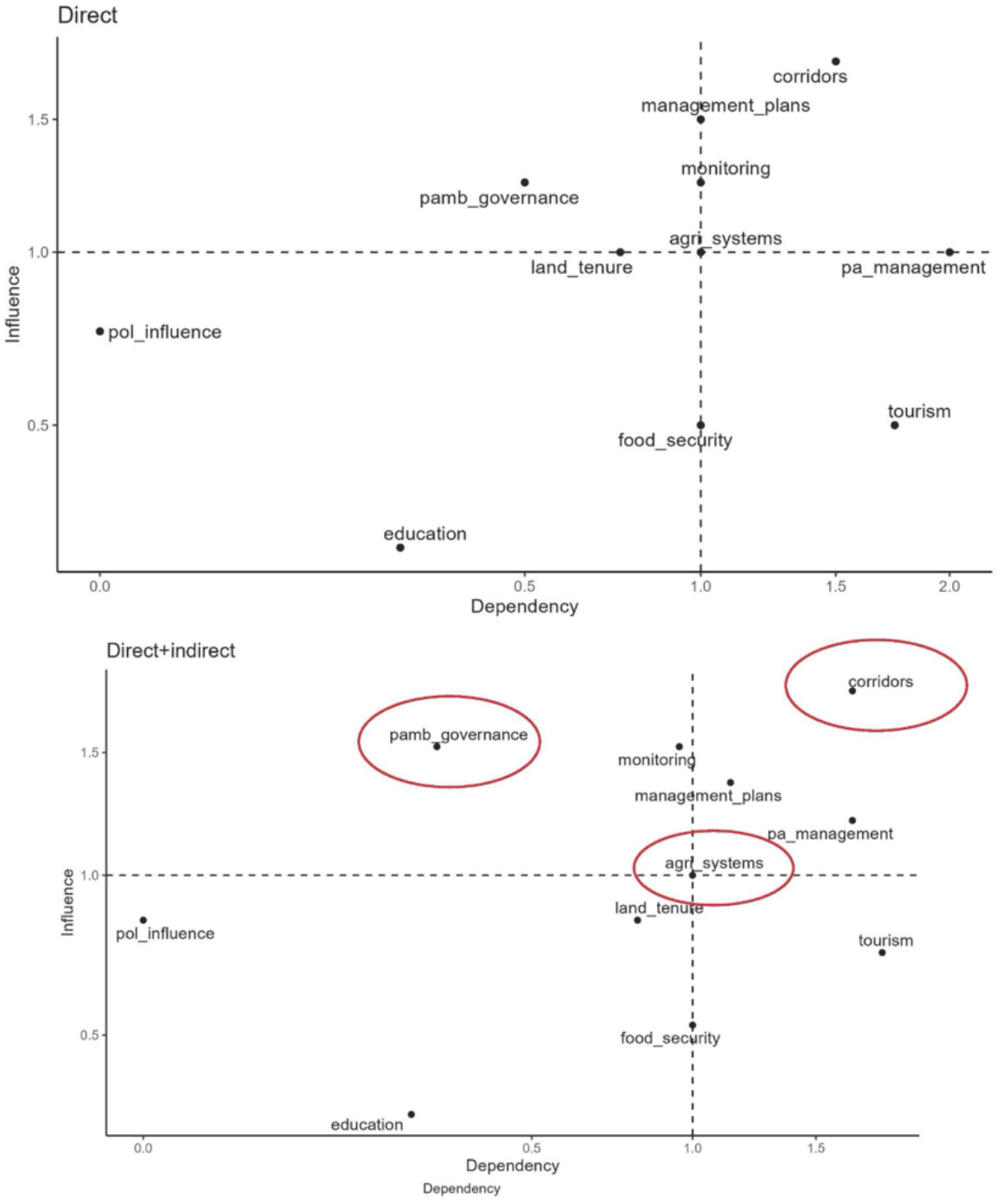
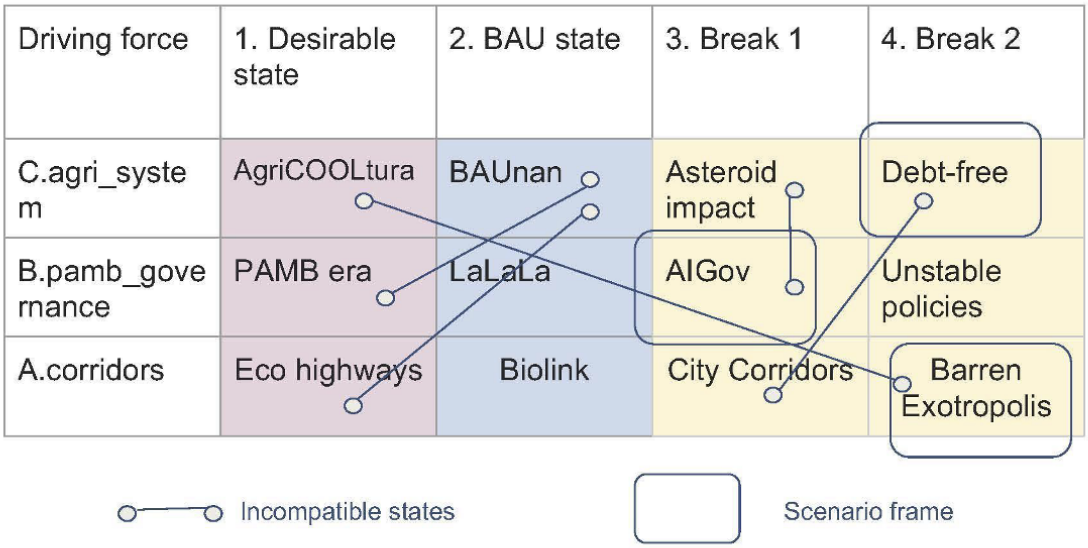


Figure 2: Morphological table for training purpose, showing the futures states of driving forces





Participants in Alabang identified also around 20 factors for change, which will form the basis of discussions with local participants at UMRBPL. These UMRBPL participants will then be able to remove some factors and add others. Our aim is to end up with 40–60 factors for change at UMRBPL level. This brings us to the next stage.

The next steps for the CCAP project are to apply the PPA method with the help of some of the Alabang trainees: to the future of the UMRBPL (with local communities) and, potentially, to the mango sector (component 2 of the project). Participants from the DA and DENR have also expressed interest in using these tools for other issues.

G. Appendices

Appendix 1 List of participants

	NAME	DESIGNATION	ORGANIZATION	Email
1	Dr. Juan Pulhin	Professor and Founding Director	UPLB-INREM	jmpulhin@up.edu.ph
2	Ms. Anna Gale Vallez	Program Specialist	SEARCA	agcv@searca.org
3	Mr. Kyle Vincent Singson	University Research Associate	UPLB-INREM	krsingson@up.edu.ph
4	Mr. Archie Tulin	Graduate Student	UPLB-CFNR	atulin@up.edu.ph
5	Ms. Beth Zaida Ugat	University Researcher	UPLB-INREM	bhugat@up.edu.ph
6	Ms. Ma Louiella Catudio	Project Researcher and Graduate Student	UPLB-INREM	mocatudio@up.edu.ph
7	Ms. Liezl Grefalda	Assistant Professor	UPLB - College of Forestry and Natural Resources (CFNR)	lbgrefalda@up.edu.ph
8	Dr. Johnrell Zuniega	Assistant Professor	UPLB - College of Agriculture and Food Science (CAFS)	jszuniega@up.edu.ph
9	Agatha Bedi		AFD	agathabedi@gmail.com
10	Mr. Elpidio Gelera Jr.	Senior Environmental Management Specialist	DENR-BMB	elpidio.gelera@bmb.gov.ph
11	Ms. Joy Alvarez	Senior Ecosystems Management Specialist	DENR-BMB	joy.alvarez@bmb.gov.ph
12	Mr. Gabriel Anthony N. Ferrer		DENR-BMB	gabriel.ferrer@bmb.gov.ph
13	Dr. Bong Salazar	Associate Professor	UPLB - College of Agriculture and Food Science (CAFS)	bmsalazar@up.edu.ph
14	Mr. Antoine Perrier	Graduate Student	CIRAD/AgroParisTech	antoine.perrier@cirad.fr
15	Philippe Guizol	Researcher	CIRAD	philippe.guizol@cirad.fr
16	Camille Piponiot	Researcher	CIRAD	camille.piponiot-laroche@cirad.fr
17	Ms. Marnelie Subong	Agriculturist	DA-BAR	msubong@bar.gov.ph
18	Ms. Janet Martires		**Yakap Kalikasan**	wangits65@gmail.com

Appendix 2 Training program

Technical Assistance Support for the R&D policy reform agenda (Subprogram 2) of the Policy Based Loan for the Philippines on Climate Change Action Program (CCAP)

Participatory Prospective Analysis (PPA)

Training 23 to,25 July 2025 - Bellevue Hotel - Alabang

Day 1 – July 23: The culture of future + PPA process

08:30 am	Welcome - registration of participants
09:00 am	Opening words
09:15 am	The culture of future 1
10:30 am	Coffee break
10:45 am	The culture of future 2. + Introduction to PPA
11:30 am	Video on PPA + Critical Uncertainty Matrices
12:15 am	Lunch break
01:15 pm	PPA: the process part 1
03:00 pm	Coffee break
03:15 pm	PPA: the process part 2
05:00 pm	End of the day

Day 2 – July 24: PPA implementation

08:30 am	Objectives of the day
09:00 am	System definition of Upper Marikina River Basin Protected Landscape (UMRBPL)
09:40 am	Factors of change for UMRBPL
10:30 am	Coffee break
10:45 am	Factors of change + structural analysis
12:00 am	Lunch break
01:00 pm	Driving forces and morphological table for UMRBPL
03:00 pm	Coffee break
03:15 pm	Synopsis
05:00 pm	End of the day

Day 3 – July 25: Other tools and next steps

08:30 am	Warm up
08:45 am	Other tools (back casting, future triangle)
10:30 am	Coffee break
10:35 am	Other tools (3 Horizons, wheel of future...)
11:30 am	Next steps: PPA implementation at local level
12:00 am	Lunch break
01:00 pm	Exercise - futures wheel with topic: "How would the implementation of carbon credits change the UMRBPL?"
03:00 pm	Coffee break
03:15 pm	Futures wheel for UMRBLP : conclusion
04:45 pm	Training evaluation
05:00 pm	End of the day

Appendix 3 Training evaluations by participants

By Janet Martires

There were four (4) forms of evaluation used during and at the end of the training, and the results are:

1. **Daily Evaluation** – called the training web, the Facilitator asked the participants to rate in a Likert's Scale eight different variables during the day, i.e., my participation, the materials used, the utility of the topics, my absorption of the lessons, time management, the methodologies used, the resource persons' handling of the topics, and food. This was used at the end of days 1 and 2 with results that show increasing scores from around 7 to 10 for each item from day 1 to day 2. The highest score went to the 'methodologies used' which already scored a highest average rating of about 8 on day 1 and 9-10 on day 2. While there were some individual learners who saw their participation low on day 1 (ex. 5-6), yet this jumped to 9-10 on day 2 because of the series of workshops and group discussions that transpired.

   It is good to note that all participants saw the match of the topics to their individual works as manifested by the consistent high scores for the item 'utility of topics' (about 7 on day 1 and 10 on day 2).

   With the results taken from days 1 and 2, it can be concluded that:
   - There was high learner acceptance of the lessons from the training. The exercises, RPs' expertise, and materials greatly helped in simplifying ideas.
   - low participation on day 1 was driven by the way the training flow was designed with day 1 for the conceptual sessions and day 2 for the actual practice.
   - Low participation does not necessarily equate with low absorption and understanding of the lessons because even with day 1's low participation, yet individual lesson absorption is still high.
   - Filipino middle managers level, younger age, both men and women, are oftentimes the more active ones during trainings. Practicum, structured learning exercises, and group interactions are their more preferred methodologies. The ratings for the methodologies are but a reflection of this fact.

2. **Recapitulation** - a review of the day 1 key points was conducted through a simple group exercise called 'Anagram". Each group was provided with a set of randomly jumbled letters resulting in the words: driving force, anticipation, and participatory. The groups explained the words they formed based on the previous day's discussions. The RPs gave their thumbs-up for every correct interpretation.

3. **End-of-training e-evaluation** – formulated on google form, the end-of training evaluation obtained honest answers from at least 12 learners about their learning,

suggestions for improvement, and use of the lessons back in their work stations. The key results of the evaluation are as follows:

a) New Topics during the day (3) for the participants – While this question focused on Day 3 only, about 50% of the learner-evaluators indicated learning all topics from day 1 to day 3. Others interestingly learned about the policies in PA management and the history and status of UMRBPL.
b) Most useful Topics - PPA was most popular and useful to the learners. One specifically mentioned, "the usefulness of 3 Horizon and Future Wheels tools not just for planning persons but more importantly to policy makers who might need to reflect on the needs and aspirations of the communities in their local context".
c) Topics needing improvement and suggestions for improvement – For most, there were no particular items in the training that needed improvement. Possibly resulting from the squeezed schedule of 3 days only, reactions and suggestions for improvement are:
    a. more emphasis and examples on the PPA tools and how to turn the results into actions
    b. more time for hands-on exercises
    c. additional topic like "participatory visioning strategies"
    d. More exercises for more learning
    e. More interactive activities to improve participation and recollection of the PPA concepts, tools, steps, and analysis
    f. General/global presentations can be made shorter. Hands-on practice made understanding easier.
    g. Activity or practice is best given after discussion of every step for better recall and execution in the workshop
    h. allocate more time for the training since the practical uses of the future-seeing tools deemed beneficial not just as a theoretical application but in actual use for reference in the visioning and writing management recommendations

d) Topics that remained unclear to the learners - The trainees felt hanging on some important matters like:
    a. on logistics for the conduct of PPA, such as some effective means in selecting 15-25 participants for PPA
    b. concerns related to UMRBPL
    c. practicing the "thinking-out-of the box"
    d. translating future desires into action
    e. defining driving forces
    f. go to the field for better understanding of the global frame

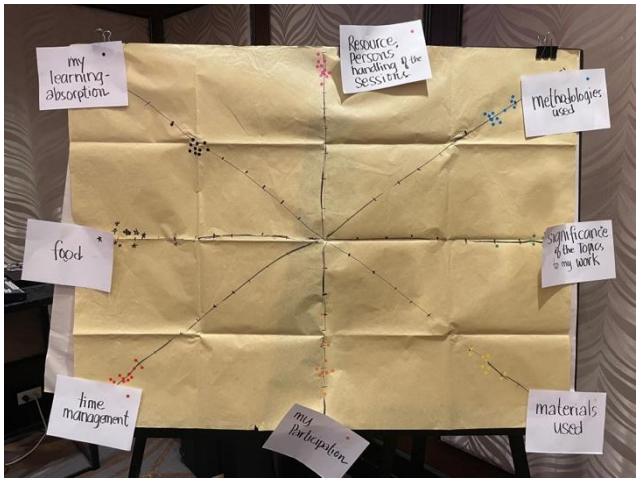
e) Realizations from the training - These are verbatim quotes of the responses of the participants:

a. Attending the training helped me deepen my understanding of how climate action can be incentivized through market-based mechanisms. I gained practical insights on how carbon credits can have consequence on or support social, technical, economic, environmental and political aspects of a protected area.
b. Think outside the box and not be contained only to the usual flow of things. There are many uncertainties that should still be considered and be prepared for, both personally and on consideration for the creation of significant policies and guidelines.
c. there are many ways to anticipate futures, and different choices to come up with your desired outcome/future
d. It is important to know what kind of future we want to achieve in order to have clearer project objectives
e. I realized that foresight tools like PPA and Future's Wheel help us move beyond reactive solutions. They allow us to anticipate potential challenges and opportunities, and craft strategies that are more resilient and adaptive. Moreover, I gained a deeper appreciation for collaboration. PPA emphasizes that the knowledge and perspectives of various actors as "experts" are all vital in shaping sustainable futures. It reminded me that no one has a monopoly on insight, and that meaningful change comes from working together toward a common vision.
f. futures thinking, visioning, and planning entails multi-sectoral engagement; it's not an easy process! Thanks to the organizers and facilitators!
g. Updating and/or new policies and programs, particularly on conservation work, are important to reflect on the needs and PPA tools are great means to do it.
h. some of the tools presented share similarities with tools used for participatory rural assessment of participatory coastal resource management, with slight difference in nomenclature, scope, and specific outputs or results
i. The use of PPA is nothing new; it just opens our minds to other tools that are useful for our roles as researchers and program implementers. I hope I/we can use/relate the tools learned from this training to agriculture as well.
j. There is a power in using the future to tailor the present to certain actions

4. **End-of-training verbal evaluation** - As the training was coming to its end, the trainees were gathered together in a circle and asked to honestly verbalize their thoughts, reflections and take-aways from the training, as well as their personal messages for the resource persons. With no particular names cited, here are the key messages of the learners:

- Our approach in PPA looks old school, hence, it is very useful for many, even when facilitating the Community-Based Resource Management Plan (CBRMP) of PACBRMA holders. It is useful not just for PAs but also for other landscapes.
- PPA is a unique approach in visioning, in identifying what we want to achieve. It is like a multiverse of futures. The process encourages us to think outside of the box, but in this training, we focused on UMRBPL.
- In this training, I found new friends and new learnings. PPA is a new learning to me, and I will consider this as a methodology in my research. I also learned about PA policies from our BMB friends. It was a good opportunity to share about UMRBPL.
- This is very timely for SEARCA as it turns its 11-year plan to 12 years, and we are tasked to develop the first 5-year plan, hence, an immediate application of the lessons from the training.
- The training has been very interesting, and I learned a lot. This is really helpful for my thesis.
- Gratitude to the Resource Persons and Facilitator. Our previous exposures on Participatory Rapid Appraisal is quite similar but PPA is more in-depth and more active. The experience has been very helpful and humbling. I am hopeful that I will be able to apply what I have captured as the essence of this training.
- I had very high expectations from the beginning of this training because it is by CIRAD. Truly, within the 3-day period, I already have a shift in paradigm. I think of the future through things in the present.
- Gratitude to all despite the storm. Realization is that, PPA overlaps with other methodologies that we use in our work. PPA is more structured. I am looking forward to how the community would use and understand the PPA process.
- I am imagining an echo or roll-out of this training where the present co-trainees can serve as co-resource persons. Let us introduce this as our universal tool for planning in our offices or with inter-agency activities or programs.
- Gaine a lot of insights from the sharing sessions. The participatory process is awesome.
- PPA is challenging, but the cold venue is more challenging. I learned more new things about participatory approaches that can be most useful to research and to my classes. I came here with the hope to apply learning from this event. The training exceeded my expectations.
- Gratitude to the RPs for the successful event. Now we have deeper understanding of PPA. I realized that we truly can only do much as there are a lot of uncertainties. It can be disheartening when negative things happen, but let us hope that we can influence and create a ripple effect as long as we believe in what we are doing. We must be reminded that it is not enough to engage

people in exercises, but let the process help them shape their future. UMRBPL can champion this.



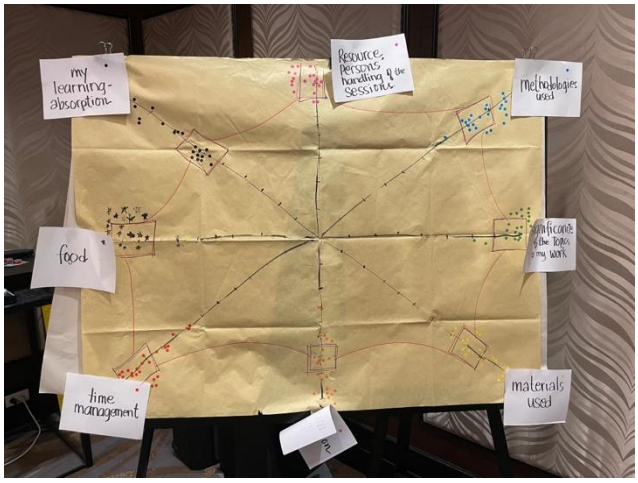


Figure 4: Evaluation board - Day 1

Figure 5: Team work day 3

Figure 6: Team work day 2

Appendix 4 Day 1 training

Morning

Introduction

Concepts and practices of anticipation in research and development

A frame of reference, postures and tools
July 2025 - Alabang

Workshop objectives

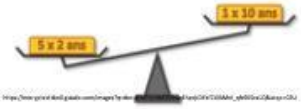
- Delivering a 10-day CIRAD training course in 3 days
  - Day 1: Introduction to the culture of future use and practical introduction to PPA
  - Day 2: Implementation of PPA
  - Day 3: Various tools applicable to the Philippines, next steps.
- In the context of Upper Marikina River Basin Protected Landscape (UMRBPL)
- Tentative main question: In what futures could natural park management contribute to the well-being of the local population in the Philippines? In what ways could carbon credits help to reach these desirable futures?
- Methodologies: plenary and group discussions, exercises
- Materials: online; link will be provided; can be downloaded

Concepts and practices of anticipation in R&D

Why this course?

A growing awareness that our world is truly uncertain,

Growing awareness that the "long term" isn't so long after all,



A belief that knowledge of the "techniques" for using the future is sufficient.

The conviction (and the observation) that there can be no development-related research without explicitly "taking the future into account".

Demonstrating the need for self-determination in landscape management decision-making processes

With what objectives?

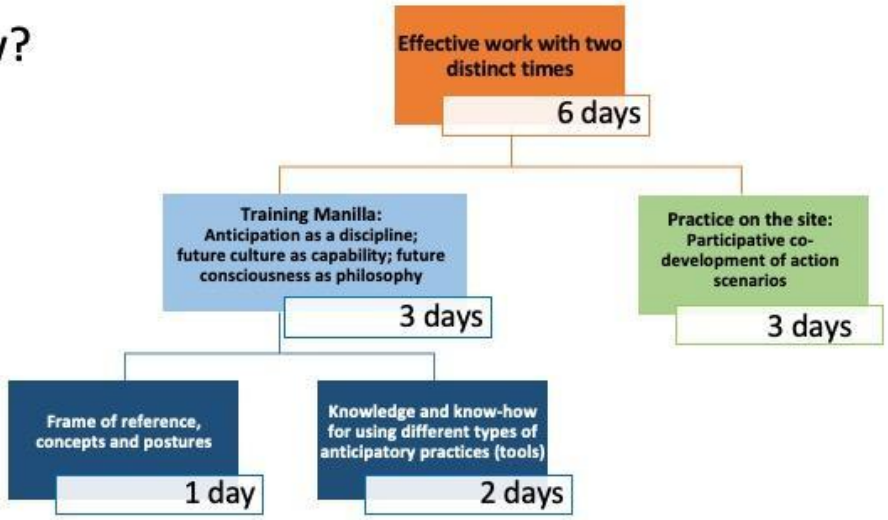
Be familiar with and know how to use a reference framework for the practice of anticipation (postures, anticipatory systems, concepts and tools).

Develop a culture and awareness of the future, enabling us to understand why and how to use the future

Be familiar with a number of qualitative tools for anticipation practice, and know how to use them in a contextualized way.

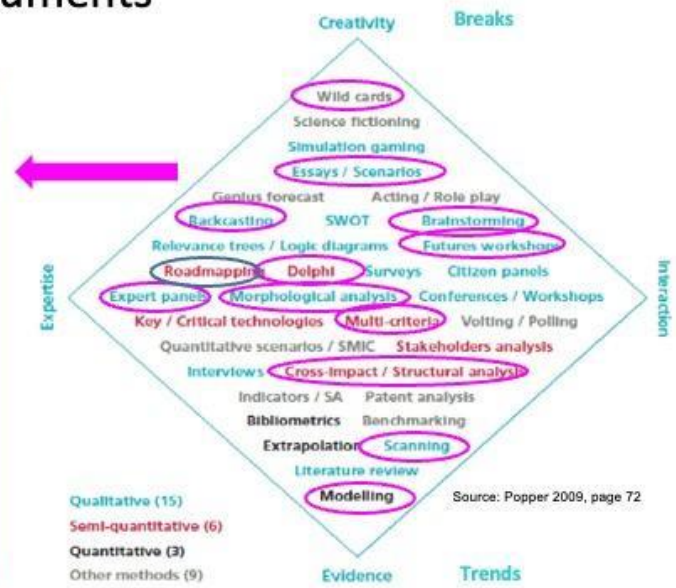
Know the participatory scenario co-development approach and know how to implement it

How?



