(figure 3-x: frontispiece - untitled)
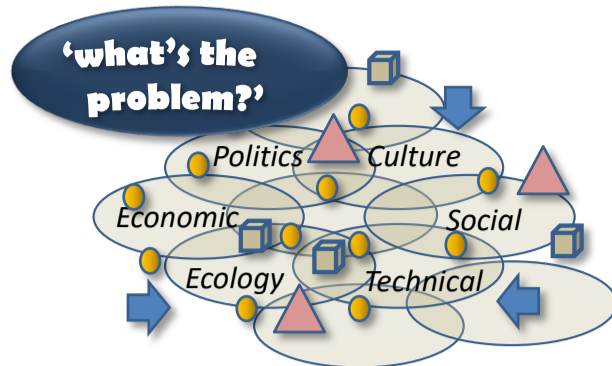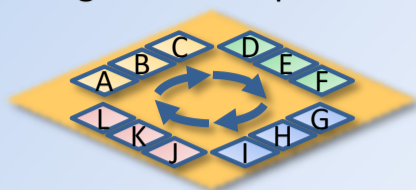
SYNERGISTICS–LANDSCAPE

Figure 3-1

Synergistics is the art & science of ***synergies…*** Here's the basic ideas and a practical Toolkit, with 4 stages & 12 steps

A B C D E F L K J I H G

An overview of the synergistic concepts, methods and tools

'what's the problem?'

Politics   Culture
Economic   Social
Ecology   Technical

Problems, solutions, people, visions, ideas, data, hopes, fears & feelings… all mixed up…

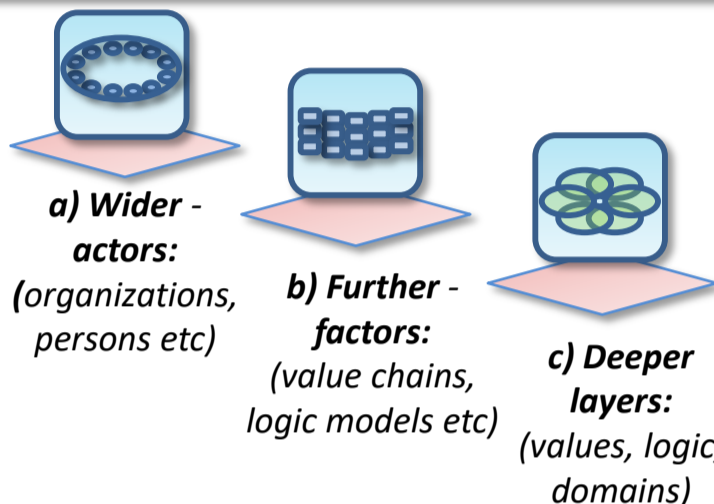*This Low-Carb City example is a mess…*

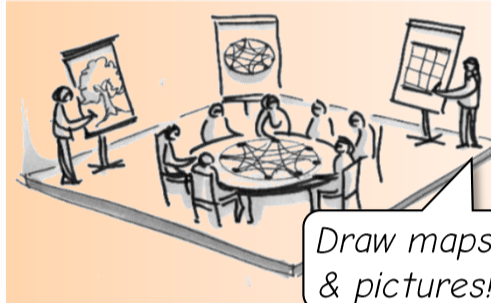*Market failure, policy gap, social conflict, or power game?*

Stage 1: SYSTEMS MAPPING - for - SYNDROMES & BASELINES

Start with systems, problems, challenges in the present:

- ***Wider*** synergies of '***actors'*** at the table;
- ***Further*** synergies of '***factors'*** in the system;
- ***Deeper*** synergies of '***sectors',*** domains, values.

a) Wider - actors: (organizations, persons etc)

b) Further - factors: (value chains, logic models etc)

c) Deeper layers: (values, logic, domains)

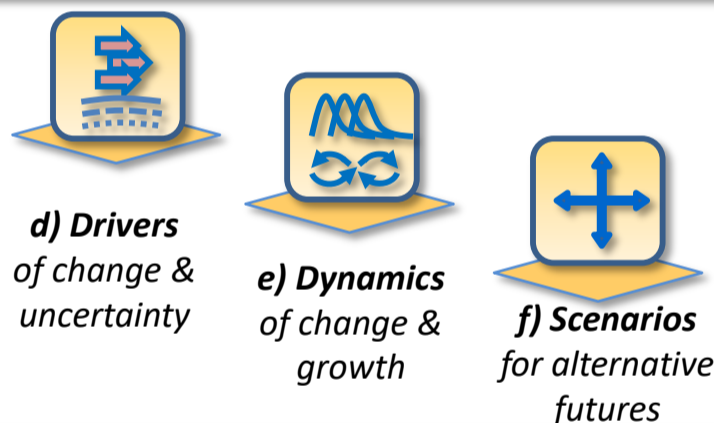*Ask who is involved, what do they want, what do they do?*

Draw maps & pictures!