A variety of instruments

- Alternative futures
- Visioning
- Backcasting
- Wheel of futures
- Triangle of futures
- Three Horizons
- Critical uncertainty matrix
- Causal layer analysis
- Co-development of scenarios



Exercice : our stance on the future

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Our stance on the future

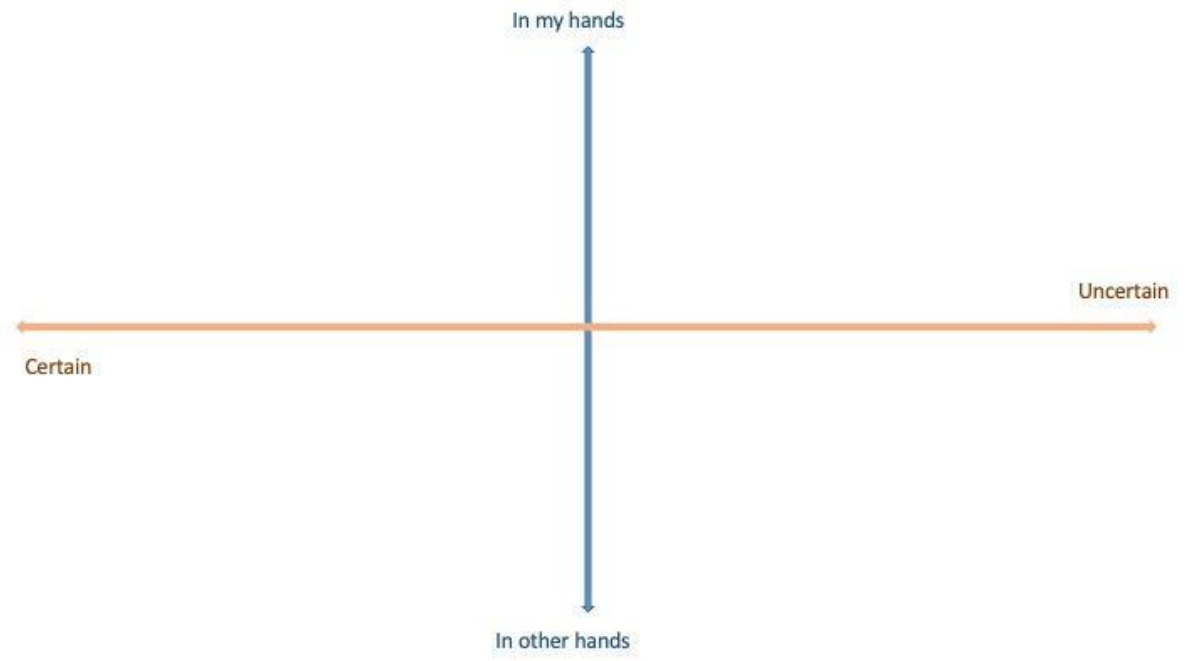
An exercise in self-reflection

Perceptions of the future

- How certain or uncertain do I think the future (10-15 years from now) is?

Actions for the future

- To what extent do I consider myself capable of playing a part in meeting the challenges of the future?


In my hands
Uncertain
Certain
In other hands


Mastery
Q2 The roadmap
Strong confidence in the occurrence of a particular future and the subject believes he has control over his own trajectory in relation to this direction.
Q1 Under construction
The future is open, indeterminate, and the subject believes he has control over his own trajectory in relation to these possibilities.
Future closed/ predetermined
Future open/ undetermined
Q3 Carried
Strong confidence in the occurrence of a particular future and the subject does not see him/herself as having control over his/her own trajectory in relation to this direction
Q4 In the mist
The future is open, indeterminate and the subject is not doesn't see him/herself in control of his/her own trajectory in relation to these possibilities

Culture of the future

Culture of the future
Conceptual framing

Disclaimer: The elements (slides, videos, ideas) used in this training course come from a CIRAD working group dedicated to anticipation and led by Robin Bourgeois. Some of these elements have been adapted to the Philippines context. We would like to thank this group and Robin Bourgeois.

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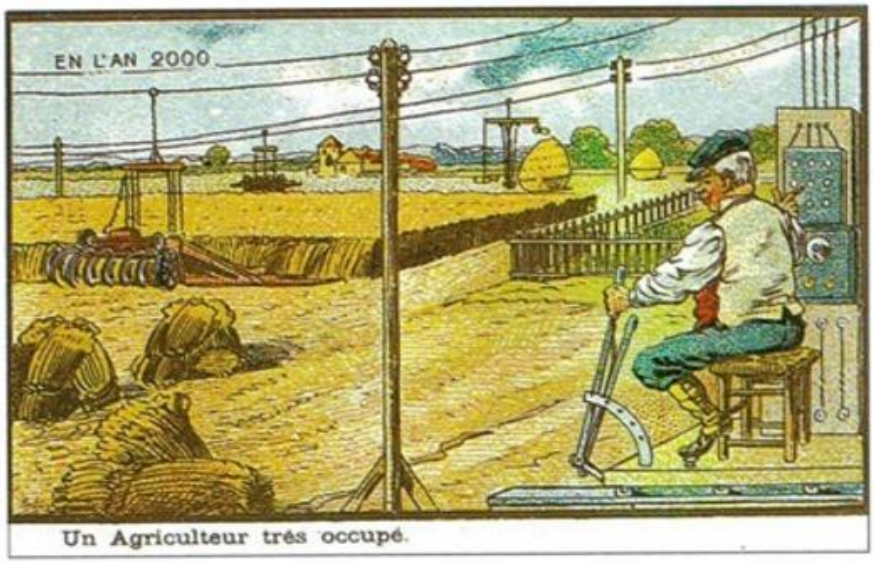
A pragmatic approach to productivity in 1900



Un Agriculteur très occupé.

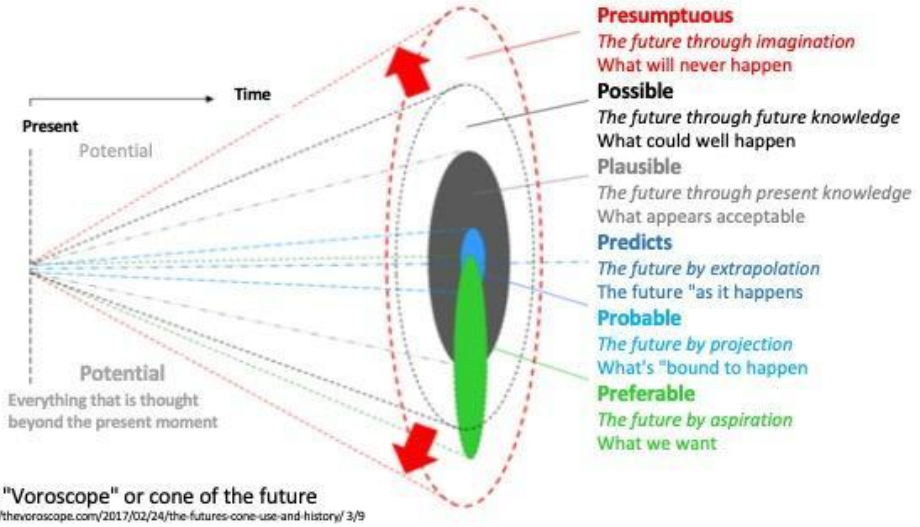
- Definitions
- Anticipation as a discipline
- The culture of the future
- Awareness of the future
- A reading grid

A few definitions to get you started

Anticipation: any effort to "know" the future, in the sense of "thinking about the future" and "using the future" are forms of anticipation (Miller, Poli and Rossel, 2018)

Anticipation as a discipline constitutes a field of research into the theories, concepts and practices of the "use of the future", i.e. how the *more-tomorrow-than-now* enters the reality of the present (Miller, Poli and Rossel, 2018).

About the "Future": what are we talking about?



The "Voroscope" or cone of the future
https://thevoroscope.com/2017/02/24/the-futures-cone-use-and-history/ 3/9

Alternative future or scenario?

- An elusive, polysemous, historically and ideologically charged concept
- There is no universal definition, but there are certain postures that need to be clarified when using this term.
- Our approach in this training:

Scenario: ***A representation of the future connected to a representation of the present***

Alternative future: A representation of the future based on an anticipatory approach

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Anticipation as a discipline

For a transdisciplinary (in)discipline

The beginnings of anticipation as a discipline

- *Major premise*

  The future does not exist in the present

  "There is no fact about the future"

- *Minor premise*

  There is no truth about the future

- *Conclusion*

  The future is a mental construct

The mental construct of anticipatory systems

"An anticipatory system is a system containing a predictive model of itself and/or its environment that enables it to change state at a given time in accordance with the model's predictions about a later time." (Rosen, 1985:341).

We anticipate because we are "naturally" endowed with an anticipatory system of which we are more or less aware.

→ The model's predictions exist in the present and seem to be determined by the past and the present *a priori*.

→ The model's predictions (and therefore its nature) determine our actions in the present.

How do humans anticipate, **what are our anticipatory systems**, on what "predictive" models of ourselves and our environment do we build the way we apprehend the future (in other words, do we make anticipatory hypotheses)?

↑

Anticipation as a discipline

← **Future awareness**

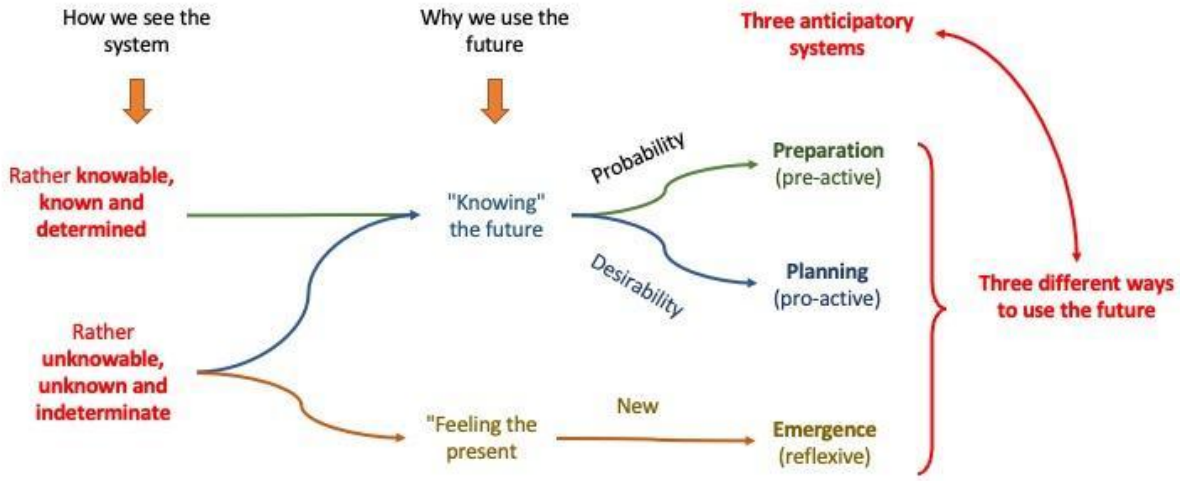
Anticipating: making use of the future

Attitude	Direction	Actions	Strategies
Passive	Accept	Endure	Waiting
Reactive	Adapt	React	Waiting
Pre-active	**Get ready**	**Plan**	**Prediction**
Pro-active	**Intervene**	**Influence**	**Exploration**
Reflective	**Feel**	**Reveal**	**Opening**

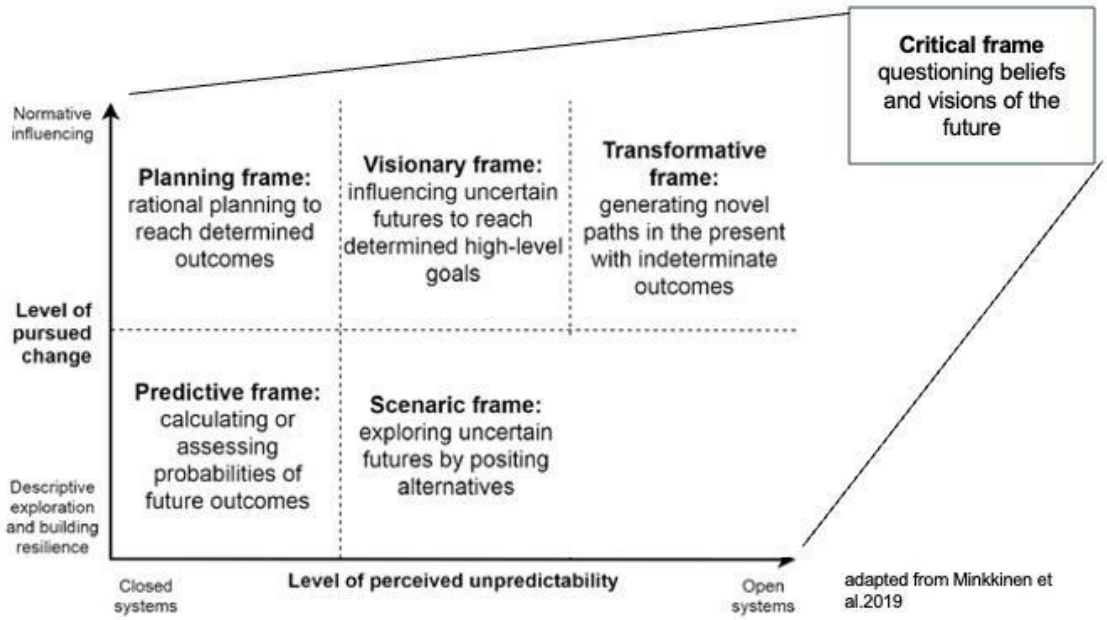
Three different ways of using the future

Source: Adapted from Godet and Miller

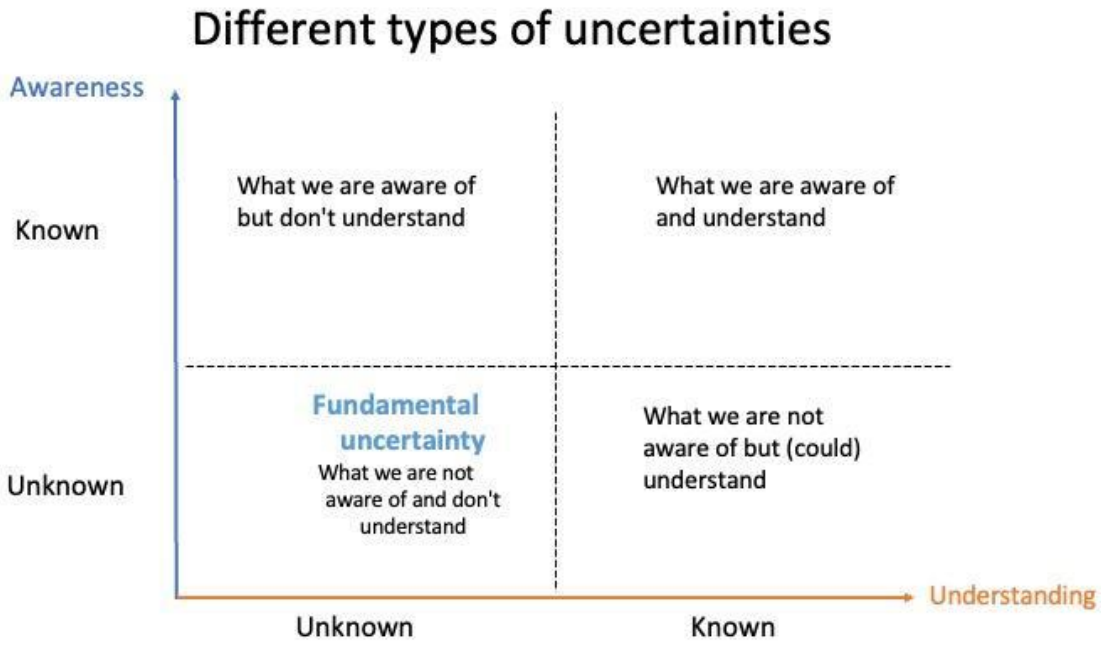
Perceptions, objectives and postures



Adapted from Miller, R. (Ed.). (2018). Transforming the Future (Open Access). London: Routledge.



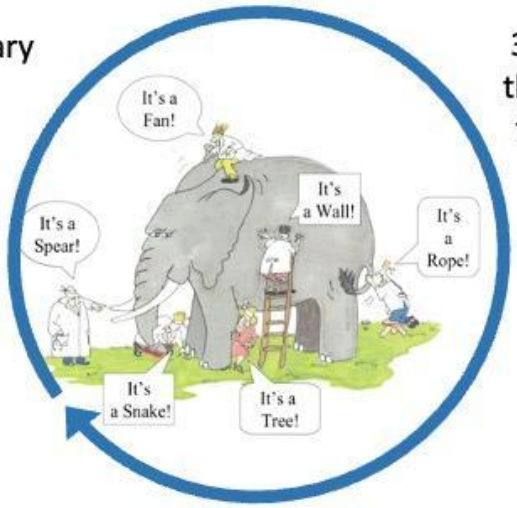
A frame of reference for future awareness as philosophy



For transdisciplinary and systemic content

2. Avoid disciplinary determinism

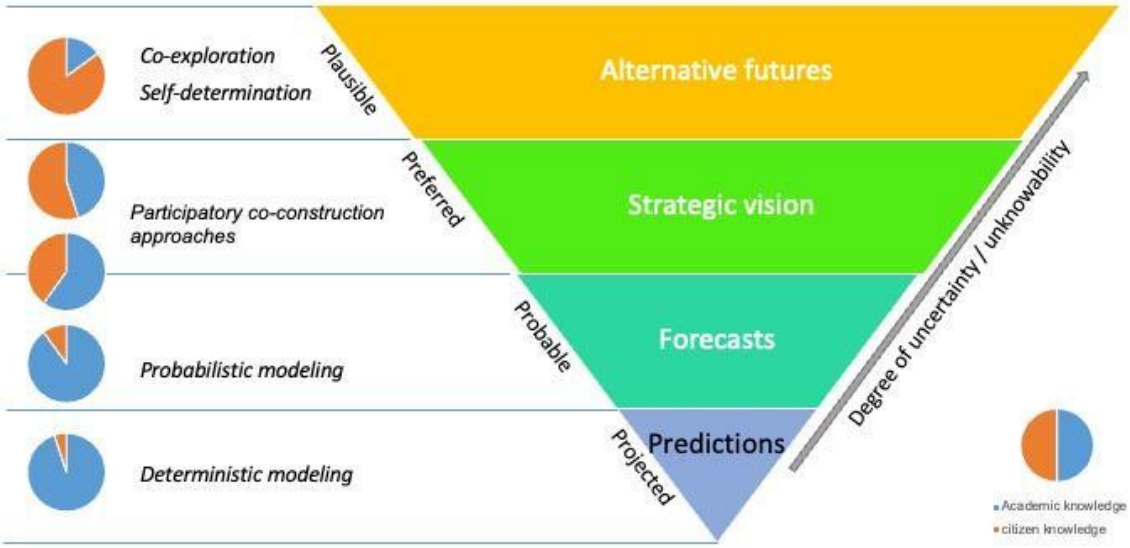
3. Articulating the known and the unknown



1. Exploring the entire future

4. Integrating the contextualized and the uncertain

Research support for anticipatory approaches



Future culture as capability

Source: https://libarynth.org/future_fabulators/foam_az_lecture - Share Alike 4.0 International

Self-determination

The future, a public good that can be transformed into a club good or even a private good

By the prevalence of "those who know how to do it".

Instrumental and procedural domination

By the primacy of the tool

Intellectual and institutional domination

By a certainty and an obligatory path

political and social domination

With an objective and an optimal path

Source: Bourgeois, R., Karuri-Sebina, G., and Feukeu, E. (2022), "The future as a public good: decolonising the future through anticipatory participatory action research", Foresight, forthcoming.

Future culture as a critical junction

- Disseminating a culture of the future helps to bring about a change in the conditions for change
- It is a way of improving the ability of individuals and organizations to detect and make sense of discontinuities, and thus be better able to engage in learning processes, such as new research or new types of research.
- In effect, we are creating a new governance of the future, in the sense of a society that adopts rules and implementation principles to enable us to use the future to fulfill our aspirations.

In conclusion: The culture of the future...

- ... is a capability built on an **understanding of the nature and attributes of anticipatory systems and processes**.
- ... provides the **ability to select and deploy different anticipatory systems** according to objectives and context.
- ... because it helps to **make sense of the present**, is a critical precondition for more improvised and spontaneous approaches, in terms of content and confidence;

... is a way of **increasing our capacity to be free**.

Miller, 2015:515

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The main families of alternative futures

The main families of alternative futures

Framing elements

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Some major families of alternative futures

- "Great Transition" by the Global Scenario Group, Stockholm Environmental Institute and Tellus Institute (2002)
- "Futures archetypes - Manoa School": Institute of Alternative Futures (2009)
- "GFAR Global World Orders (2015)
- OECD "Global scenarios 2035" (2021)

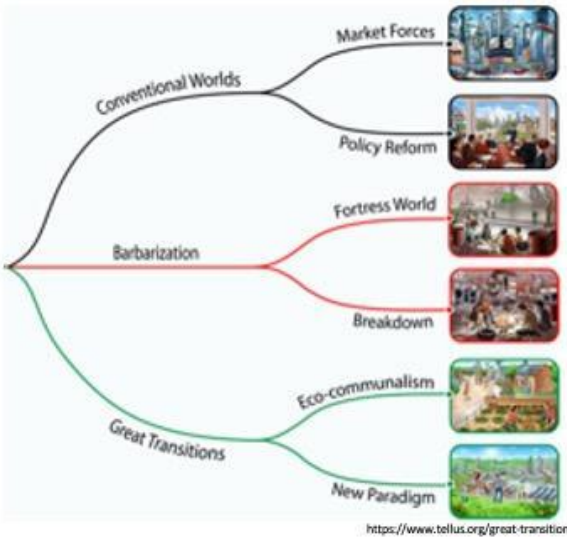
"Great Transition Initiative by GSG, SEI and Tellus

Scenarios

Conventional worlds
Economic interdependence
Expansion of dominant values
Convergence with rich-country models

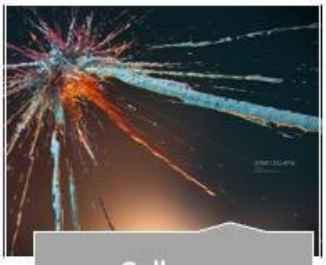
Barbarization
Unsuitable current strategies
Problems out of control
General crisis
Erosion of civilized standards

Major transitions
Transcendence of reforms
New values and institutions
A just, fulfilling and sustainable civilization



https://www.tellus.org/great-transition-initiative

Continuous growth



Collapse

Discipline

Transformation

Archetypes of the future (IAF)

Alternative

"But I eventually decide that all of the many images of the future that exist in the world can be grouped into one of four generic piles-four alternative futures. Sometimes the futures might seem to overlap between two or more piles, but most seemed to fall very naturally into one of the four-and no more." (Dator, 2009:6)

OECD global scenarios for 2035

Scenarios

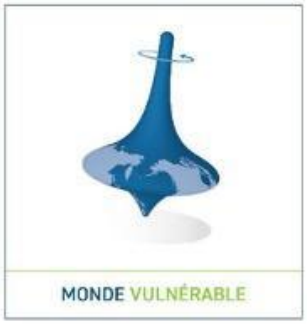
Global drivers of change

State effectiveness and alliances Common risks for humanity

Value and value shifts Digital interconnectivity across borders

The role of non-state actors Resource management for a green and digital economy

The three scenarios



MONDE VULNÉRABLE

MONDES VIRTUELS

MONDE À VOIES MULTIPLES

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Resources

IFTF systems Mythology:
- http://www.iftf.org/fileadmin/user_upload/downloads/tyf/IFTF_SR-1675C_SystemsMythologyToolkit_web.pdf

IAF Alternative Futures:
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Mont Fleur scenarios:
- https://reospartners.com/wp-content/uploads/old/Mont%20Fleur.pdf

Shell scenarios
- https://www.shell.fr/content/dam/shell-new/local/country/fra/downloads/pdf/lens-scenarios/sc%C3%A9narios-shell-nouvelle-optique.pdf

Global World Order GFAR
- https://www.gfar.net/sites/default/files/files/Prospects-Agriculture-and-rural-development-assistance-in-the-post-2015-development-framework.pdf

PPA in a nutshell

In a nutshell Participatory scenario-building

So that citizens can determine their own future

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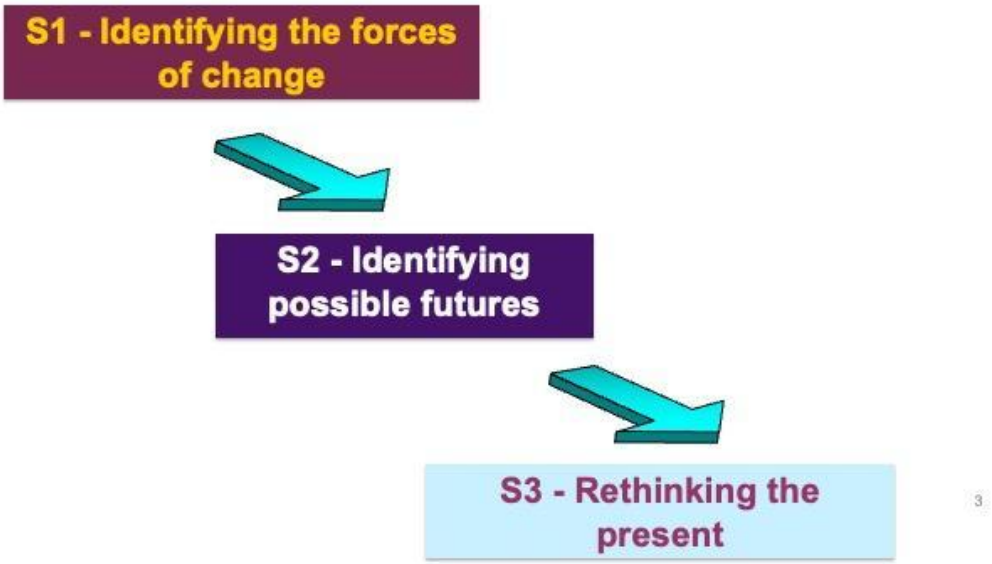
The three times



Steps in scenario co-development

- Agree on the "**system**" under study: the theme and its spatial limits, its time horizon and the system of players. May require diagnosis of the study area to position dynamics in time and space. May be followed by a preliminary session (preconceived ideas, prejudices, historical frieze, etc.).

- Identify **factors of change**: forces that have the capacity to transform the system under study. We distinguish between internal factors (which can be influenced/controlled by the actors in the system) and external factors (over which the actors in the system have no power).

Steps in scenario co-development

- Analyze the system's structure: Reveal the directly influencing interactions between internal factors of change through **structural analysis**.
- Identify **driving variables**: a driving variable is an internal factor of change with the greatest direct influence and lowest dependency in the system. Between four and eight driving variables are selected as entry points for exploring system evolutions.

Steps in scenario co-development

- Explore the **future states of** the driving variables: hypotheses about the situation of this variable at the chosen time horizon. Generally between two and six mutually exclusive hypotheses, represented in a morphological table.
- Identify incompatible future states: List future state pairings between driving forces that don't allow us to imagine coherent futures. These **incompatibilities** are used in a software program to sort the proposed frames.

Steps in scenario co-development

- Build **frames** to represent system futures: a frame is a combination of the states of the driving variables (1 state per variable). Typically, around ten frames are produced, representing contrasting and mutually exclusive future situations.

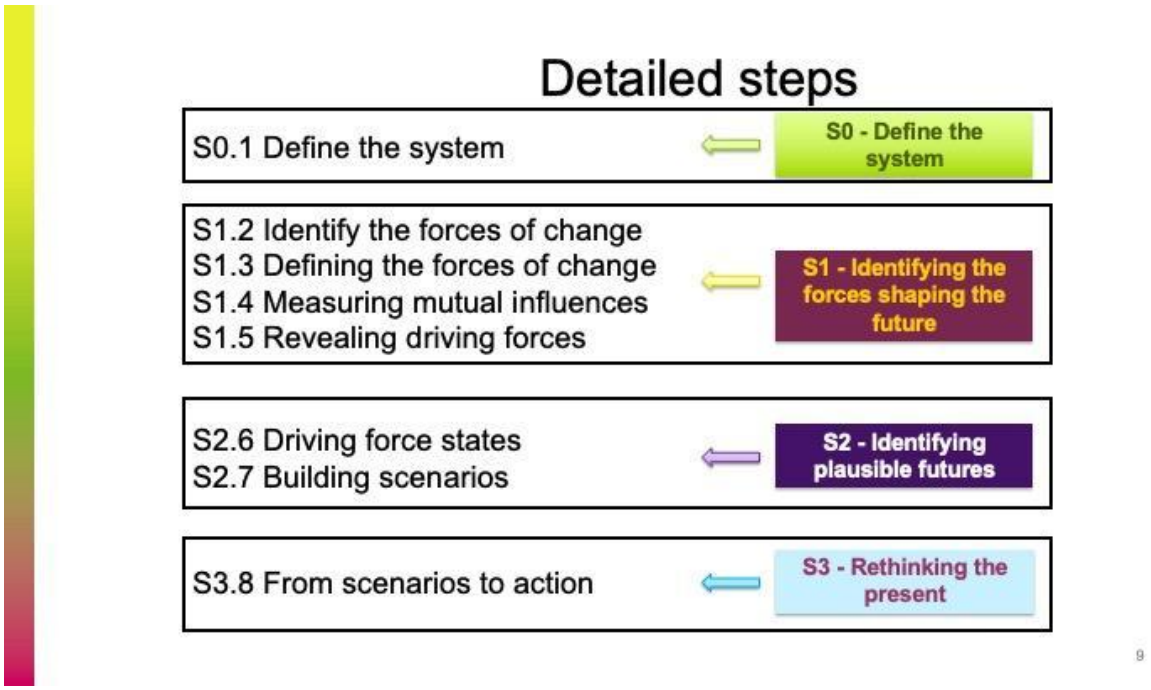
- Produce **synopses** and **narratives**: a synopsis is an explanation of the story in the form of a paragraph, giving a first glimpse of the future that corresponds to it; the narrative is an enrichment of the synopsis by the addition of states of all the other change factors identified. These states are imagined to reinforce the coherence of the synopsis according to a reasoned method of incorporating change factors.

Steps in scenario co-development

- Build **scenarios**: add to the narrative the path between the representation of the future defined by the state of the same forces in the present. The scenario is a representation of the future connected to a representation of the present. This connection starts from the future and indicates what changes have occurred, what actions have been taken and by which actors.

- Identifying **inflection points**: an inflection point is an event or action whose multiple effects lead to a significant change in the evolutionary trajectory. Inflection points are useful for strategic thinking

- Identify **pockets of the future** in the present: a pocket of the future is the presence of one or more representations in the current state of the system under study. These pockets of the future are anchor points for actions designed to steer the system's evolutionary trajectories in the desired directions


Detailed steps
S0.1 Define the system
S0 - Define the system
S1.2 Identify the forces of change
S1.3 Defining the forces of change
S1.4 Measuring mutual influences
S1.5 Revealing driving forces
S1 - Identifying the forces shaping the future
S2.6 Driving force states
S2.7 Building scenarios
S2 - Identifying plausible futures
S3.8 From scenarios to action
S3 - Rethinking the present
9

Afternoon

PPA from A to Z

Participatory scenario-building

So that citizens can determine their own future

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The approach

- *Using the future to change the present to change the future*
- Co-construct qualitative scenarios to identify plausible futures, enabling us to better understand the present and act accordingly.

Sources
- ❑ Knowledge of local stakeholders as "experts"
- ❑ Existing data and documents
- ❑ Projections when and if necessary and possible

Form of interaction
- ❑ Group work
- ❑ Consent decisions

Method
- ❑ Qualitative
- ❑ Quantitative wherever possible

Ethical principles

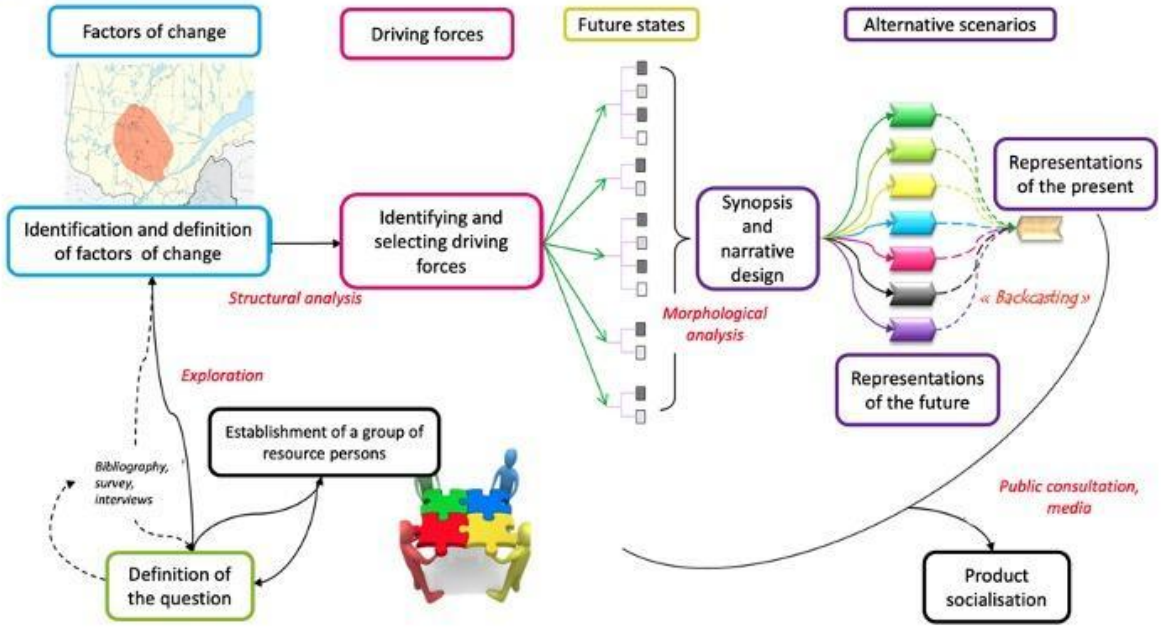
- ❑ ***Inclusion.*** Giving a voice to the "voiceless"; youth, women, agricultural workers, landless farmers, vulnerable groups, indigenous peoples...
- ❑ ***Openness.*** Accept all stakeholders and make sure that "voiceless" participants can express themselves.
- ❑ ***Documentation***. Document all stages of the process to ensure the relevance of comparisons between local cases and transparency in the delivery of results.
- ❑ ***Bottom-up perspective.*** Start at the local level and link strata and networks of social actors at different scales.

4

Principles

- ***Operationalization.*** Scenarios can be linked to concrete actions: scenario dissemination, action plan based on strategic scenario analysis, etc.
- ***Mutual learning.*** Reconsider postures, points of view and practices for using the future.
- ***Specificity.*** Respecting local and cultural specificities and value systems.

5



Detailed steps

S0.1 Define the system	S0 - Define the system
S1.2 Identify the factors of change S1.3 Defining the factors of change S1.4 Measuring mutual influences S1.5 Revealing driving forces	S1 - Identifying the forces shaping the future
S2.6 Driving force states S2.7 Building scenarios	S2 - Identifying plausible futures
S3.8 From scenarios to action	S3 - Rethinking the present

Detailed steps

S0.1 Define the system	S0 - Define the system
S1.2 Identify the factors of change S1.3 Defining the factors of change S1.4 Measuring mutual influences S1.5 Revealing driving forces	S1 - Identifying the forces shaping the future
S2.6 Driving force states S2.7 Building scenarios	S2 - Identifying plausible futures
S3.8 From scenarios to action	S3 - Rethinking the present

Step 0 - define the system

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How do you define the system?

Objective - Clarify the issue

- What are we talking about?
- What are the spatial and temporal limits?
- Who are the players?

Method

- Work on the basis of demand (origin, clients, expectations)
- Clarify system definition with resource persons

Product

- Institutional and operational agreement on the subject and its scope (the system)

See Methodological Notes

Stakeholder mapping: identifying the players

- Define the context: Identify the sector or area of interest (e.g. agroforestry in the Philippines).
- List the players: Identify the key players involved in the sector, such as
  - Government organizations (ministries, agencies, etc.)
  - Private companies (forestry companies, farmers, etc.).
  - Non-governmental organizations (NGOs, associations, etc.)
  - Local communities and indigenous peoples
  - International institutions (World Bank, FAO, etc.)

Mapping: analyzing relationships between players

- Identify relationships : Analyze relationships between players, such as :
  - Power relations (influence, control, etc.),
  - Cooperative relationships (partnerships, collaborations, etc.),
  - Conflict relations (oppositions, disagreements, etc.),
- Assess interests: Assess the interests and objectives of each stakeholder, such as :
  - Economic interests (profit, growth, etc.)
  - Environmental interests (conservation, protection, etc.)
  - Social interests (employment, health, etc.)

Mapping the players

- Create a map: Create a map that represents the players and their relationships, using symbols, colors and arrows to illustrate relationships and interests.
- Identify groups: Identify groups of stakeholders who share common interests or objectives.
- Analyze dynamics: Analyze the dynamics between players, such as alliances, conflicts and compromises.

Mapping: interpreting the results

- Identify opportunities: Identify opportunities for collaboration and cooperation between players.
- Analyze challenges: Analyze the challenges and obstacles that could hinder cooperation and collaboration.
- Developing strategies: Develop strategies to strengthen relationships between players and promote cooperation and collaboration.

S0.1 Define the system	S0 - Define the system
S1.2 Identify the factors of change S1.3 Defining the factors of change S1.4 Measuring mutual influences S1.5 Revealing driving forces	S1 - Identifying the forces shaping the future
S2.6 Driving force states S2.7 Building scenarios	S2 - Identifying plausible futures
S3.8 From scenarios to action	S3 - Rethinking the present

S1.2 Identifying the factors of change

Objective - Identify the forces that have influenced, are influencing or will influence the system under study.

2 methods depending on the time and group involved

Products

- A list of relevant and defined internal strengths
- A list of relevant and defined external forces

See Methodological Notes

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Identifying the factors of change

- Two main procedures

1. Draw up a preliminary list from various sources
   - Studies, reports, diagnostics
   - Interviews, surveys,
   - Horizon scan, Delphi

   then discuss and finalize the list with resource persons

2. Produce this list with resource persons
   - Working with individual hopes, concerns and certainties
   - Creating a historical fresco
   - Mobilize the skills of resource persons to reflect on the associated strengths, in terms of trends and breakthroughs

Identifying the factors of change

- Which procedure to choose?

	For	Counter	Remediation
Direct approach	Involves participants directly; ownership; Faster engagement in thinking about the future	Possible biases; "Domination" by the urgency of the present; More difficult formulation	STEEP verification; Careful selection of contacts; Formulation examples
Preliminary list	*More exhaustive; Saves time (not always) Shows how to formulate the forces of change; Serves as an example*	*Lack of ownership; Imposed by animators; Limits participants' liability; Limits thinking about the future*	*In-depth discussion phase; Fear/hope/uncertainty session Historical fresco*

Identifying the factors of change : Warming up ...

A first look into the future: Hopes and worries

Consider, within the limits of the defined system :

- Desirable trends
- Fears of undesirable future states

Desirability or undesirability is relative, specific to each individual.

Exposing individual hopes and fears, then putting them up for debate, helps to identify "what makes people tick".

The animation is very simple and classic: one idea per post it, in green the hopes, in pink the fears, individual reflection and pooling.

Additional work on prejudices (in order to get rid of them) is also possible.
The idea is to list and discuss them, then leave them posted for reference.

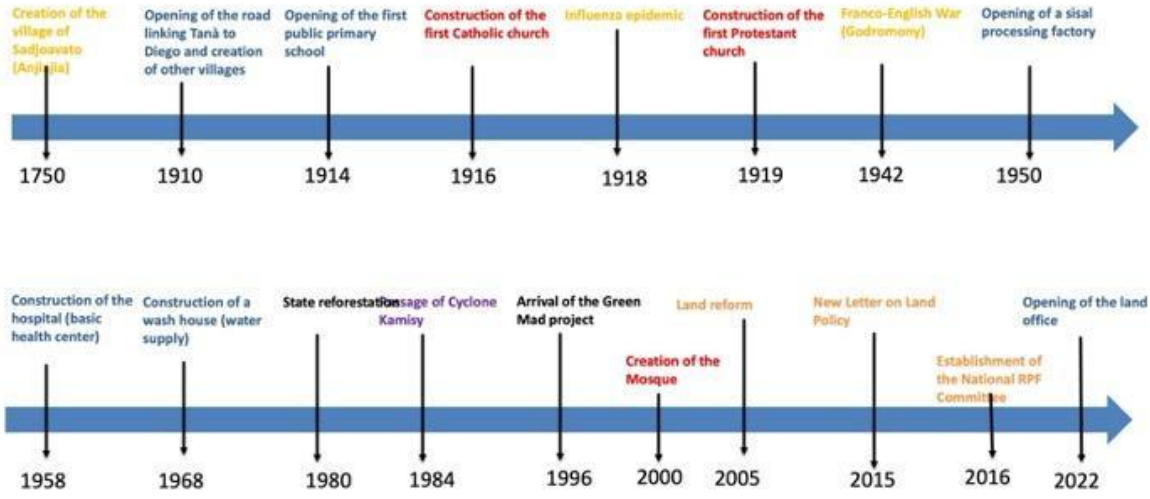
Identifying the factors of change : Warming up ...

Back to the past for the future: a historical timeline

Objective: identify the events that have influenced the system's trajectory in the past

Method :

- a timeline, from a key date to the present day
- participants post milestones, possibly in different colors depending on the nature of the event, and possibly separating external and internal elements
- allow discussions to take place on the scale of the impacts, the interplay of players at work, the links between milestones, etc.



Representation of major events in the history of the municipality of Sadjoavato

S0.1 Define the system	**S0 - Define the system**
~~S1.2 Identify the factors of change~~ S1.3 Defining the factors of change ~~S1.4 Measuring mutual influences~~ S1.5 Revealing driving forces	**S1 - Identifying the forces shaping the future**
S2.6 Driving force states S2.7 Building scenarios	**S2 - Identifying plausible futures**
S3.8 From scenarios to action	**S3 - Rethinking the present**

S1.3 Defining the factors of change

Objective - Agree on the definition of each force

Method

– Structured group discussion with "experts

Product

– A list of definitions to be used in the following steps

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Defining the factors of change

What a list of change factors consists of:

- **A** distinctive **name**
- **A** "neutral", objective, conceptual **definition:**
  - ❑ neutral: in the definition there is no value judgment (positive, negative);
  - ❑ objective: the definition must allow everyone to have the same understanding
  - ❑ conceptual: the definition refers to a phenomenon that can take on different aspects (different future situations)

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Defining the factors of change

Examples of inappropriate wording:

Judgement: *fertilizers are too expensive*

A potential condition: *Bad roads*

A generality: *climate change*

A recommendation: *be more productive*

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Defining the factors of change

Examples - types of reformulation:

Access to fertilizer: *Who has access to what type of fertilizer* (in the study area)?

State of roads: *State of road transport network* (in study area)

Climatic conditions: *Type of climatic conditions prevailing in the study area (rainfall, temperature).*

Productive capacity: *Capacity of small local producers to produce a marketable surplus.*

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External and internal forces

External forces

- Characterized by the fact that the actors in the system have no power over their future evolution.

Internal forces

- Linked to system-specific issues, they can be influenced/controlled by system players

Why separate them?

- External forces strongly influence internal forces. Keeping them together makes it more difficult to identify the most influential internal forces.
- By keeping them, the scenarios would be built with external forces that cannot be influenced by the actors in the system, thus depriving the actors of their possibility of action.
- Separating them enables a more detailed analysis leading to internal and external/contextual scenarios.

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How many forces for change?

Two risks

- Too complex (too many forces)
  - The more forces, the longer the analysis
  - Co-linearity: overestimation of forces with similar behavior
  - Heterogeneity: mixing small and large causes
- Too simple (not enough strength)
  - Omission: forgetting important forces
  - Bias: omitting key dimensions

Three practical tips

- 20 to 60 internal forces
- STEEP
- Common sense

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Name	Definition/Explanation
Women's empowerment	Degree of autonomy women have in Nawa society in cultural, social, economic (e.g., microfinance, agricultural production), and political terms
Tourism activities	State of development of tourism activities in the Nawa region
Agricultural technological innovation	State of agricultural technological innovation (what type of innovation, where does it come from, etc.)
Governance	State of governance in the region (who decides, how, who implements decisions)
Local investment	Volume and destination of local investment (by local Nawa actors)
Land	State of land rights (legislation, enforcement) in relation to access to land
Food	State of food security for inhabitants of the Nawa region
Personal/property security	State of physical security for people and property
Electricity	% of people who have access to electricity, including conditions of access and type of electricity (or energy)
Gold mining	State of development of gold mining in the region
Collective action	Capacity of producers to take collective action (e.g., agricultural cooperative)
Biodiversity	Level of respect for biodiversity by the region's population and visitors, outside investors, etc.
State of roads	State of the road transport network (quality, coverage)
Technology training	Access to training on agricultural technologies and production systems (who, under what conditions)
Entrepreneurship training	Access to training in entrepreneurship (who, under what conditions)
Incoming flows	Nature of inbound migration flows to the region (quantity, geographical origin, who, etc.)
Outflows	Nature of migratory flows leaving the region (quantity, geographical origin, who, etc.)
Sustainability of businesses	Status of international business sustainability programs regarding their local business relationships (content, duration, etc.)
International cooperation	Status of international cooperation programs in the Nawa region
Project coordination	Level of coordination of development projects in the region (projects from different sources)
Status of plantations	Status of cocoa plantations (age, yield, health status, etc.)

What about external factors of change?

Specific work is needed to take them into account and produce representations of contrasting contexts that can be connected to the scenarios based on internal factors.

Generally achieved by mobilizing different sources and experts

Example of the Niayes:

- *11 external factors*
- *4 driving forces*
- *8 scenarios*

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S1.4 Measuring mutual influences

Objective - Estimate the direct influence of each force on all the others

Method

- Structural analysis
- Estimates of the direct influence {0;1} of each force
- Filling in an Influence/Dependency matrix

Product

- A matrix of direct influences

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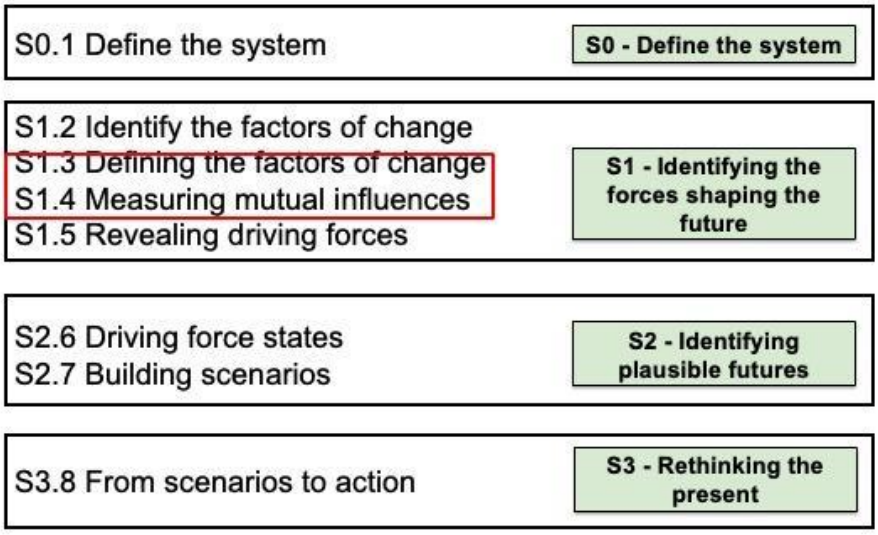

S1.4 Assessing mutual influences

What is direct influence?

- Force A has a direct influence on Force B if a change in Force A logically causes an immediate change in Force B without the intervention of any other factor(s).
- If the state of Force A changes, then the state of Force B changes "directly", without the action of other forces.
- This change can be clearly and logically argued without recourse to examples.