Stage 2: SCENARIO MAPPING - for - CHANGE & UNCERTAINTY

Then explore the changes & uncertainties in the future:

- ***Drivers*** of change;
- ***Dynamics*** of change;
- ***Scenarios*** for change.

d) Drivers of change & uncertainty

e) Dynamics of change & growth

f) Scenarios for alternative futures
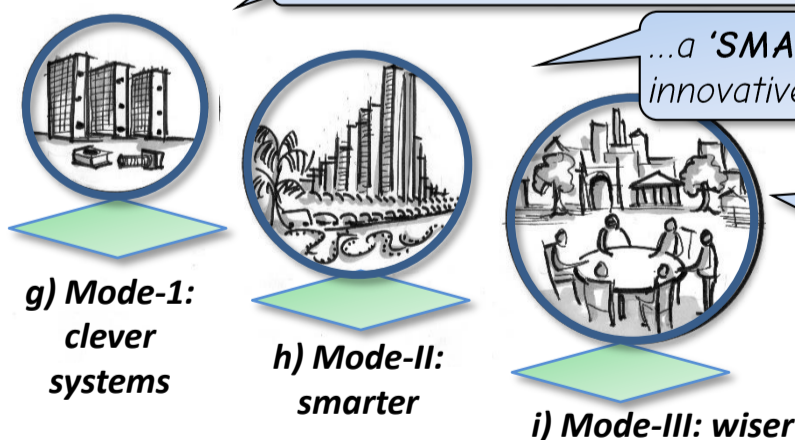
So which scenario is true??

All are true 'what if' questions

Stage 3: SYNERGY MAPPING - for - COLLECTIVE INTELLIGENCE

Then create future visions in 3 '*Modes'* of transformation:

- ***Mode-I,*** '*CLEVER'*;
- ***Mode-II,*** '*SMART'*;
- ***Mode-III,*** '*WISE'*.

…a 'CLEVER' city is a large complex machine

*…a 'SMART' city is competitive, innovative, but myopic & selfish*

…a 'WISE' city works with the 'deeper city mind'…

g) Mode-1: clever systems

h) Mode-II: smarter

i) Mode-III: wiser

So how to get from 'smart' to 'wise'??

Stage 4: STRATEGY MAPPING - for - PATHWAYS to ACTION

Then connect the future vision to present action:

- ***Pathways*** for transformation;
- ***Route-maps*** for strategies & plans;
- ***Management*** for actions & feedback.

j) Pathways from smart to wise

k) Route-maps from now till then

l) Management for action
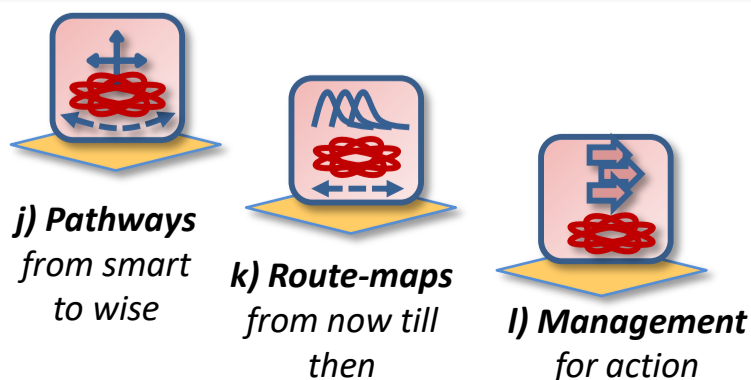
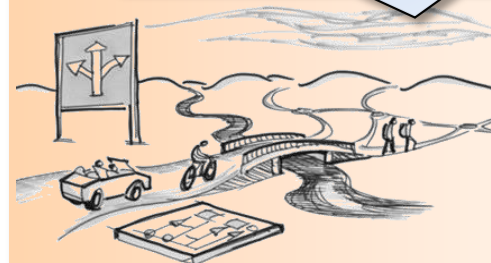*With pathways 'from smart to wise' you draw the map as you go*