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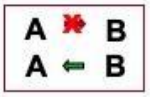
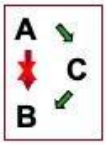
Three common sources of error

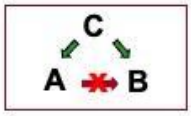
- Error in the meaning of causality
  We think A -> B, when in fact B <- A



- Indirect influence
  We think A -> B, when in fact A -> C -> B, without A -> B



- Co-variation
  We think A -> B, when in fact C -> A and C -> B, without A -> B



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The Influence/Dependence matrix

Action of: ↓ on: →	Force 1	Force 2	Force 3	Force 4	Total influence
Force 1		1			1
Force 2	○		1	1	2
Force 3	1				1
Force 4		1			1
Total dependence	1	2	1	1	5

Force 2 has a direct influence on Force 3 and Force 4

Force 2 has no direct influence on Force 1

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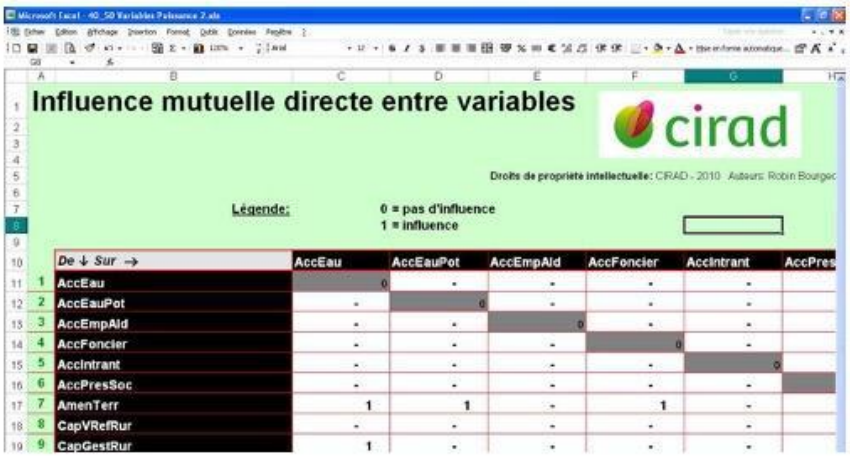
The Influence/Dependence matrix



Influence mutuelle directe entre variables

cirad

Droits de propriété intellectuelle: CIRAD - 2010 Auteurs: Robin Bourgeo

Légende: 0 = pas d'influence
1 = influence

	De ↓ Sur →	AccEau	AccEauPot	AccEmpAld	AccFoncier	AccIntrant	AccPres
1	AccEau	0	-	-	-	-	
2	AccEauPot	-	0	-	-	-	
3	AccEmpAld	-	-	0	-	-	
4	AccFoncier	-	-	-	0	-	
5	AccIntrant	-	-	-	-	0	
6	AccPresSoc	-	-	-	-	-	
7	AmenTerr	1	1	-	1	-	
8	CapVRefRur	-	-	-	-	-	
9	CapGestRur	1	-	-	-	-	

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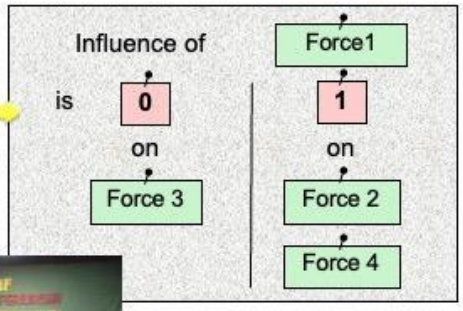
How do I fill in the I/D matrix?

Use a physical support (polystyrene, flip chart, blackboard) and cards with the names of forces and fastening materials (tacks, glue, adhesive tape, etc.).



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How do I fill in the I/D matrix?

or

Fill in the matrix directly in the electronic file projected on a screen or wall

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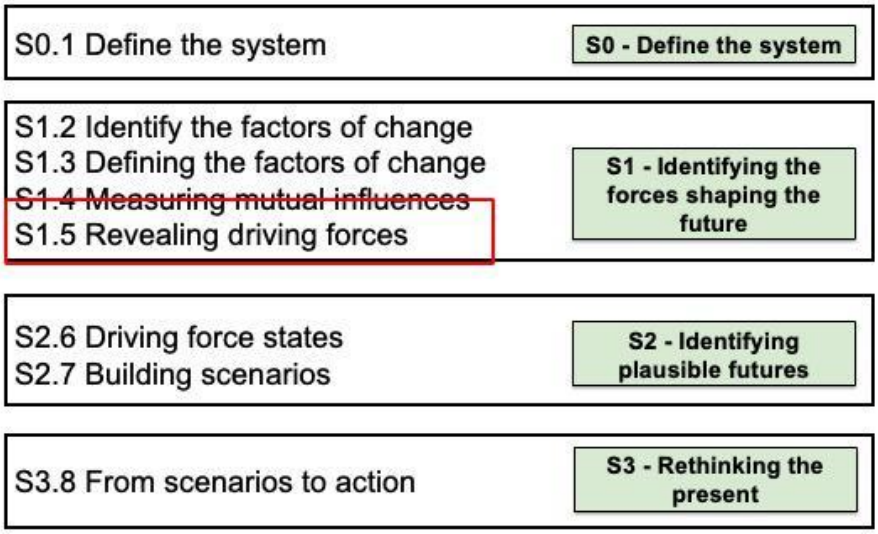

S1.5 Revealing driving forces

Objective

- Identify the most influential forces for change in the system - the "driving forces".

Method

- Interpreting the matrix and graphs
  - ***Position of forces in graphs***
  - *Total weighted direct influence of each force*
  - *Total weighted indirect influence of each force*
  - *The power of each force*

Product

- **A group of key driving forces**

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Matrices and arrays

- Direct influence and dependence
  - Automatically calculated in the table under the direct influence matrix (***Variables' influence*** data sheet)
- Indirect influence and dependence
  - The indirect influence matrix and the corresponding table below it are automatically calculated (***Variables' total influence*** data sheet).
- Global influence and dependence
  - Automatically calculates the global influence matrix and the corresponding table below this matrix (***Variables' total influence*** data sheet).
  - The global influences matrix is located below the indirect influences matrix and tables.

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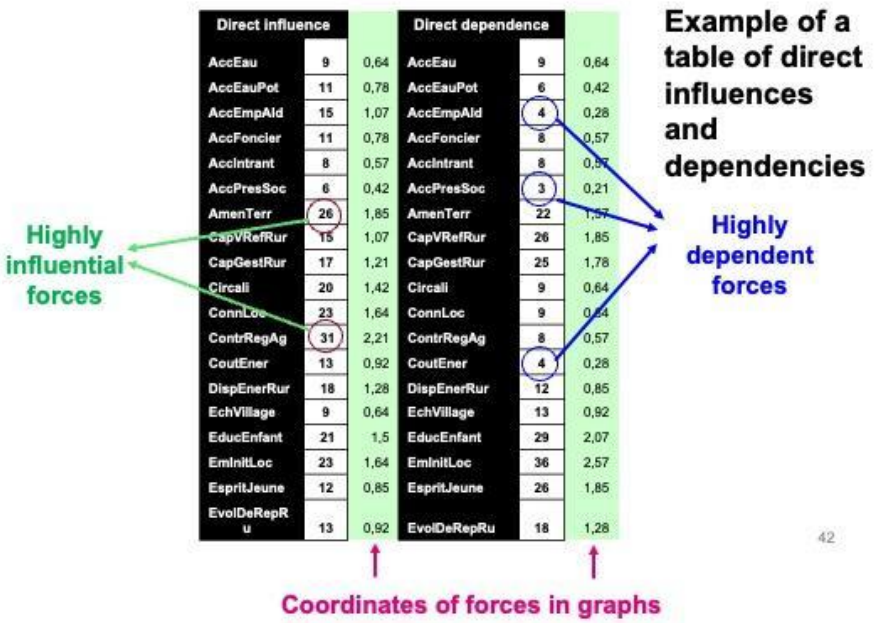

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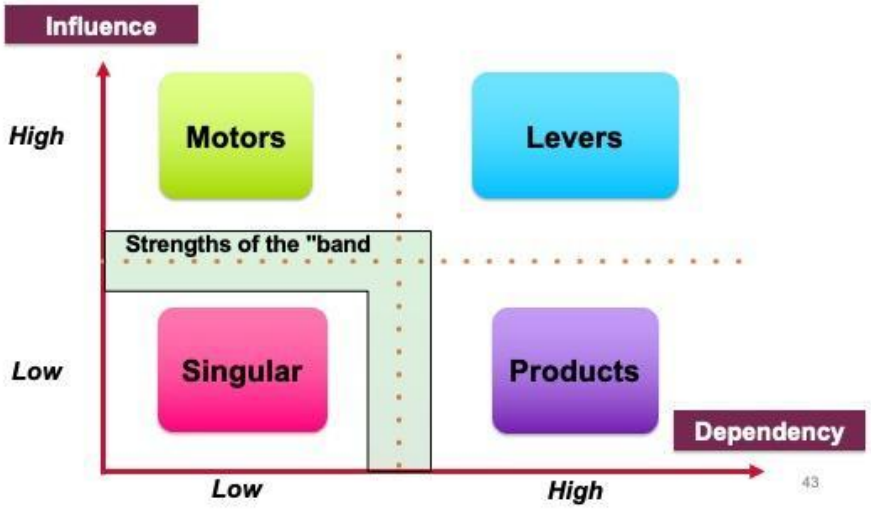
Influence/Dependence graphs



- Selecting driving forces
  - The driving forces are first selected from the "motors".
  - Driving forces can also be "levers".
  - Driving forces are selected from among the most powerful available

- How many driving forces?
  - Between 4 and 8
  - Less than 4: few simplistic scenarios
  - More than 8: too many complicated scenarios

➡ **Use common sense and agree among participants**

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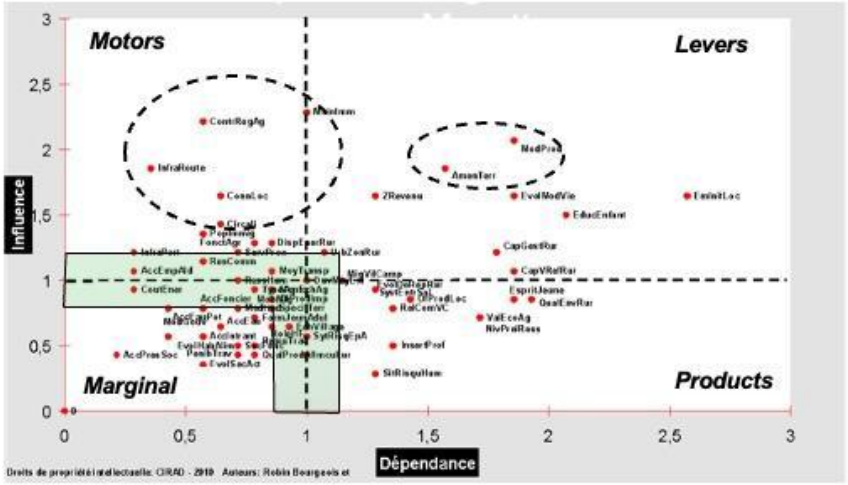

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Example

- Controls and regulations in the agricultural, fishing and livestock sectors
- Population and immigrant workers in rural areas
- Infrastructure (roads, ports, airport)
- Local knowledge and know-how
- Production methods and agricultural functionality
- Land use management
- People's attitude towards public authority and respect for rules and the law

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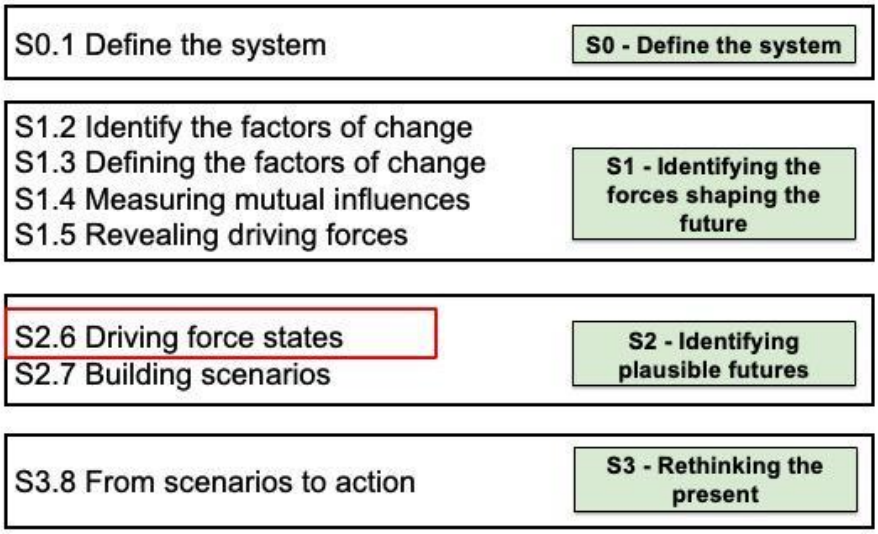

S2.6 Define driving force states

Objective - define contrasting future states of driving forces

Method

- Group discussion
- "Brainstorming

Product

- **A "morphological" picture of future states**
- **A list of incompatibilities between states**

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What is a state of the future?

- It's a hypothesis about the state of the driving force at the chosen time horizon; it's a description of this force in the future.
- For each driving force, several assumptions are made, including disruptive assumptions.
- For each driving force, the states selected must be contrasting and mutually exclusive (two states cannot occur together).
- Write a precise sentence, avoid short expressions with qualifying adjectives, write in the present tense.

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How do you define a state?

- Knowledge of driving forces is essential
  - Document each force's past situation, how it has evolved to date, what has caused it to change, and how it might change in the future.
- Taking trends and changes into account
  - Thinking about desirable and undesirable states
  - Thinking about what's likely to happen (trend)
  - Thinking about other possibilities (breaks)
  - Being creative...

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How to proceed in a group?

- Create a table with the driving forces in the first column and the following columns for future states ("morphological" table).
- Take the first driving force and distribute colored cards
- Write one status per card, according to color for example:
  *pink=desirable; grey=undesirable; **blue=BAU/trend; yellow=break/disruption***
- Collect cards and arrange them on a support (grouping)
- Discuss the cards until a satisfactory number of contrasting and mutually exclusive states are reached (2-6).
- Write the states in the line corresponding to the driving force
- Repeat with the other driving forces in the table
- Identify and note incompatible state pairings

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Example states (Mayotte)

Driving forces	**1**	**2**	**3**	**4**	**5**
Behavior	General respect	Local respect	Erratic	Discharge	Breaking
Infrastructure	European standards	Maintenance	Spatial heterogeneity	Focus on external activities	Degradation
Immigration	Integration of illegal migrants	Existence of illegal migrants	Expulsion of illegal migrants	Majority of illegal migrants	
Production methods	New hybrid model	Promoting local agriculture	Dual farming	Intensive agriculture	More agriculture
Land use management	Concertation and concern for stakeholders' expectations	Unilateral, hierarchical, no contest	Many decision-making centers; no coordination	Conflicts with the population	
Controls and rules in the APE sector	Adapting to local conditions	Imposed with communication	Limited with erratic application	Abandoning rules and controls	
Local knowledge and know-how	Promotion	Hybridization with external knowledge	Simple transmission	Rejection of external knowledge	Disappearance

Desirable | Trend | Undesirable | Breaking

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Identify incompatible future states

- Identify incompatible future states: List future state pairings between driving forces that don't allow us to imagine coherent futures. These **incompatibilities** are used in a software program to sort the proposed frames (step 2.7).

Example states (Mayotte) - incompatibilities

Driving forces	1	2	3	4	5
Behavior	General respect	Local respect	Erratic	Discharge	Breaking
Infrastructure	European standards	Maintenance	Spatial heterogeneity	Focus on external activities	Degradation
Immigration	Integration of illegal migrants	Existence of illegal migrants	Expulsion of illegal migrants	Majority of illegal migrants	
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Local knowledge and know-how	Promotion	Hybridization with external knowledge	Simple transmission	Rejection of external knowledge	Disappearance

A1/C4
A4/E3
A5/F2
B1F4
D2/G5

Desirable | Trend | Undesirable | Breaking

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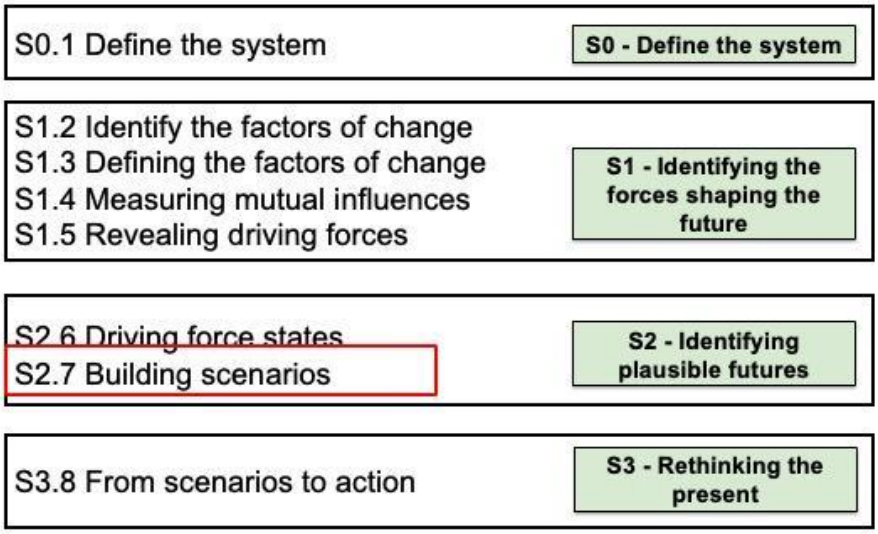

S2.7 Building scenarios

Objective - Build scenarios to explore the widest range of plausible system evolutions

- **A scenario is a representation of the future connected to a representation of the present.**
- Each scenario must be plausible, contrasting and exclusive of other scenarios.
- Together, the scenarios cover a broad spectrum of plausible transformations

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S2.7 Building scenarios

Objective - Explore a variety of plausible system evolutions

Process

1. Produce frames
2. Turning frames into synopses
3. Developing synopses into narratives
4. Produce a representation of the present
5. Produce pathways from representations of the future to those of the present

Product

– **Several contrasting and mutually exclusive scenarios**

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How do I create frames?

A frame is a coherent combination of assumptions about the future state of driving forces

- Use the driving force status table
  - Choose a state for each driving force and combine the chosen states to form a coherent set of hypotheses about the future.
- Consider trends, breaks and extremes
  - Thinking about desirable and undesirable frames
  - Thinking about what's likely to happen (trend)
  - Think of other possibilities
  - Being creative ...

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How do I create frames?

Individual approach and group discussion

- Distribute the completed morphology chart to each participant
- Distribute four different coloured cards to each
- Write one frame per card according to color:

pink= desirable
gray= undesirable
blue= trendy
yellow= break

A1	A2	A5	A5
B1	B2	B5	B5
C1	C2	C4	C4
D1	D3	D5	D2
E1	E2	E4	E3
F1	F3	F4	F4
G2	G3	G5	G4

- Check the consistency of the frame with the software
- Display the frames on a large vertical support and discuss them collectively to select the most contrasting frames.

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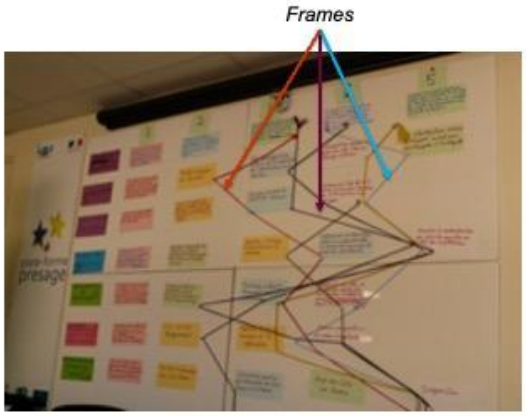
How do I create frames?

Integral "yarn of wool" collective approach

- Lay out a large support (2m x 1m) such as polystyrene, thick cardboard, cork, wood panel with the morphological chart on which you can pin anchor points (thumbtacks, nails, screws, etc.).

- Produce wefts by vertically connecting the various anchor points with wool yarns of different colors for each weft, based on participants' suggestions, producing desirable and undesirable wefts, probable wefts, creative breakout wefts.



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How do I create frames?

- Individual approach and group discussion
  - Totally inclusive
  - Systematics
  - Long and tedious, sometimes exclusive
  - Complex
  - Requires specific facilitation capabilities
- Integral "yarns of wool" collective approach
  - Potentially exclusive
  - Fun
  - Requires appropriate supports and specific equipment
  - Less systematic

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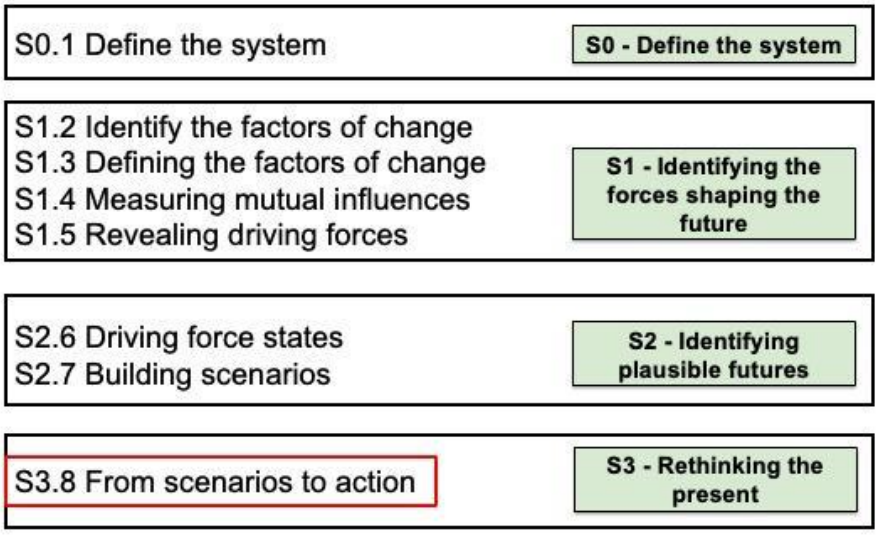


Back to the present?

- Build **scenarios**: add to the narrative the path between the representation of the future defined by the state of the same forces in the present. The scenario is a representation of the future connected to a representation of the present. This connection starts from the future and indicates what changes have occurred, what actions have been taken and by which actors.

From future to present : backcasting

A definition (Vergragt and Quist , 2011)

"generate a desirable future, and look back from that future to the present in order to define a strategy and plan how it can be achieved".

Key elements of backcasting:

- A **starting point in the future**
- An **arrival point in the present**
- A method for **connecting the start point to the end point** in order to identify one or more actionable paths

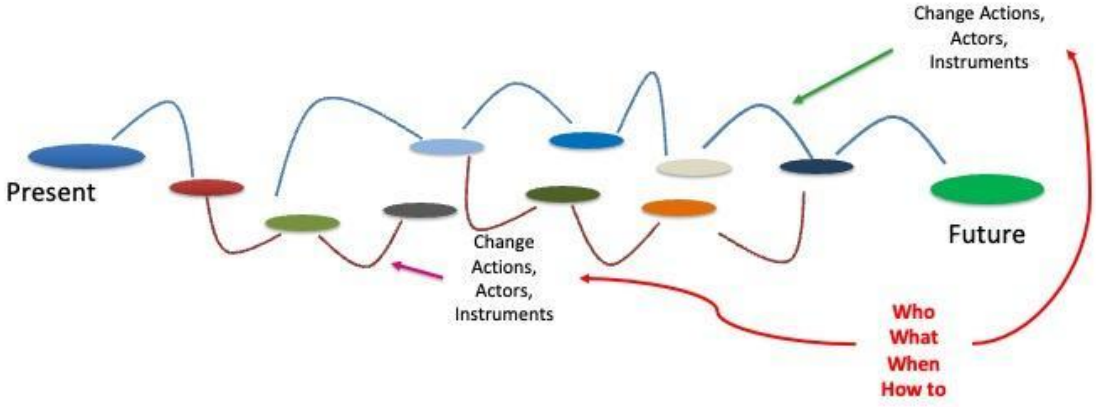
Process

- *Preliminary stages*
  - *A future situation is clearly identified*
  - *The current situation is clearly identified*
- Populating a known "transition space
  - Actions
  - Events
  - Players
  - Instruments

When
What
Who
How to

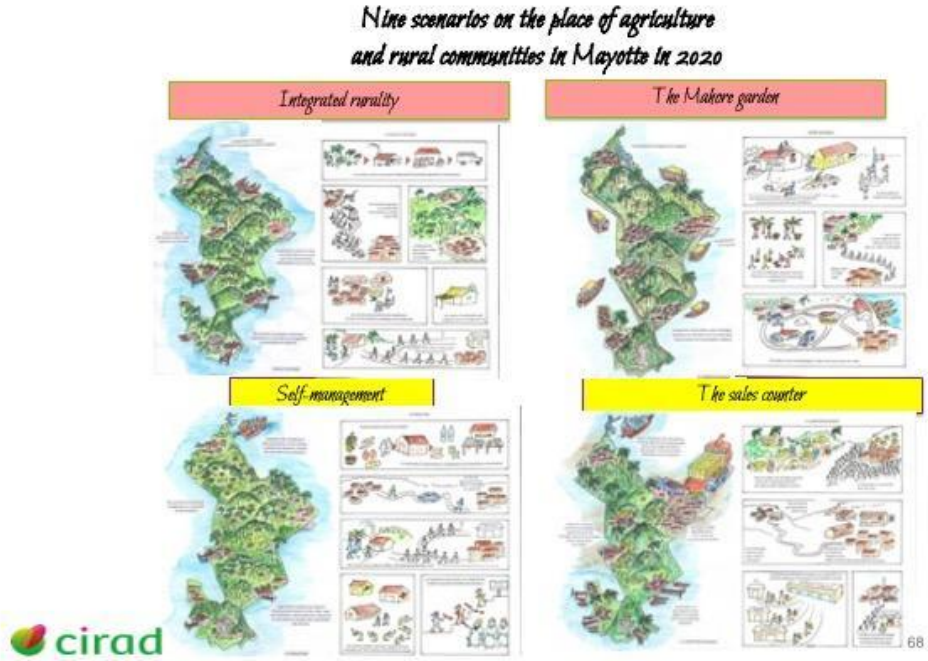
How to proceed

- **The future fresco:** Produce a pathway by identifying "backwards" what has happened between the future situation and the present one.



Communication on the scenarios

- Produce media for the use of **scenarios** according to the objectives that justified the use of this method
  - Reports
  - Written communication media
  - Visual communication media
  - Audiovisual communication media
  - (film, slideshow)
  - Direct interviews/surveys



Appendix 5 Day 2 training

PPA practical exercices

Training in participatory scenario co-development

Day 2 - Practical exercises

Objectives of the day

- To gain hands-on experience with participatory foresight by actively engaging in the process
- To develop an initial understanding of the key issues related to the management of the UMRBPL

Defining UMRBPL system

Define the system

S0.1 Define the system	S0 - Define the system
S1.2 Identify the factors of change S1.3 Defining the factors of change S1.4 Measuring mutual influences S1.5 Revealing driving forces	S1 - Identifying the forces shaping the future
S2.6 Driving force states S2.7 Building scenarios	S2 - Identifying plausible futures
S3.8 From scenarios to action	S3 - Rethinking the present

4

How do you define the system?

What: Explicit the question

Where: Identify the area of interest

When: Define the time period

Who: Map stakeholders:

- Identify all key players involved
- Describe their relationships
- Assess their interests/objectives

Application

Chosen theme: **Management of protected forest landscape**

What (the question)

- What are the possible futures desired by the players in the UMRBPL?
- How can Carbon Finance contribute to these futures?

Where (geographical space)
Upper Marikina River Basin Protected Landscape

When (time period): 2055

Who (stakeholders): PA management board, Indigenous peoples and NCIP, Local government unit, NGOs, farmers, residents (tenure migrants, communities, forest occupants), private sector: traders, private investors, SAPA holders (special use agreement on PA) including energy sector, tourism; EMB, representatives of government agencies

Define factors of change

S0.1 Define the system	**S0 - Define the system**
S1.2 Identify the factors of change S1.3 Defining the factors of change S1.4 Measuring mutual influences S1.5 Revealing driving forces	**S1 - Identifying the forces shaping the future**
S2.6 Driving force states S2.7 Building scenarios	**S2 - Identifying plausible futures**
S3.8 From scenarios to action	**S3 - Rethinking the present**

7

How do you define factors of change?

- Participants discuss factors of change, optionally with the help of a pre-defined list
- They list 20-60 factors each with:
  - A distinctive name
  - A **neutral, objective, conceptual** definition
  - Characterisation as internal or external
- If needed, we can look for missing items in the STEEP categories to complete the list

Factors of change - instructions for today

1. Form five random groups, with each group taking one STEEP topic.

1. Add two to three factors for each topic: (30 minutes).
   a. Distinctive name
   b. Neutral, objective, conceptual definition.
   c. Internal/external

Write the factors in the corresponding table here (you can also edit the pre-filled in factors).

1. In plenary, present and explain your factors of change (5 minutes).

1. Vote individually on a paper (5 votes by participant) for the factors to be kept for the next exercise.

Definition of 29 factors of change for UMRBPL – Results

Factors of change - Social

	Name	Definition	Type
S1	Food Security	State of food security for the region's inhabitants; Access to and use of sufficient, safe and nutritious food	Int
S2	Land Tenure and Resource Access	Access to land use and resources of within the protected area	Int
S3	Education Access	Availability and quality of education to the population	Int
S4	Migration Trends	Movement/Influx of people inside and outside PA	Int
S5	Cultural Norms	Transmission of traditional Indigenous Knowledge Systems and Practices; Shared beliefs and values that influence behaviour and social cohesion	Int
S6	Gender Dynamics	Level of engagement of women in decision-making in PA management	Int
S7	Demographic Change	Population size (growth), and age distribution	Int

Factors of change - Social

	Name	Definition	Type
S8	Housing/Settlement Status	Urbanization/development/growth on their residential/status of living	Int
S9	Community Participation	Involvement of communities/local residents/organization in decision-making/management of the PA	Int
S10	Infrastructure Development	Infrastructure projects, transportation and communications	Int
S11	Community Organizations	Presence of organized groups and communities within and outside the PA	Int/Ext

Factors of change - Economic

	Name	Definition	Type
Eco1	Tourism activities	State of development of tourism activities in the region	Int
Eco2	Road conditions	Condition of the road transport network (quality, coverage)	Int
Eco3	Market Forces	Level of demand for food products from the city of Manila	Ext
Eco4	Funding System	Type of financial support (mechanisms, institutions)	Ext
Eco5	Agricultural Systems	Type of Food production and livelihood (agroforestry, industrial vs small-scale farming)	Int

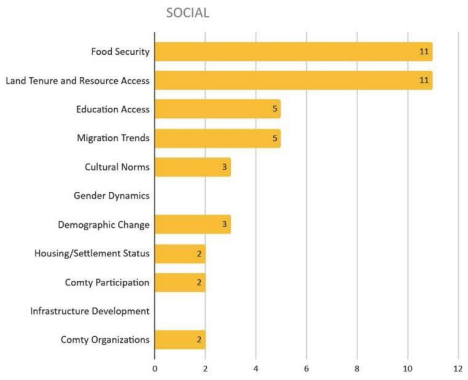
Factors of change - Environmental

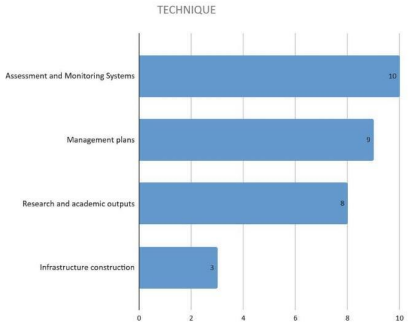
	Name	Definition	Type
Env1	Biodiversity	State of biodiversity protection within the PA	Int
Env2	Protected Area management	Type and quality of PA management (activities carried out in different habitats, by whom)	Int
Env3	Water and soil conservation	State of water and soil services beneficial for conservation efforts but also community needs (regulation, filtration, soil fertility etc)	Int
Env4	Habitat based Livelihood practices	Type of practices used affecting the environment e.g., ecotourism, agricultural, etc. within the PA	Int
Env5	Biodiversity Corridors	Condition of green and blue corridors that facilitate interconnectivity and species movement within the PA	Int
Env6	Buffer Zone	Existence of a buffer area (for protection) surrounding the PA	Int
Env7	Climate change adaptation	Quality of climate smart practices (mitigation+adaptation) and structures within the PA	Int

Factors of change - Political

	Name	Definition	Type
P1	PAMB Governance (multistakeholder council)	Level of responsiveness of PAMB governance within the PA	Int
P2	Political Influence - Government	Level of proactiveness of LGUs in terms of PA conservation (Municipal & Barangay level e.g. Mayor, Brgy. Captain) Level of proactiveness of NGAs in terms of PA conservation (National and Regional level e.g. DENR, DPWH, DA, NCIP)	Int, Ext
P3	Non-tenured and tenured migrants	Level of land and resource use	Int
P4	2 PACBRMA Holders	Level of Forest land management, including resource use	Int
P5	Private sector interests	Level of Urban and development pressures from the private sectors driven by political economic interests	Int, Ext
P6	CSOs (NGOs, POs, Mass Media) Interest	Proactiveness of Environmental CSOs, particularly their lobbying towards UMRBPL protection	Ext

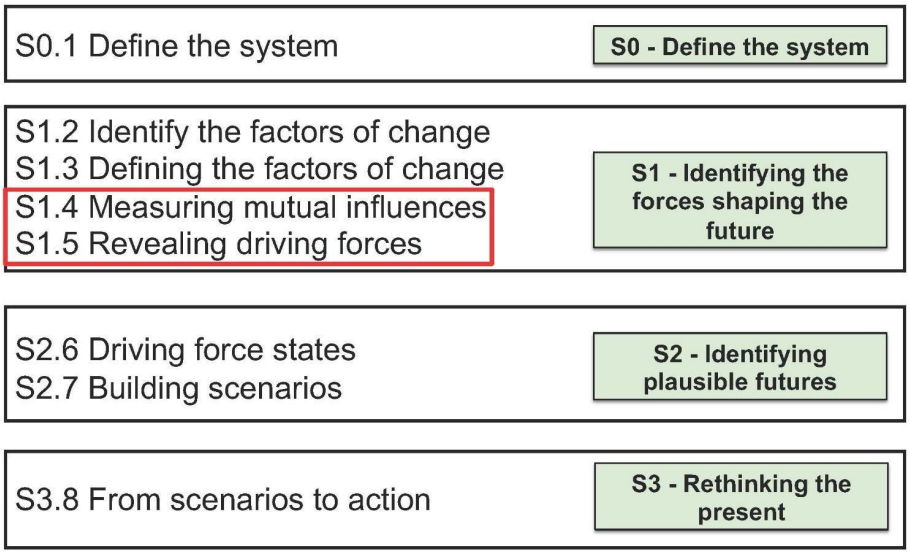
Selection of 11 factors of change for structural analysis exercice





Structural analysis exercise

Structural analysis



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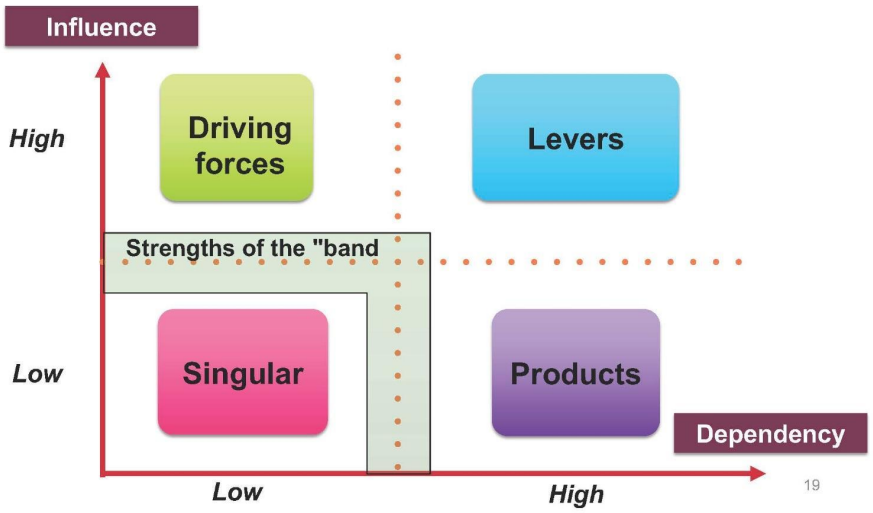
What are the steps to identify driving factors?

Driving forces = factors that have a strong influence and are not greatly affected by other factors.

1. Complete an I/D matrix showing the **direct influence** (0/1) of the factors in the rows on the factors in the columns. Factor A directly influences Factor B if a change in Factor A logically causes an immediate change in Factor B, without any other factors intervening (no 'ifs', no examples).
2. Use influence/dependence graphs to identify driving forces.
3. Select 3–6 driving forces to use in building scenarios.

Influence/Dependence graphs



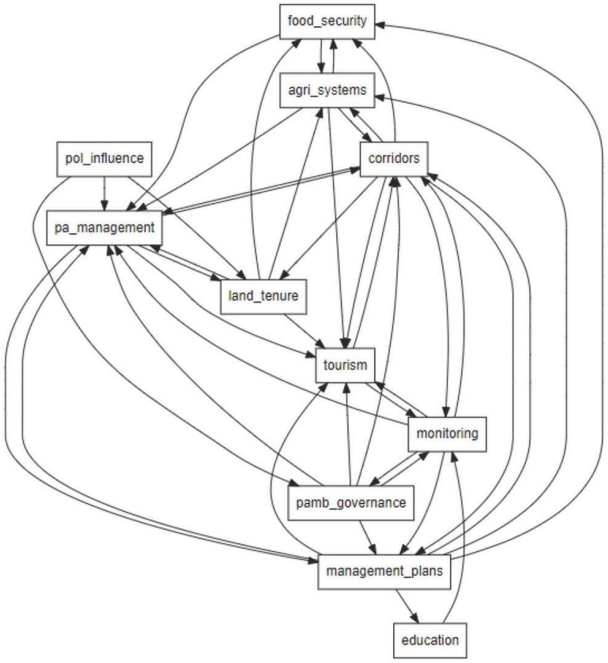
Structural analysis - Instructions

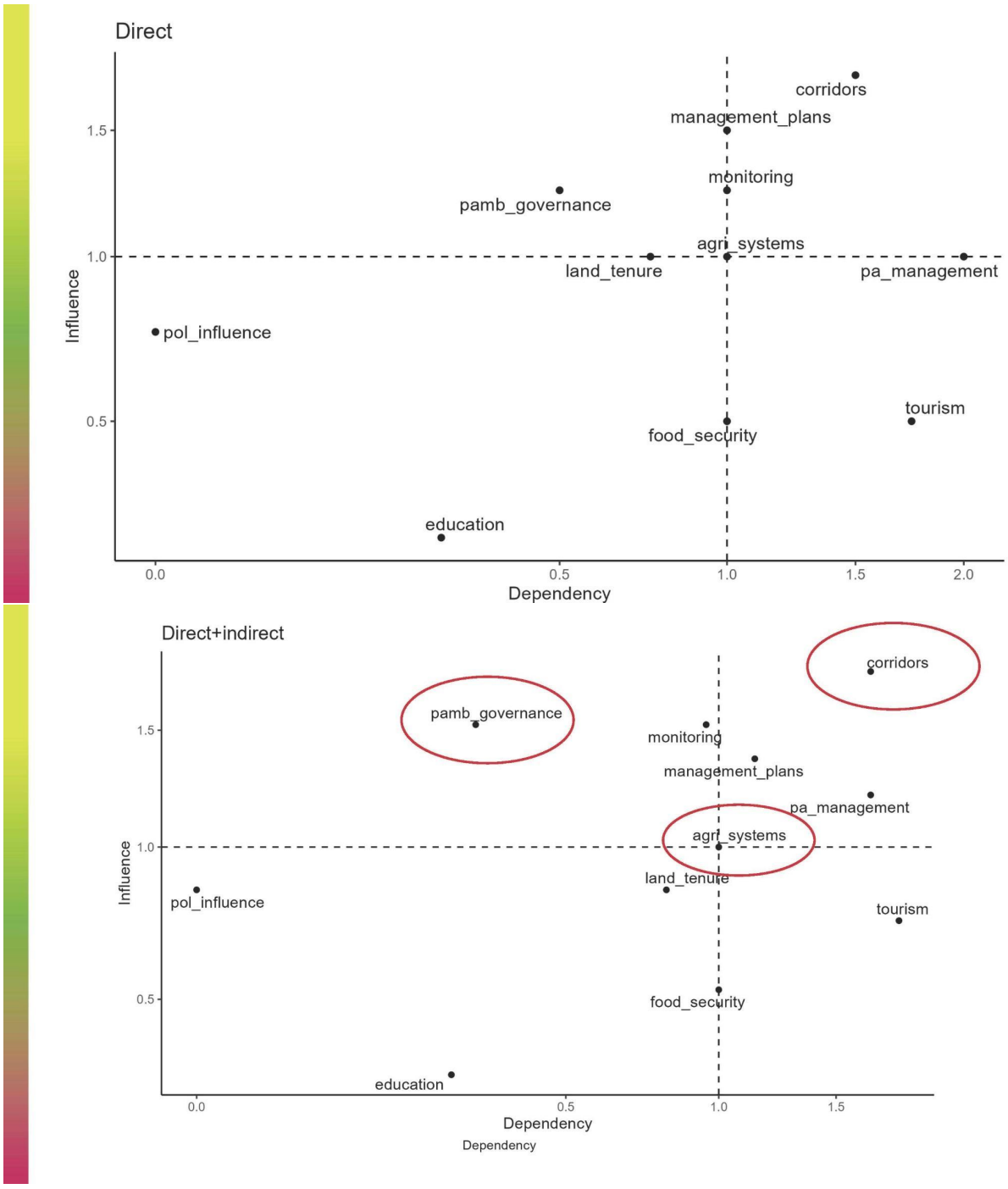
1. Form 4-6 groups, each of which will have two factors (two rows in this matrix).
2. For each factor (row), add 1 when you judge that factor A has a direct influence on factor B (30 minutes).

[Lunch break]

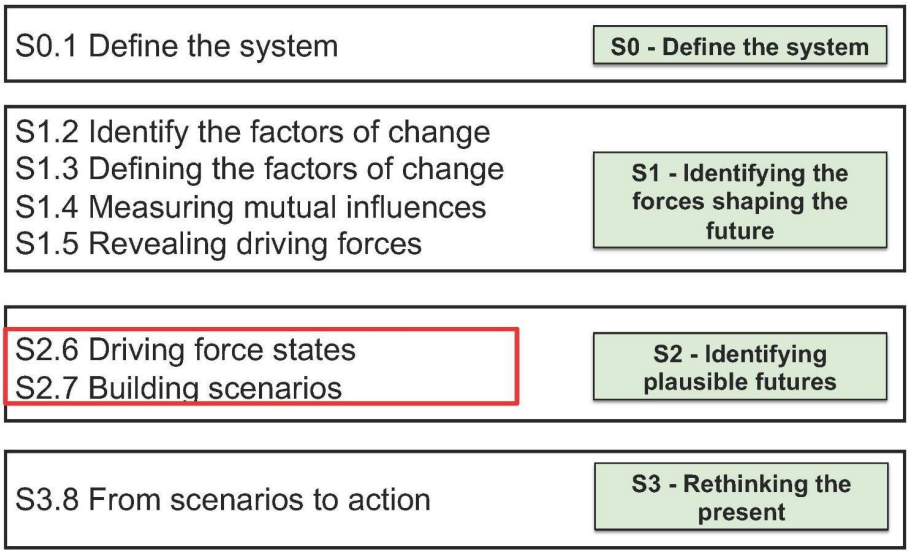
1. Visualise and discuss the direct influences identified by the groups.
2. Then, visualise the I/D graphs and choose three to four driving forces (20 minutes).

	food_security	land_tenure	education	monitoring	management_plans	tourism	agri_systems	pa_management	corridors	pamb_governance	pol_influence
food_security	0	0	0	0	0	0	1	1	0	0	0
land_tenure	1	0	0	0	0	1	1	1	0	0	0
education	0	0	0	1	0	0	0	0	0	0	0
monitoring	0	0	0	0	1	1	0	1	1	1	0
management_plans	1	0	1	0	0	1	1	1	1	0	0
tourism	0	0	0	1	0	0	0	0	1	0	0
agri_systems	1	0	0	0	0	1	0	1	1	0	0
pa_management	0	1	0	0	1	1	0	0	1	0	0
corridors	1	1	0	1	1	1	1	1	0	0	0
pamb_governance	0	0	0	1	1	1	0	1	1	0	0
pol_influence	0	1	0	0	0	0	0	1	0	1	0




Direct
corridors
management_plans
monitoring
pamb_governance
agri_systems
land_tenure
pa_management
pol_influence
tourism
food_security
education
Influence
Dependency
0.0
0.5
1.0
1.5
2.0
Direct+indirect
corridors
pamb_governance
monitoring
management_plans
pa_management
agri_systems
land_tenure
pol_influence
tourism
food_security
education
Influence
Dependency
Dependency

Build scenario frames



25

How can scenario frames be built from driving forces?

1. For each driving force, define a set of possible states (including disruptive ones) in a short, precise sentence in the present tense. The states for each driving force must be **contrasting and mutually exclusive**.
2. Identify pairs of incompatible states between driving forces.
3. Propose combinations of states (one per driving force) to create scenario frames.
4. Ensure that the states within each scenario frame are not incompatible.

Build scenario frames - instructions

1. Form one group for each driving force.
2. Identify at least three contrasting, mutually exclusive states: One desirable, one business as usual and one break/disruption (30 minutes).

   Write these on the slides.

1. In plenary, present states (5' by group) and identify incompatibilities (30 minutes)
2. Vote on states you want to keep with stickers (1 vote/driving force/person) (5 minutes)
3. Choose most popular scenario after checking for inconsistencies

States - Names

Driving force	1. Desirable state	2. BAU state	3. Break 1	4. Break 2
C.agri_system	AgriCOOLtura	BAUnan	Asteroid impact	Debt-free
B.pamb_governance	PAMB era	LaLaLa	AIGov	Unstable policies
A.corridors	Eco highways	Biolink	City Corridors	Barren Exotropolis

States - definitions (Biodiversity corridors)

A1. In 2055, eco highway will serve as functional and resilient corridors with healthy and natural vegetation that will facilitate interconnectivity and species movement from one habitat to the others.

A2. Biolink will be composed of fragmented habitats, vulnerable to external factors, that limit interconnectivity and species movement.

A3. City corridors will be multiple artificial wildlife corridors established to facilitate interconnectivity and species movement from one habitat to another.

A4. Barren exotropolis (exotic metropolis) will be highly industrialized areas with exotic or invasive species colonizing natural areas and limiting ecosystem services, once provided by functional corridors.

States - definitions (PAMB governance)

B1. ***(PAMB-era "Pambihira)*** In 2055, effective PAMB governance with strong multi-stakeholder engagement which enables evidence-based and policy-driven decision making for carbon financing.

B2. ***("Lalala" / to worsen)*** Weak governance resulting to persistent and rapid degradation, loss of biodiversity and ecosystem services in UMRBPL

B3. ***(AIGov "AyAyAy!")*** PAMB governance driven by AI technology for conservation, monitoring and decision making and management of UMRBPL

B4. ***(Unstables policies)*** PAMB governance with frequently changing rules and decisions affecting conservation, resource use and management of UMRBPL

States - definitions (Agri systems)

C1. In the desired future, agri systems are embedded within a climate-resilient & agro-ecological landscape approach that ensures sustainable food production, supports profitable & dignified livelihoods & fosters inclusive & equitable participation of all stakeholders creating a just & thriving rural economy within UMRBPL.

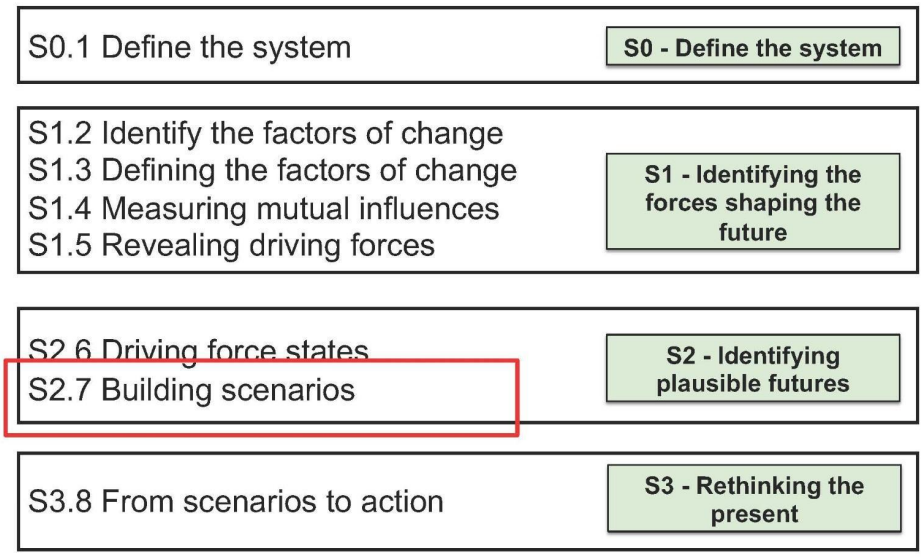
C2. In the BAU, agri systems continue along a destructive & fragmented path, marked by encroachment of industrial models that degrade ecosystems, exclude smallholders, & marginalized vulnerable communities.

C3. An asteroid impact disrupts agri system, plunging the planet into climate instability, blocking sunlight, & triggering crop failure; food production collapses as supply chain breakdown, & communities struggle to adapt with no external support.

C4. Agri systems operates in a state of debt freedom & carbon neutrality, where farmers are financially empowered, production is driven by regenerative practices, & food is grown in harmony with nature, contributing to climate stability and long-term sustainability.

C4b (adapted to avoid incompatibility with A4): Agrisystems operate in a state of debt-free, carbon-neutral farming, where farmers are financially empowered to invest in highly technical farms that can withstand harsh environmental conditions and ensure long-term sustainability.

Write scenario synopsis



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Write a scenario synopsis - instructions

1. Write a short text describing the state of the driving forces in your scenario. It could begin with the sentence, 'In 2050, the UMRBPL is...'.
2. Integrate other factors into the narrative by describing a state that is compatible with your scenario frame.
3. Finally, choose a catchy title for your scenario.