Figure 3-2

SYSTEM–MAPPING

Stage 1: Systems / baseline mapping, with 'relational' thinking, 'who, what & how'
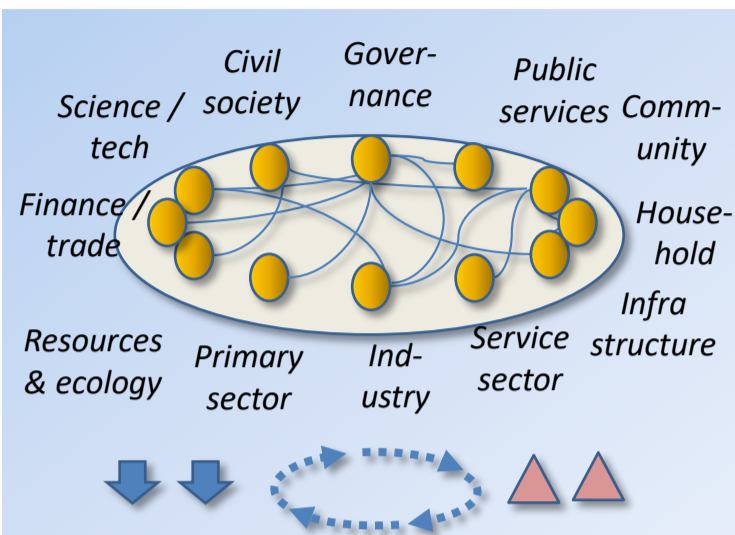
STEP (A) — 'round table'

We ask, who do you work with' (or not)? How do you create value (or not)?

ACTOR MAPPING - for - 'WIDER' SYNERGIES

'What's the problem and who is part of it?' a good place to start is the 'actors' (people, organizations, stakeholders)

Civil society
Science / tech
Gover-nance
Public services
Comm-unity
Finance / trade
House-hold
Infra structure
Resources & ecology
Primary sector
Ind-ustry
Service sector

Draw a map of interactions, positive & negative (here are some typical Low Carb actors)

Mark up the structures of power, dependency, knowledge
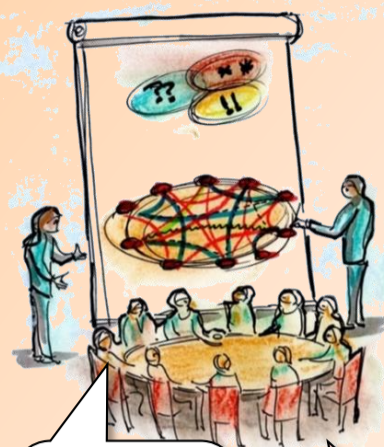
Who's in debt to who? Who dumps CO_2 on who?
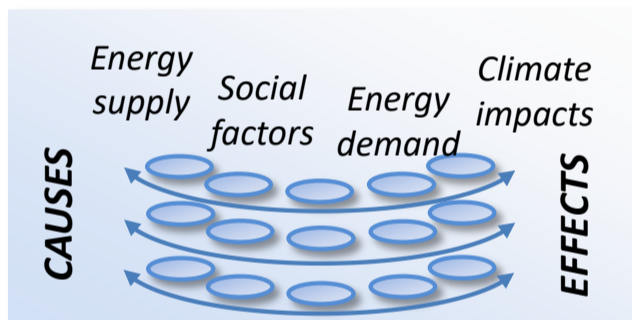
It's all about power!!

STEP (B) — 'Business model'

Then we ask, how does the system work, or not?

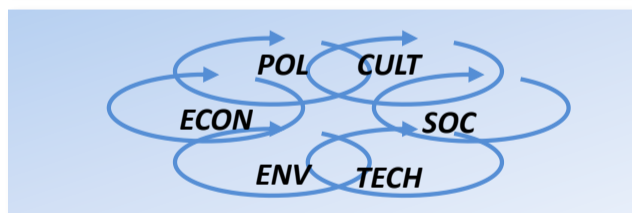### FACTOR MAPPING - for - 'FURTHER' SYNERGIES

'Factors' are the components of a system, with a 'metabolism' of upstream-downstream flows or causes / effects: (e.g. energy supply-chain, or business model).

CAUSES
Energy supply
Social factors
Energy demand
Climate impacts
EFFECTS

POL CULT
ECON SOC
ENV TECH

Draw the metabolism, from upstream supply, to downstream demand & impacts.

Then explore the different layers, economic, social or technical.

Then map the interactions & overlaps between.