“Silicon and Soil in Post-Nature Marikina”

(made with the help of AI)

In 2055, the Upper Marikina River Basin Protected Landscape (UMRBPL) is a conflicted frontier between techno-driven conservation and sprawling industrialization. Once a lush watershed supporting diverse flora and fauna, it now stands as a **barren exotropolis**—a highly industrialized zone where exotic and invasive species thrive in degraded ecosystems. These species, introduced through unchecked trade and urban expansion, have overtaken native biodiversity, altering ecological functions and degrading the once-resilient natural corridors that buffered the metropolis from environmental extremes.The ecosystem services that once naturally supported Metro Manila—like clean water, fertile soils, and flood control—are now delivered through synthetic substitutes or left diminished by overexploitation and fragmentation.

Governance under the Protected Area Management Board (PAMB) has transformed dramatically. It is now driven by **advanced AI systems**, with predictive analytics and satellite-integrated sensors that continuously monitor biodiversity loss, water quality, and illegal encroachments. These AI nodes also facilitate **rapid decision-making**, simulating conservation outcomes and recommending adaptive measures in real time. Indigenous knowledge systems are digitally archived and consulted by AI as part of decision-making algorithms, ensuring cultural and ecological integrity are respected. This integrated AI system produces **automated management plans** every year, which are made widely available to all inhabitants.

Enabled by green bonds and sovereign climate finance, **farming communities operate debt-free, carbon-neutral and high-tech farms**, harnessing resilient seed technologies, hydroponics, and AI-assisted irrigation. These innovations ensure **strong food security for the basin's inhabitants**, but make them vulnerable to global shocks linked to energy resources.

Tourism in the UMRBPL has morphed into a niche activity centered around **"resilience tourism."** Visitors use adaptive gear and participate in guided AI-nature walks that simulate the basin's historic biodiversity through augmented reality. However, tourism is tightly regulated, with access controlled by biometric entry systems and carbon quotas.

Appendix 6 Information about the UMRBPL site

History:

- 1904 (EO 33) Protection of the Marikina Watershed Reserve (MWR) water supply source of the City of Manila (25,913.15 ha)
- 1909 Land surveying of MWR (27,980.22 ha)
- 1915 (EO 14) expansion of MWR by 188.41 ha
- 1915 (EO 16) reduction of MWR by 1,092.91 ha, in favor of private entities (25,008.65 ha)

- 1935 Gov Frank Murphy's Proclamation No. 854 reduction of 12.22 ha for privatization (24,996.43 ha)
- 1965 Cessation of water extraction due to degrading water quality
- 1973 (PD 324) removal of 1,728.75 ha for disposition under Public Land Act (23,267.68 ha)
- 1977 Proclamation No. 1636 established as National Park, Wildlife and Game Preserve but subject to private rights
- 1986 Proclamation No. 2480 further exclusion of 4,424.38 ha for resettlement purposes under the Public Land Act
- 1990 PP 585 segregated 1,430 ha for the Social Forestry Program
- 1992 NIPAS Act (RA 7586) initial component
- 1995 PP 635 removal of two parcels to address the increasing population needs and waste disposal problem. MWR peripheral areas can now be used for purposes even those in conflict with reservation/protection after due consideration and study
- 1996 PP 776 further exclusion of 130.74 ha for the government housing program
- 1996 PP 799 establishment of 750 ha Freedom Valley Resettlement near MWR's center
- 1996 PP 901 establishment of 600 ha Pamitinan Protected Landscape in Rodriguez, Rizal
- 2011 PP 296 MWR was proclaimed as the Upper Marikina River Basin Protected Landscape (UMRBPL) as a response to 2009 Typhoon Ondoy
- 2018 ENIPAS Act UMRBPL Legislation (26, 125.64 ha)

Inhabitants

- Total 2024 Population: 74,628 (exceeded the carrying capacity limit by 45,821)
- Tagalog, Visayan, Ilocanos, and other local groups who are tenured migrants (i.e., occupants who have continuously occupied the protected area for five years prior to its designation as such)
- Indigenous People: Dumagat Remontados
- Estimated poverty incidence: 10%

Governance

Protected Area Management Board Council Members (25 members): DENR R4A RED; Congressman (Antipolo District); Provincial Planning Development Officer; Municipal/City Mayors; MIRIAM - PEACE/ESI, Academe; PDRF, NGO; Barangay Captains; DPWH Representative; LLDA Representative; Tribal Chieftain; NEDA representative; Private Sector

Composition

- Ecotourism sites
- Settlements (Survey and Registration of Protected Area Occupants or SRPAO)
- Road infrastructure (DPWH projects)
- Dams and hydroelectric infrastructure with Special Use Agreement for Protected Areas (SAPA)
- Spreadout forest disturbances, accompanied by forest regrowth (Catudio, 2025)

Importance of forest cover for flood and landslide regulation was simulated by Rawlins et al., 2017.[2]

[2] Rawlins et al., 2017. Understanding the Role of Forests in Supporting Livelihoods and Climate Resilience: Case Studies in the Philippines. World Bank: Manila, Philippines.

Appendix 7 Day 3 training

Morning : PPA logistic, preparation, practical experiences

The work sequence

Option 1: 6-day workshop

- Fast
- Less in-depth
- Pressure on experts
- Need for additional work sessions

Option 2: 4 to 5 2-3 day workshops over 4 to 6 months

- More time for reflection
- More in-depth analysis, more comprehensive results
- Need to ensure everyone's ongoing commitment
- More expensive

Intermediate options

See Methodological Note Participatory Workshops

3

General preparation

The support group

- Representatives of authorities and organizations with the ability to facilitate or block work
- Agreement before starting with individual consultations, then "official" start-up at a group meeting
- A diversity of bodies capable of conveying results in a fair and balanced manner
- No direct intervention in the "technical" process, but for problem solving
- Regular updates on work progress
- Involvement in the following stages of communication, information and action

4

Preparing expert workshops

- Workshops are activities involving **"experts"** to better understand the multiple dimensions of the system.
- Experts participate as **individuals**, not as representatives or spokespersons for organizations or interest groups.
- Ideally 20 experts

- Expert selection **criteria**
  - ***Knowledge***
  - ***Socio-economic diversity***
  - ***Open-mindedness and tolerance***
  - ***No segregation***
  - ***Availability***

See Methodological Note Participatory Workshops

5

Setting up workshops

Resource persons (facilitators)

- Preferably a team of two facilitators
- Neutral and trained in the method
- At least one person trained in basic software

- Conducts and manages sessions step by step
- Does not interfere with content
- Ensures that all experts have an equal opportunity to contribute
- Ensures that decisions are taken after agreement using clear rules

6

Equipment and logistics

Hardware

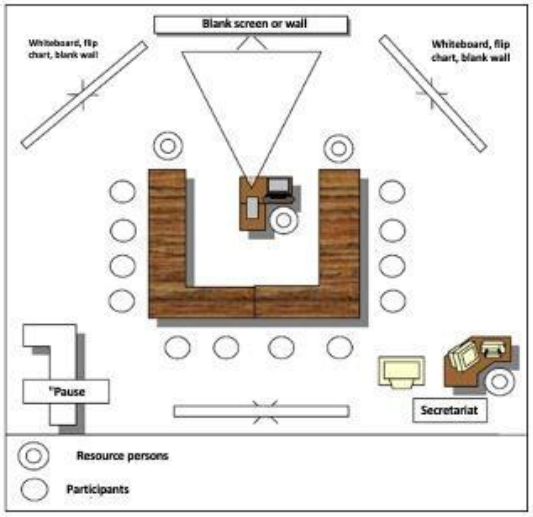
- Visualization: boards, posters, colored cards, felt-tip pens, fastening material, computer, projector, projection surface
- A room equipped with electricity, tables and chairs, preferably arranged in a U-shape

Logistics

- Provision of workshop organization costs
- Financial compensation for experts if necessary
- But it's not a "project" (or is it?)

7

Workroom equipment



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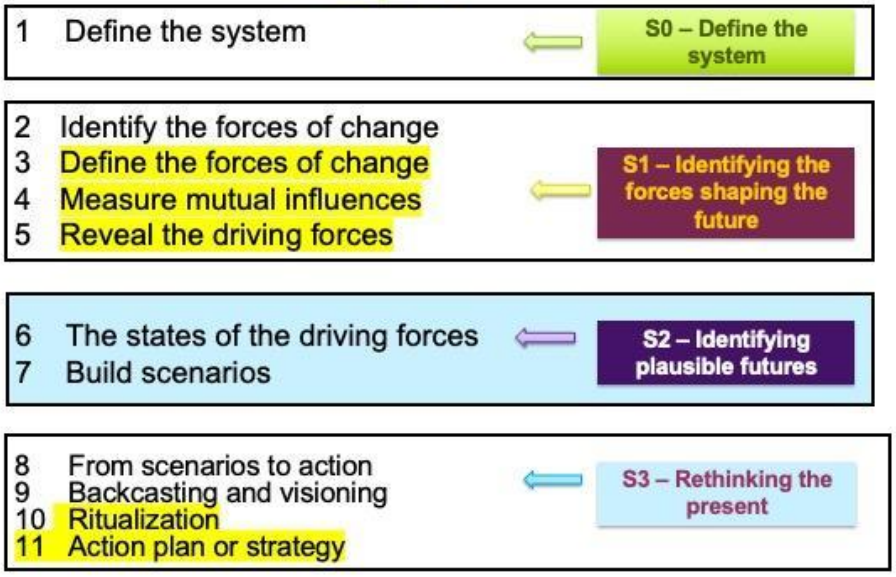
Example of PPA adaptation

Context of rehabilitation, forest landscapes in Congo, Cameroon, and Madagascar

The stages of participatory prospective analysis, adapted



10

Background

The restoration of forest landscapes

- The question is as follows: "What are the possible futures desired by the stakeholders in this territory? How can agroforestry or forestry plantations fit into these desired futures?"

This is a territorial approach

- The territory is decentralized, often consisting of mosaic landscapes combining forest and agriculture.

The future is used for planning purposes.

11

Work organization

Three-day workshop

- It is a compromise

Need to shorten certain stages

- Defining the factors for change: using the triangle of futures and "fears and hopes" to begin the work, then a pre-established list of factors of change is reviewed and amended by the participants.
- Structural analysis is replaced by a faster voting system.
- For the rest, the synopses are produced using the morphological table, which is the same method and still a time-consuming part of the process.

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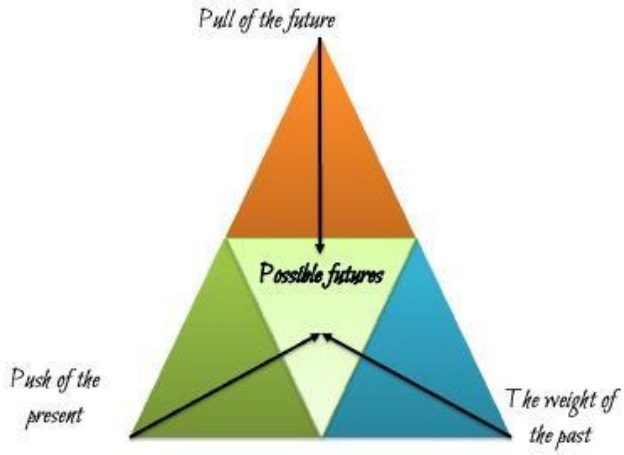
The triangle of futures



Innovations in the procedure

Ritualization following the vision

- Depending on the context, we organize an event to mark the participants' adoption of a shared vision, so that they remember it and realize its importance for their future decisions. It must become a reference point for everyone.
- We also produce media and posters to remind participants of the vision they have created and the action plan they have decided on.

Planning

- After returning to the present through backcasting, participants consider the actions that need to be taken in the short term to achieve their long-term vision. The horizon of the plan may be, for example, five years, while the horizon of the PPA may be 25 years.

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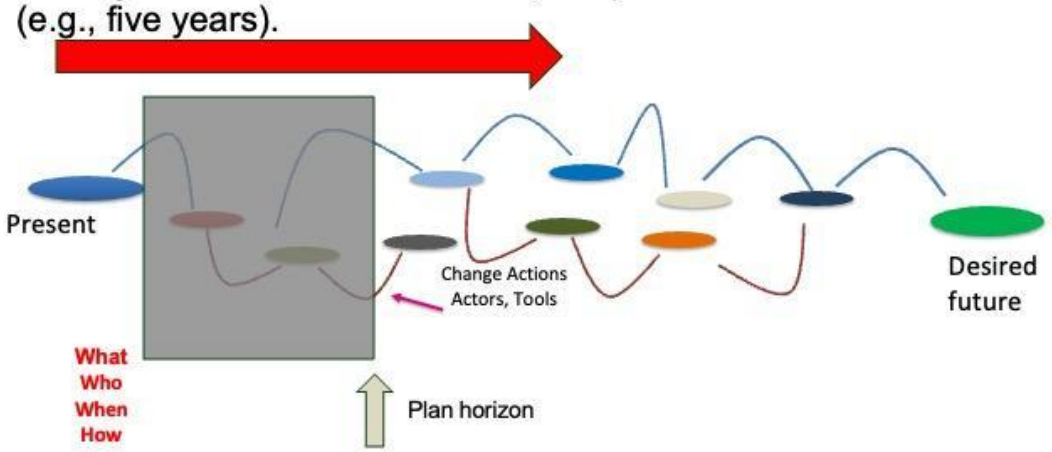
Developing the action plan

- **The plan:** resume the journey by starting from the present and moving toward the desired future; the plan must have a time frame (e.g., five years).

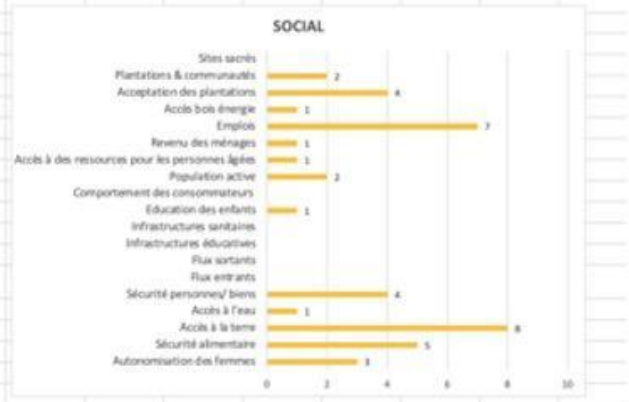


Procedure in Dzeng and Yoko

- Identify forces of change & define forces of change □ 1) fears/hopes/trends method 2) based on a list reviewed during training and discussed again in a plenary session organized by STEEP (Social, Technical, Economic, Environmental, Political) □ List of forces of change
- Reveal driving forces □ individual reflection + ranking and plenary discussion □ List of driving forces
- State of driving forces □ individual reflection on desirable, undesirable, trend and disruptive states + plenary discussion and pooling □ Morphological table
- Framework □ Desired/undesired/trend (BAU) synopsis
- Desired synopsis □ Vision □ Ritualization
- Backcasting □ Scenarios □ Desirable scenario □ Plan

Plenary discussion – vote 1 – Social

	Nom	Fréquences
S1	Autonomisation des femmes	3
S2	Sécurité alimentaire	5
S3	Accès à la terre	8
S4	Accès à l'eau	1
S5	Sécurité personnes/ biens	4
S6	Flux entrants	
S7	Flux sortants	
S8	Infrastructures éducatives	
S9	Infrastructures sanitaires	
S10	Education des enfants	1
S11	Comportement des consommateurs	
S12	Population active	2
S13	Accès à des ressources pour les personnes âgées	1
S14	Revenu des ménages	1
S15	Emplois	7
S16	Accès bois énergie	1
S17	Acceptation des plantations	4
S18	Plantations & communautés	2
S19	Sites sacrés	
		40



PPA in Yoko

Ritualization in Madagascar, Dzeng and Yoko

Morphological Table

Driving Forces	1	2	3	4	5
A. Access to quality education	Every family has at least one child in higher education	Education is generally improving	School closures, declining enrollment rates	All family members have access to quality education because education is free	Everyone is illiterate, no teachers
B Access to quality healthcare	Free healthcare for certain illnesses and pregnant women, infrastructure with specialists in all fields.	Improved local health, reduced mortality rates	Closure/absence of health centers, access restricted to the wealthy, higher mortality rates	A son of Dzeng is Minister of Public Health, health for all by 2050	Discovery of a vaccine against epidemic diseases
C Processing of agricultural products	Each village has at least one machine for agricultural processing, local product processing plants	Significant improvement in agricultural product processing	Lack of tools for processing local products due to high prices	Cheaper machine production plant set up in Dzeng	All local products are processed on site following the widespread use of processing machines
	Desirable	Trend	Undesirable	Disrupti on	

Morphological table

Driving Forces	1	2	3	4	5
D Electricity	All households have access to stable, low-cost electricity	The majority of households have access to electricity	Dzeng plunged into darkness, power cuts,	An investor has built a power plant in Dzeng	The price of solar panels has fallen sharply
E Road conditions	Main and secondary roads are well maintained and paved with bridges and lighting	Improvements have been made, with better access to villages	Broken bridges, some villages cut off from neighboring villages, deteriorated roads,	An investor has set up a factory and is maintaining the roads to transport its products.	Climate event: all bridges are broken
F Soil quality	Fertile soil, no need for chemical inputs for organic farming.	The soil is very unproductive, Dzeng can no longer produce cassava as before	Soil generally unsuitable for agriculture	Drastic change in farming practices to restore soil fertility	Establishment of a company promoting new techniques
G Collective action	Working together for the same cause	Barbarism	Barbarism, inertia	Awareness, behavioral change	
H Biodiversity	Protected forests	The broken forest	Broken forest,	Each family has a forest	Awareness of the

Dzeng's vision for 2050

- In 2050, the quality of life of Dzeng's inhabitants has greatly improved because, collectively, citizens work hand in hand with each other and with the authorities, respecting established rules aimed at the same goal: thus, quality education is accessible to all family members, healthcare is free for certain illnesses and for pregnant women, there are healthcare facilities with specialists, local products are processed locally thanks to the widespread availability of processing machines, and household incomes have improved. All households have access to stable, low-cost electricity, children can study in the evening, and roads are lit, resulting in fewer accidents at night. The main and secondary roads are well maintained and often paved with bridges. The soil is fertile and there is no longer any need for chemical inputs, so organic farming products has become more profitable in Yaoundé. The forest and nature are protected, and Dzeng still has many species that contribute to the well-being of the local population.

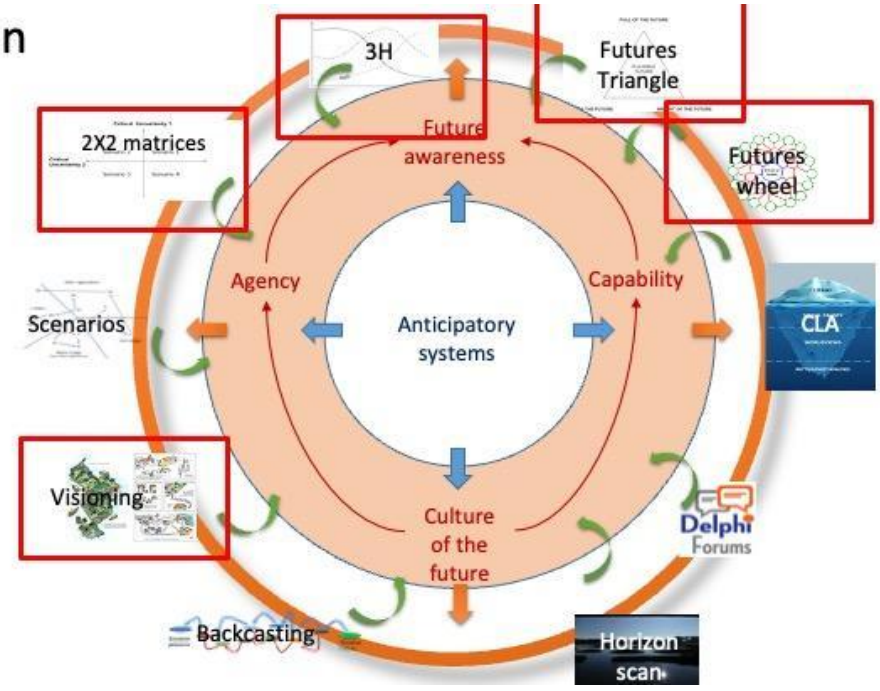
Poster: "From analyzing the future to an action plan – Self-determination for the people of Yoko, Cameroon"

Morning : other tools for exploring the futures

Training in participatory scenario co-development

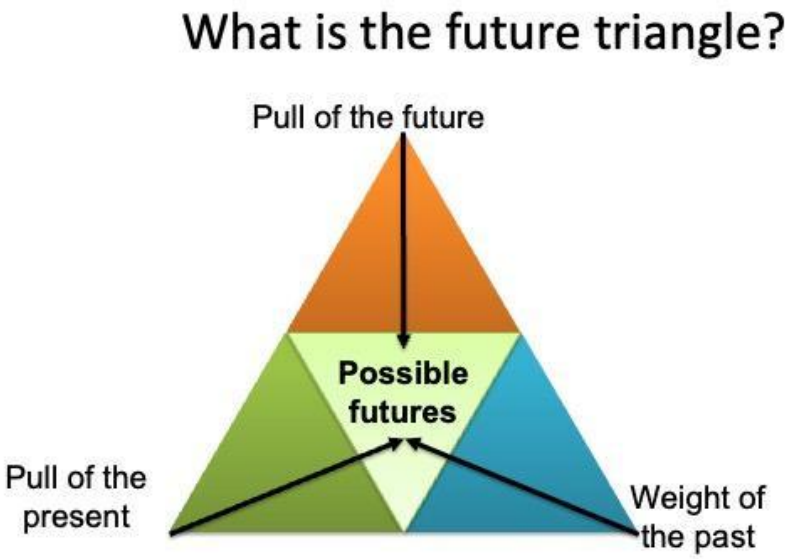
Day 3 - Additional anticipation tools

Anticipation toolbox

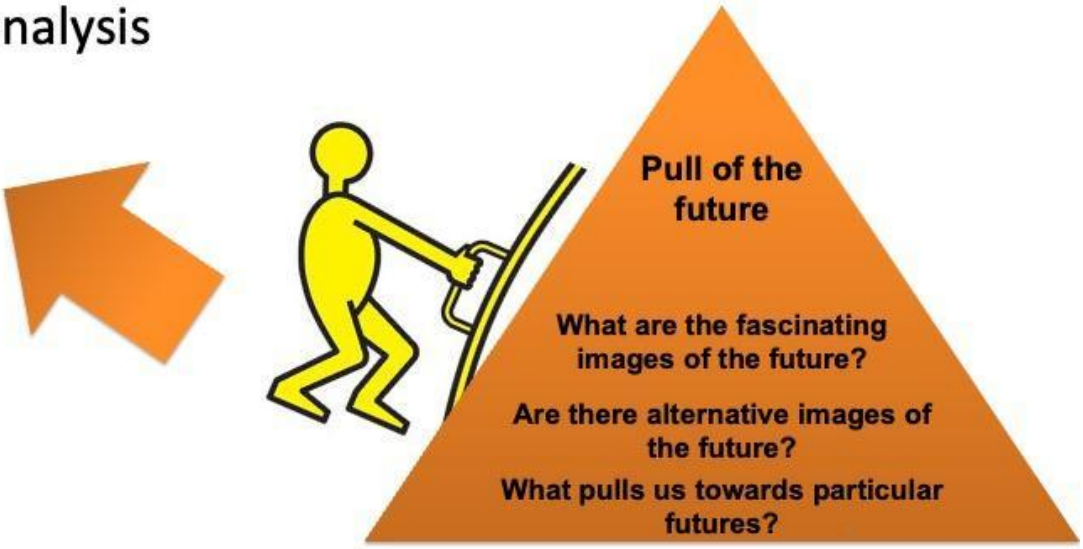


The Futures triangle,

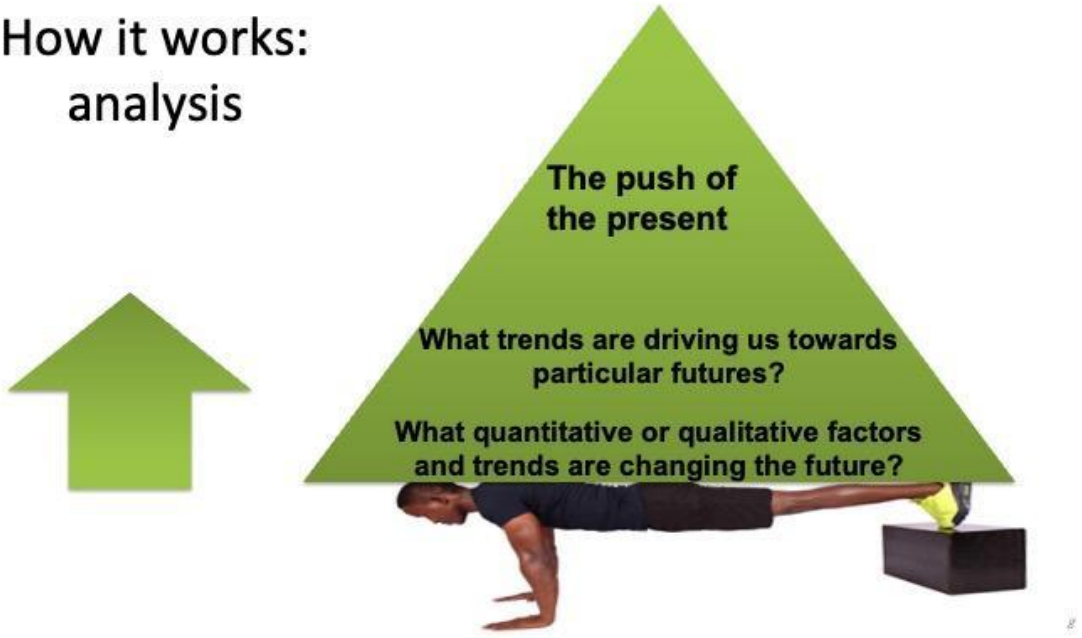
The Futures triangle



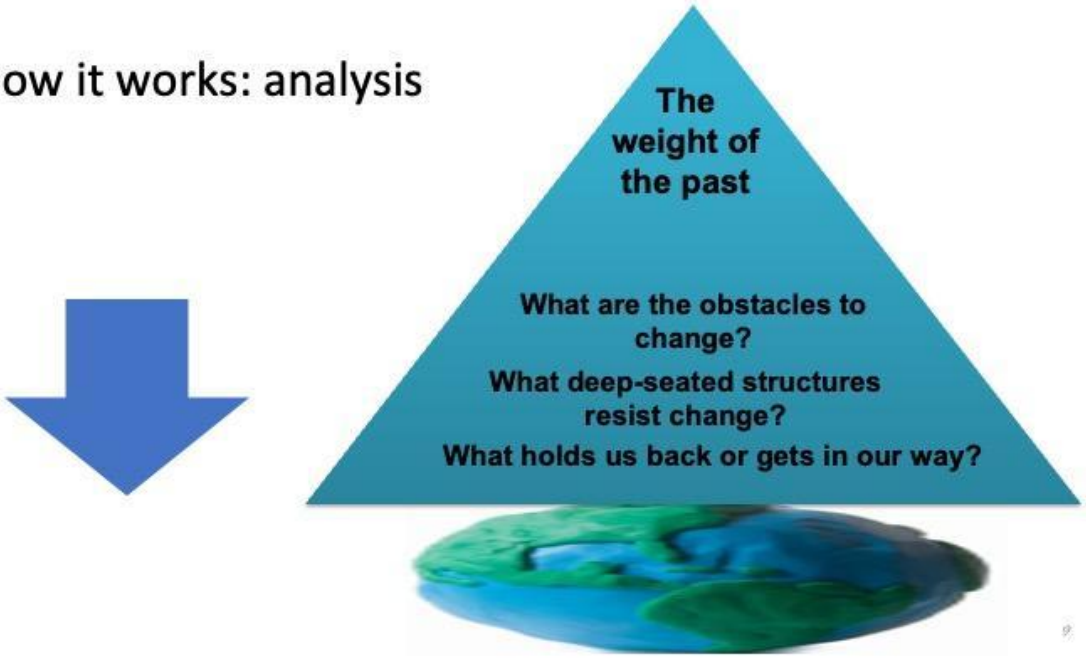
How it works: analysis



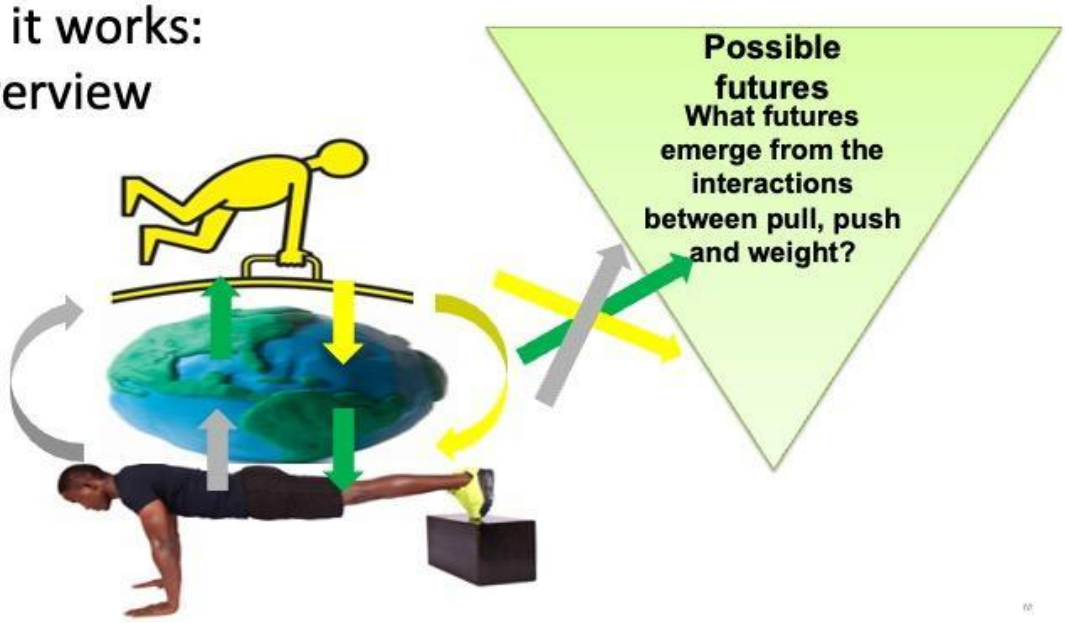
How it works: analysis



How it works: analysis



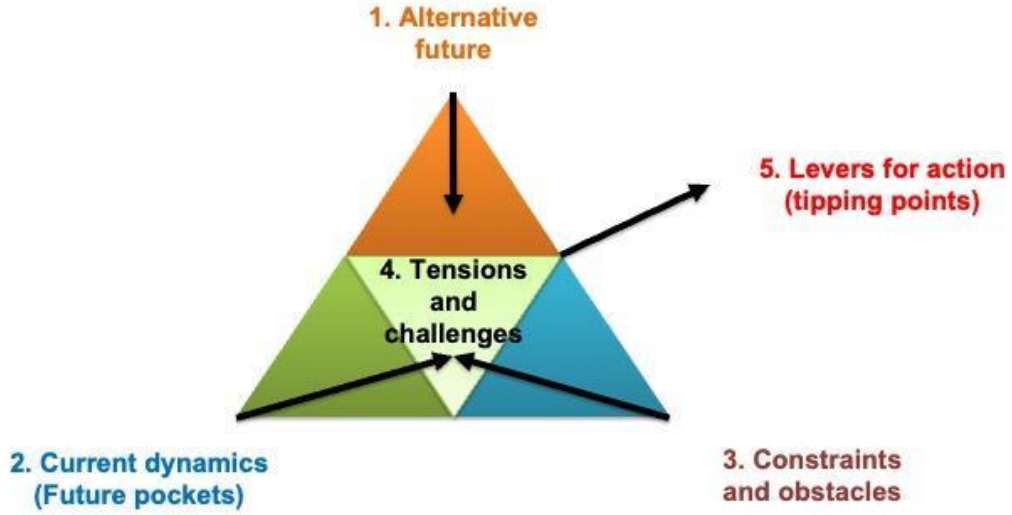
How it works: overview

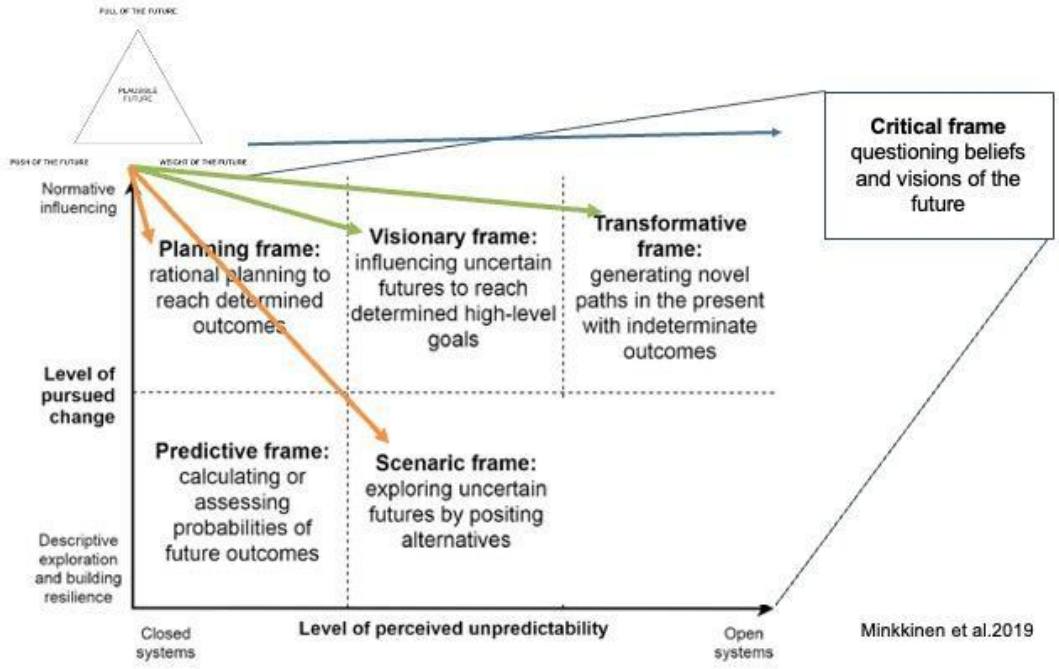


But this is the classic use…

- We can also use the Futures triangle not in an exploratory framework but in a transformative one.
- To do this, we associate it with "aspirational" futures (or not) developed in another exercise (typically, a PPA)

How we can also use the Futures Triangle





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- https://youtu.be/LGOnJDek5To (CLA)
- https://www.futuresplatform.com/blog/how-can-we-predict-plausible-futures

Critical Uncertainty Matrices

Scenario planning with critical uncertainty matrices (or 2x2M)

What is a critical uncertainty matrix (or 2x2M)?

- A strategic planning tool for uncertain environments
- Essentially for businesses, government, and non-profit organizations
- Ease and flexibility of use, explains its success
- Method for situations requiring scenarios
  - From 1 day to several months
  - From 3 to over 100 people

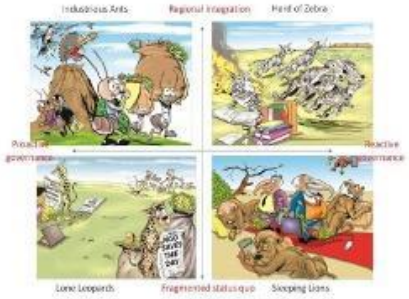
What is a critical uncertainty matrix (or 2x2M)?

- A two-step method:
  - Analysis of ***change factors***

  > powerful trends likely to shape the future even if their development and impacts are uncertain; uncontrolled elements that may influence our internal elements and which, depending on how they evolve, could cause our project to succeed or fail

  - Development of ***scenarios*** using the "two axes" method

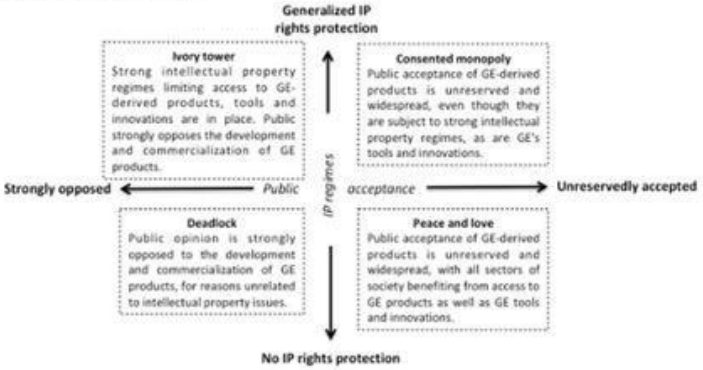
  > a set of thought experiments aimed at identifying plausible paths between the present and the future, as well as the types and scale of sudden shocks that could take us by surprise



Example of use

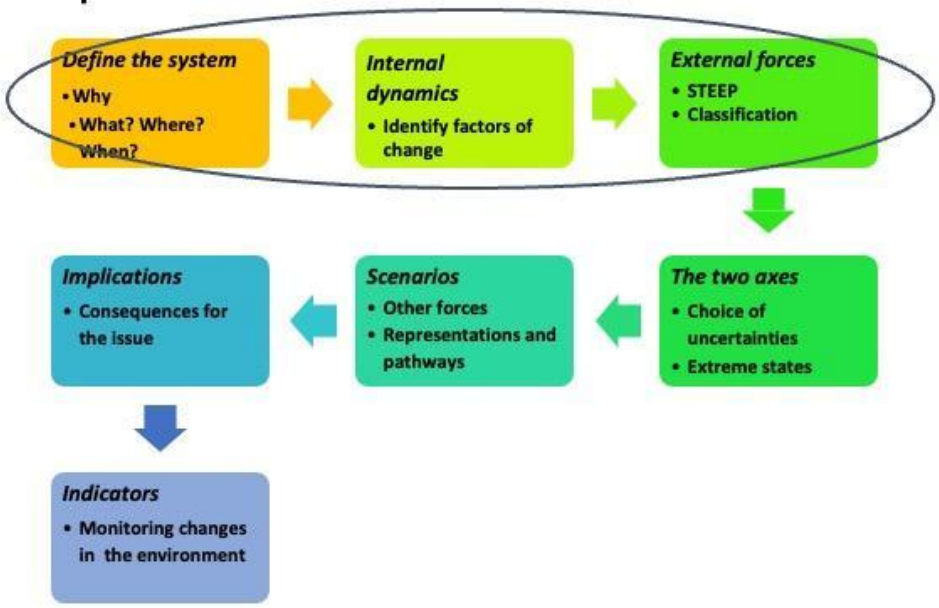
"WHAT CONTEXTS FOR GENOME EDITING IN 10 TO 15 YEARS?" - UMR AGAP, September 2022 (Thaura Ghneim-Herrera, Claire Billot, Robin Bourgeois, Sélim Louafi)

- ?: Potential for the application of genome editing in agricultural research and agriculture in France in 10-15 years *(and to encourage discussions on responsible research and innovation among scientists)*
- Participants: knowledge and expertise in crop genetic improvement, including biotechnology, agricultural biodiversity, law, and the social and economic impact of agricultural technologies



One of the three pairings of factors and their future states based on six critical unknown factors identified (a total of 12 alternative futures)

The steps



Internal dynamics

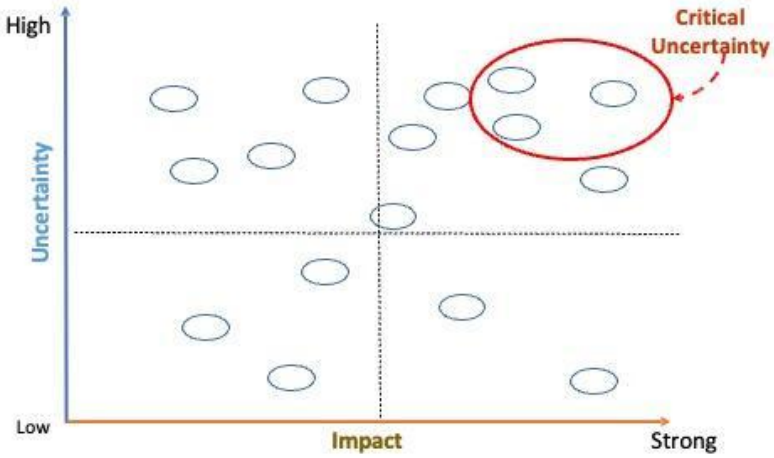
- Identify the constituent elements of the system (of the issue)
- Elements that will be **influenced by the external environment**
- Prepared in advance or carried out during (or both)

Identify **external factors of change**
= Factors in the broader and operational environment

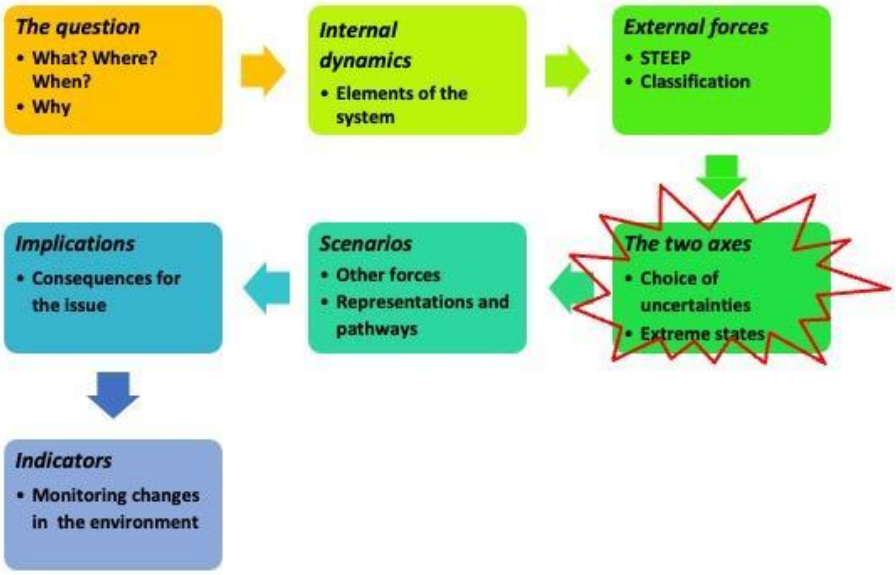
- Use STEEP
- Neutral, conceptual, objective wording

External driving forces: choice

- Importance/impact on the system vs degree of uncertainty
  - Different classification methods: individual/aggregate; consensus
  - Different scales: numerical (1 to 10), categorical (low, medium, high)

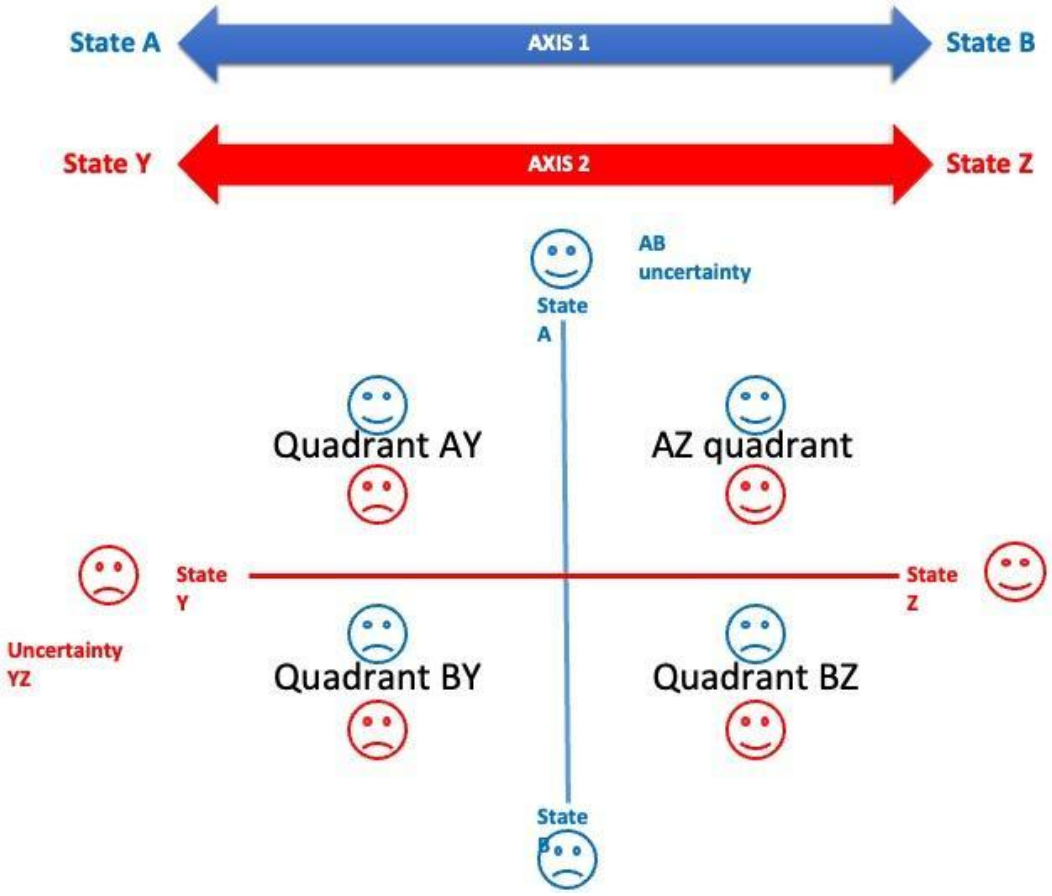


The steps



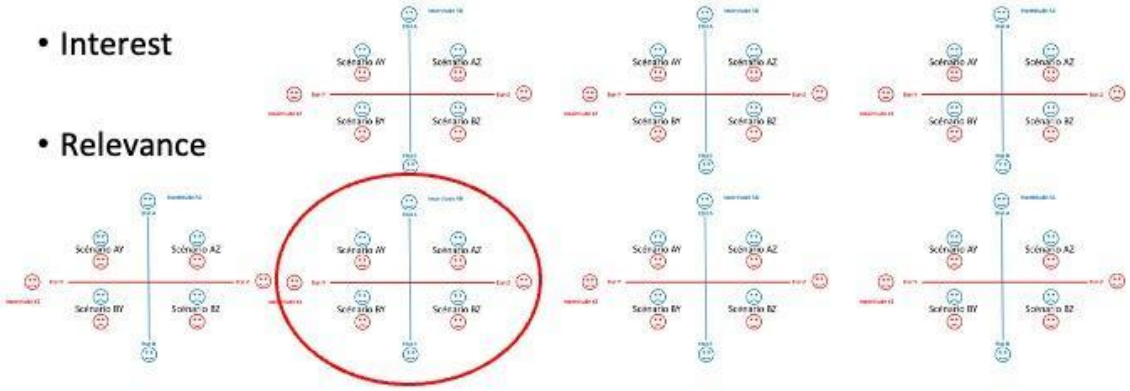
The two axes of the matrix

- If there are more than two uncertainties: consider different combinations
- Avoid pairs of correlated axes (interdependent factors)
- Choose two of the STEEP dimensions
- Define the ends of the axes (contrasting assumptions)

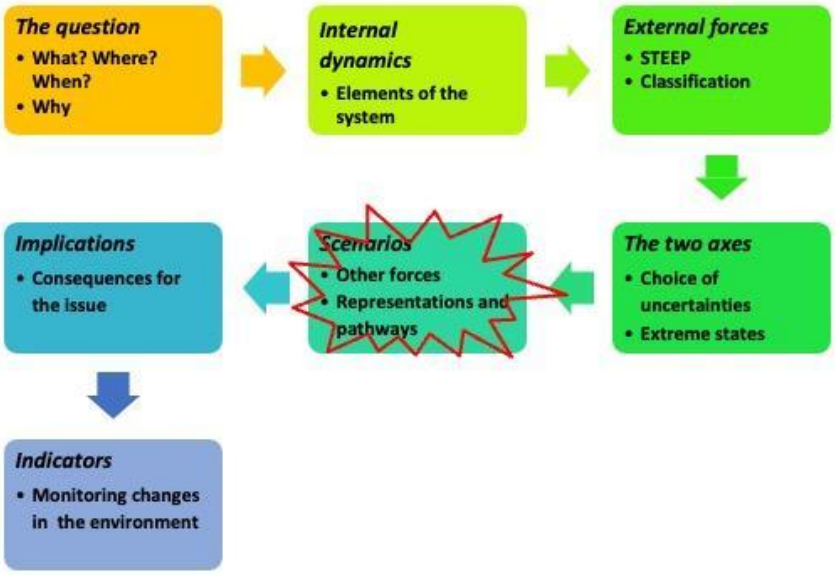


The two axes of the matrix

- Compare combinations
- Interest
- Relevance



The steps



The scenarios

- Give each synopsis a temporary name

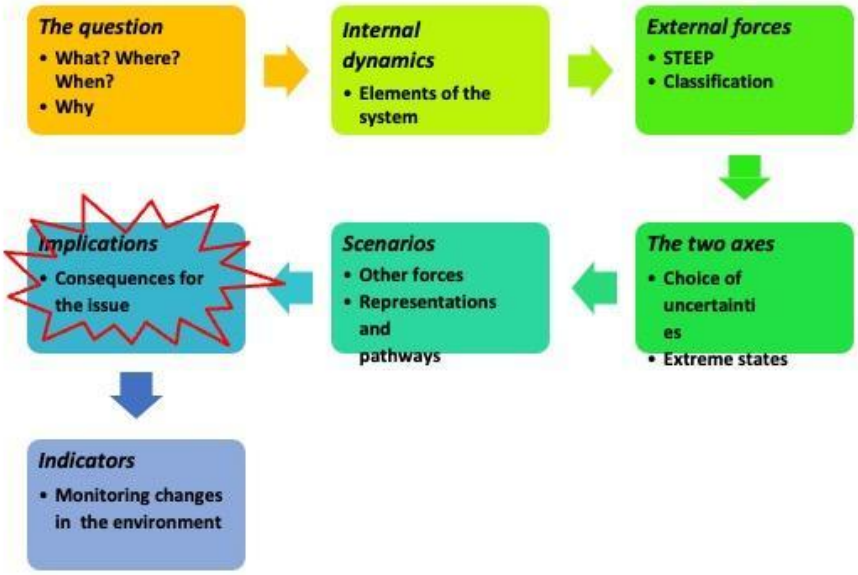
- Describe each synopsis in narrative form (as a story)
  - Identify the main characteristics in bullet points
  - Take other external factors/combinations into account
  - Imagine the corresponding states (reinforcement)
  - Organize them into a system
  - Write the narrative (relevance, interest)

- Produce your story/journey
  - Start from the future (backcasting)

- Rename the scenario

Source: Vervoort et al. 2014

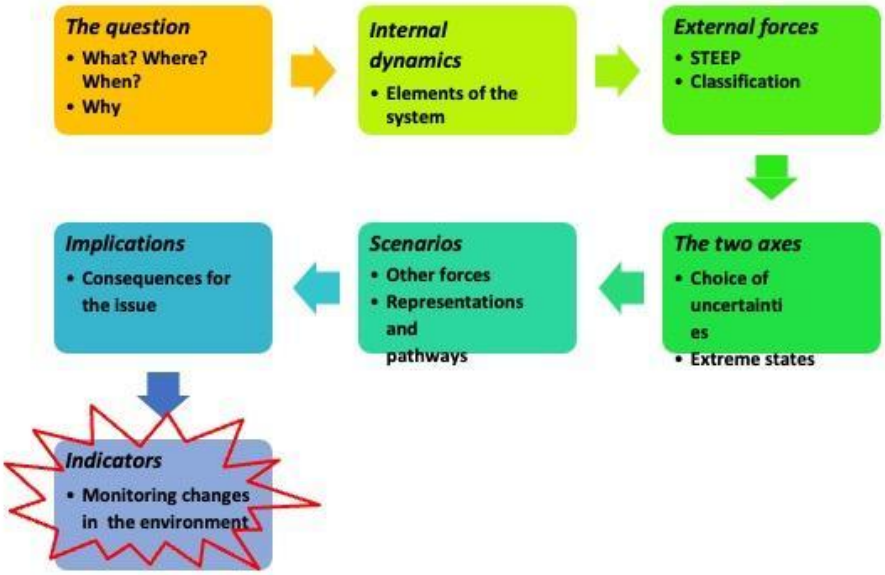
The steps



The implications

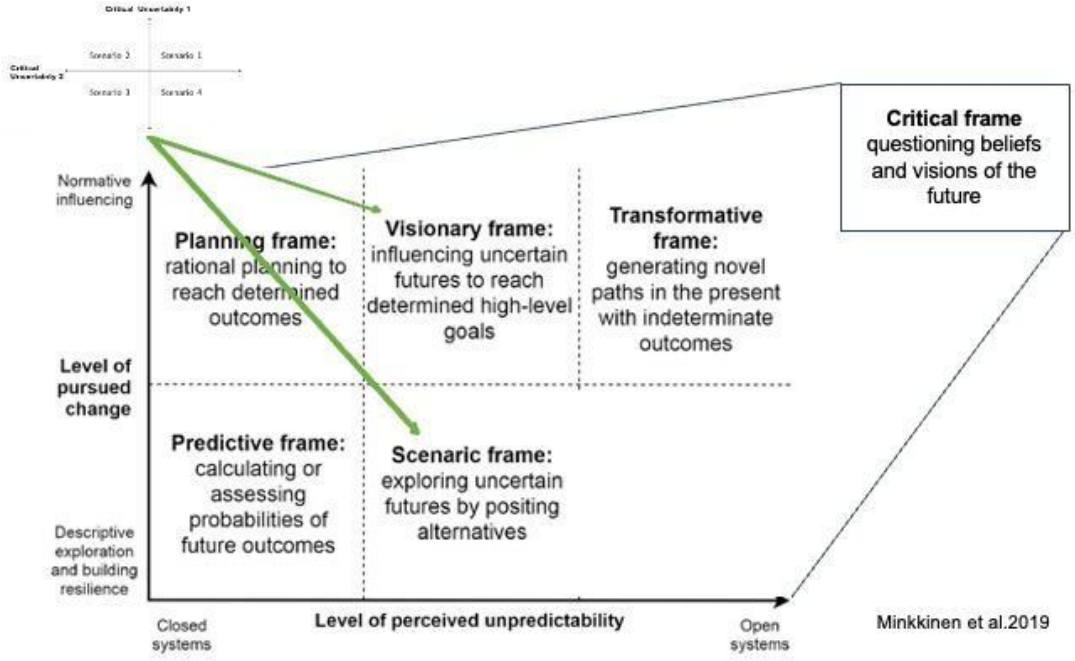
- Return to the present day and the issue at hand - "*If all futures come to pass, what does that mean for my project and its implementation?*"; "*Is my project robust?*"
- Analyze the implications of the different scenarios on the constituent elements of the system:
  - Produce "robust" strategic options and avenues for research
  - Give new meaning to the present
  - Identify opportunities for collaboration
  - Readjust/modify values
- Use tools such as the wheel of futures

The steps



Indicators

- Establish monitoring - see early warning signs in advance so I can adapt my strategy, know when to switch to plan B, for example.
- Monitor developments and consequences
- Use the pathways developed for each scenario
- Identify turning points and associated factors
- Determine which indicators can be used and how to report them



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The three horizon method,

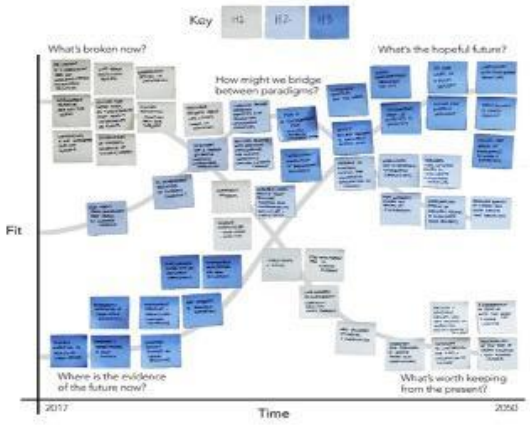
The three-horizon method

What is the 3 horizons method?

Description of a **transformation** from an **established model** (present situation) to the emergence of a **new model** (future situation).

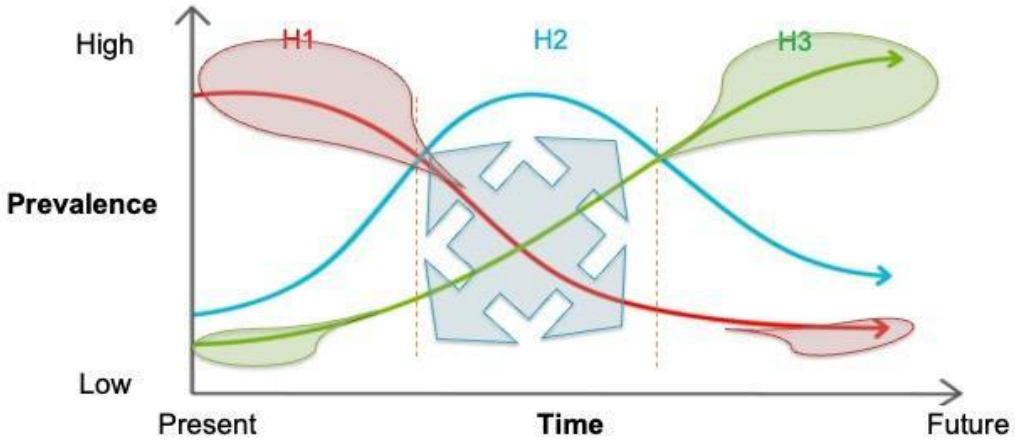
The transformation is based on transition activities at three time horizons and how they are interconnected.

Objective: connect a certain representation of the future with the present



Source:
https://static1.squarespace.com/static/55aa3618e4b0687d367451ce/t/5a4b2e9853450a63fe96330c/1514876610586/3+Horizons.jpg?format=1000w

The 3-Horizons: how does it work?



Source: Adapted from http://www.h3uni.org/wordpress/wp-content/uploads/2017/08/H3U-Resource-Library-3H-Guide-Mapping-_Issue-of-concern.png

How to use it

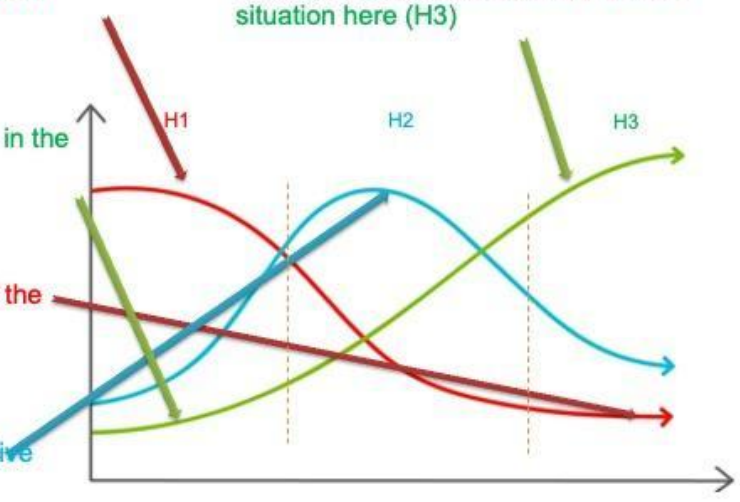
1. Describe the elements of the current situation here (H1)

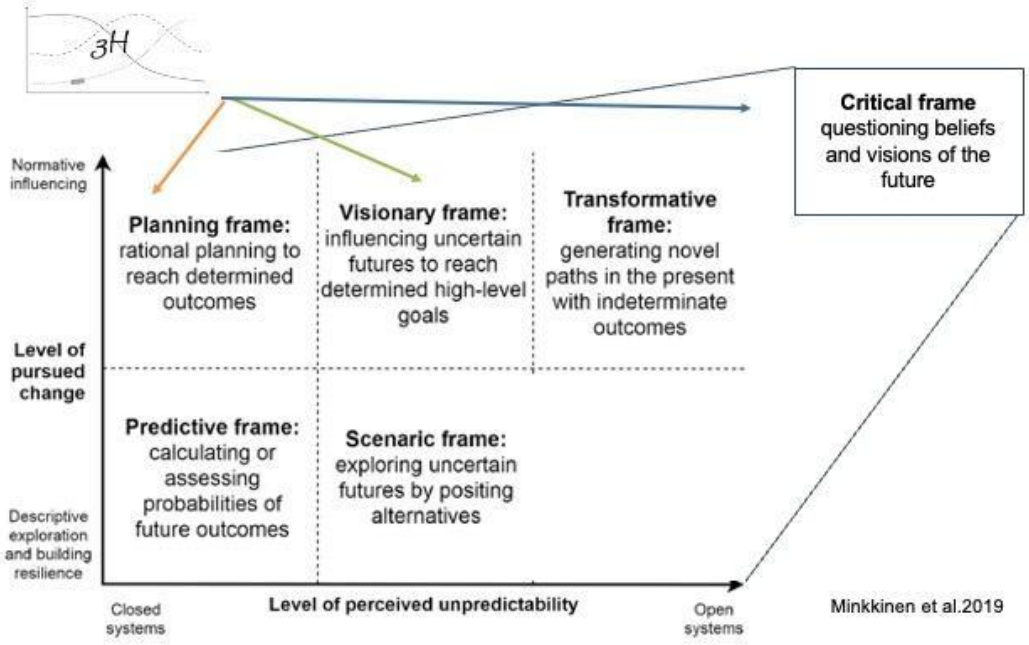
2. Describe the elements of the future situation here (H3)

3. Identify and place future pockets in the present here (H1)

4. Identify and place the remains of the present in the future here H3

5. Fill H2 with tensions, transformative actions





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Scenarios and backasting

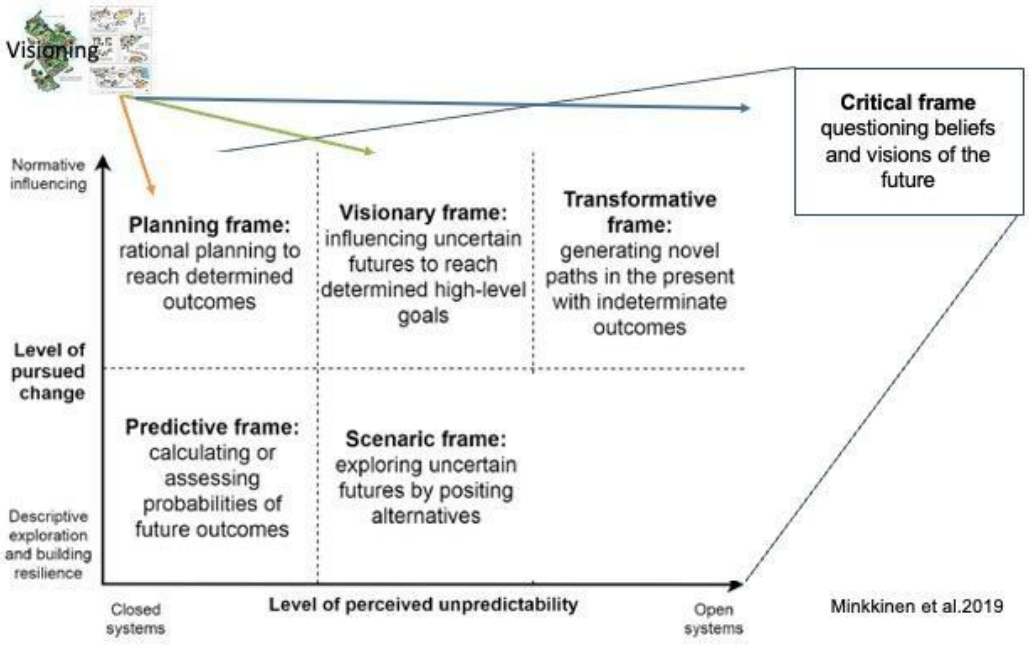
Visioning and Backcasting: building and using utopias

What it is

Simple definitions:

A **tool** that brings stakeholders together to develop a **shared vision of** the future

> **"A mental process in which images of the desired future are made intensely real and called upon to operate as motivators for present action."**
> *http://www.businessdictionary.com/definition/visioning.html*



The futures wheel.

What is the Futures Wheel?

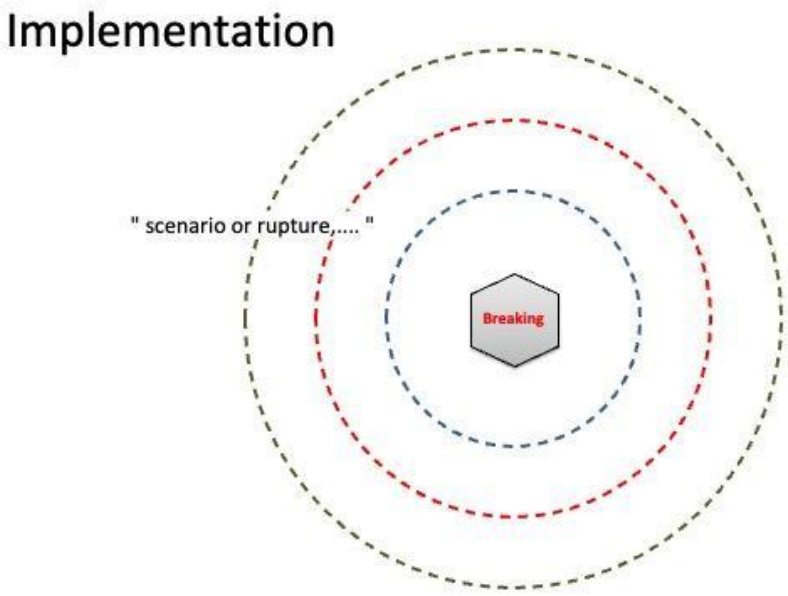
A mind map to explore the direct and indirect consequences of a specific change.

A tool for visualizing and analyzing the potential consequences of an event, trend or decision.

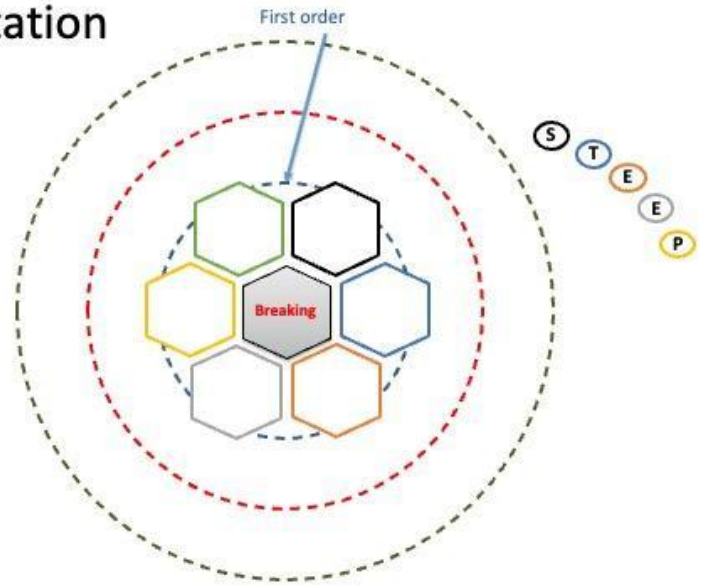
Implementation steps

- ❑ We define the objective of this exercise (the why)
- ❑ We put change at the center, and it becomes dominant
- ❑ We fill in a 1st circle with the most direct negative and positive consequences (STEEP-V).
- ❑ We explore a 2nd circle of direct consequences (+ and -) derived from the 1st circle (STEEP-V).
- ❑ We explore a 3rd circle of direct consequences (+ and -) derived from the 2nd circle (STEEP-V).
- ❑ Connect and discuss results (surprises, synergies/oppositions/reinforcements)

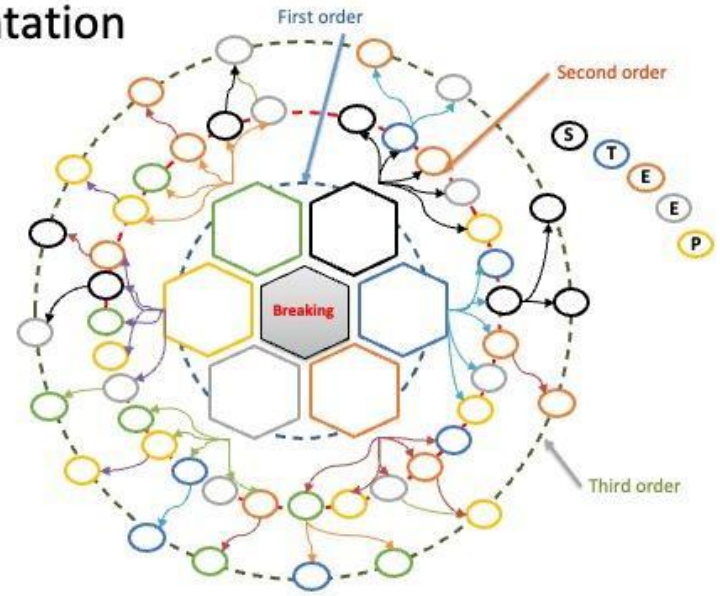
➡ future-proofing, reconnecting with the present

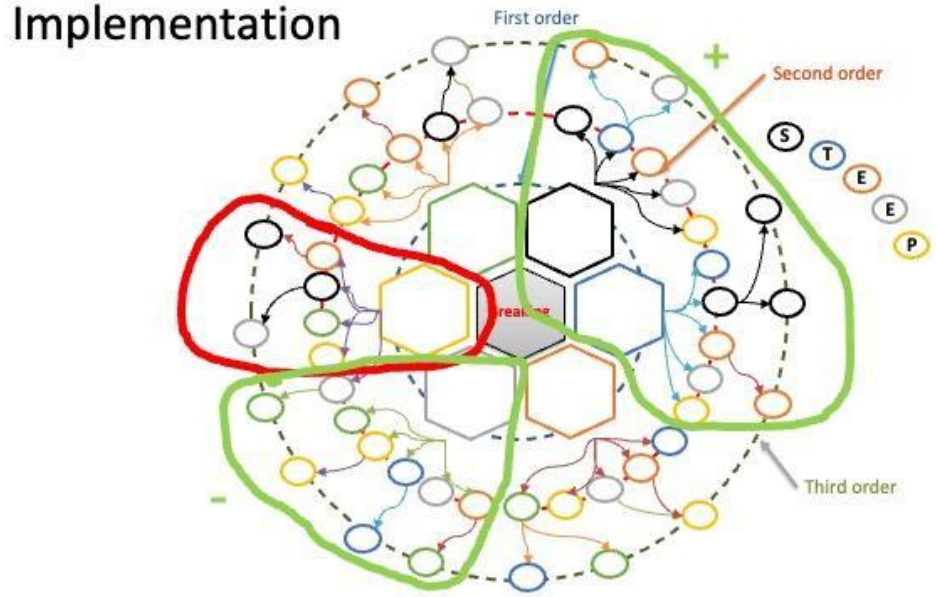


Implementation



Implementation




Implementation
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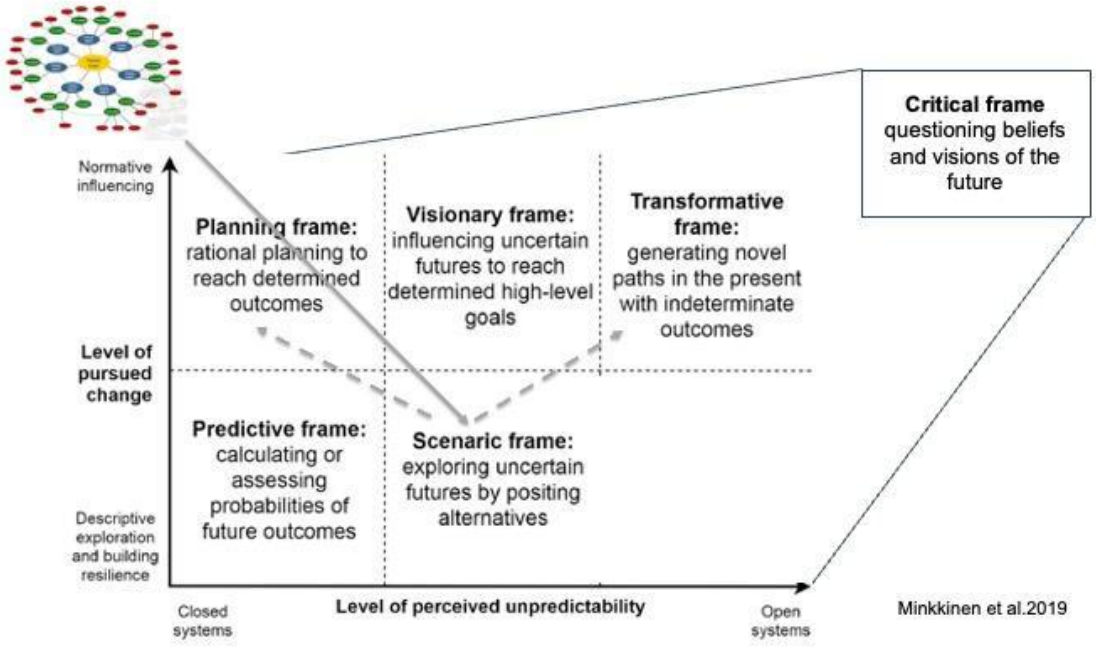
Critical frame
questioning beliefs and visions of the future
Normative influencing
Planning frame:
rational planning to reach determined outcomes
Visionary frame:
influencing uncertain futures to reach determined high-level goals
Transformative frame:
generating novel paths in the present with indeterminate outcomes
Level of pursued change
Predictive frame:
calculating or assessing probabilities of future outcomes
Scenaric frame:
exploring uncertain futures by positing alternatives
Descriptive exploration and building resilience
Closed systems
Level of perceived unpredictability
Open systems
Minkkinen et al.2019

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