I can see flows of energy & flows of money..
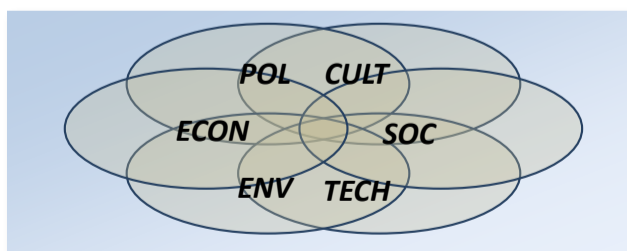
& flow of ideas, how to draw that??

STEP (C) — 'Crystal ball'

And then, what are the synergies between:
-**Deeper** domains
-**Wider** 'actors'
-**Further** 'factors'

DOMAIN MAPPING - for - 'DEEPER' SYNERGIES

A whole system of 'deeper-complexity' begins to emerge: like clouds, or layers in a crystal ball (unwrap with care...)

POL CULT
ECON SOC
ENV TECH

WIDER
FURTHER
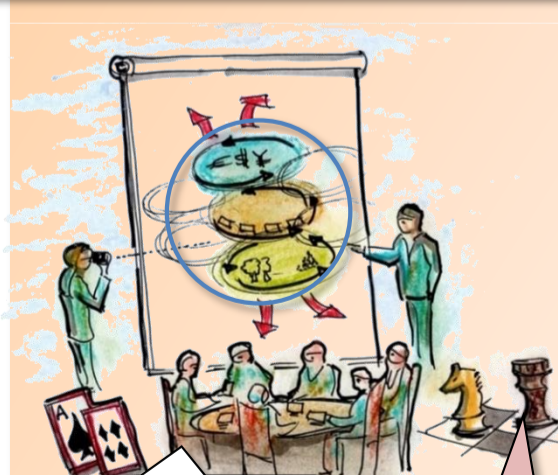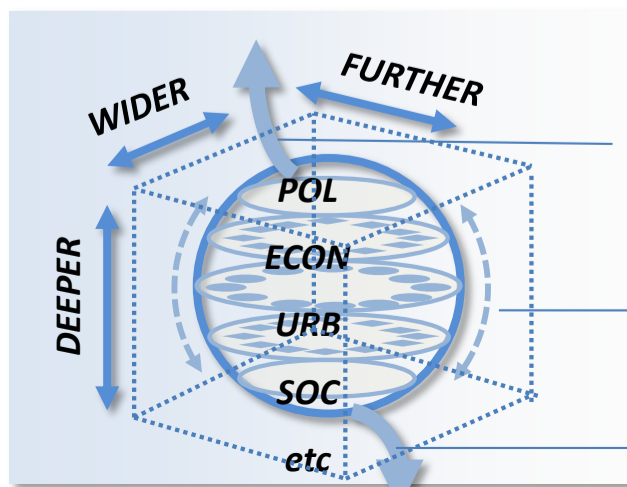DEEPER
POL
ECON
URB
SOC
etc

With 'domain mapping' we explore the 'nexus' of inter-connected systems
Then arrange the layers to see deeper & wider patterns

Extraction of value by super-systems

Structures of hierarchy & power

Negative impacts on sub-systems

This Low-Carb city has games within games - energy, money, CO2

Like a chess game with talking pieces

SCENARIO–MAPPING

Figure 3-3

Stage 2: Scenario (change) mapping with 'divergent' thinking & 'what-if' questions
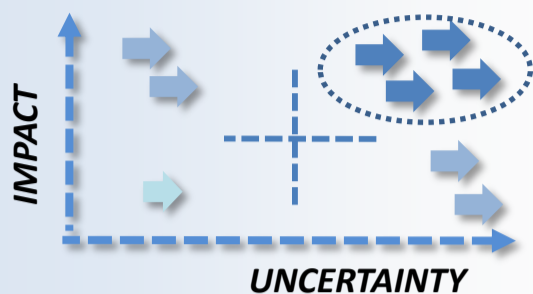
STEP (D) 'force fields'

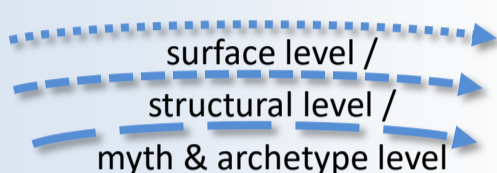First question, what are the forces and drivers of change?

DRIVERS OF CHANGE

Changes can be mapped in different ways, in different systems

IMPACT / UNCERTAINTY

Select the most important drivers, i.e. with high impact & high uncertainty (this is standard scenario method)

surface level / structural level / myth & archetype level

Then explore other 'causal layers': surface / structural / archetype.

Change happens in many ways...

Wild cards!!

Changes of view

Material 'drivers'

Social change

Natural change & tipping points

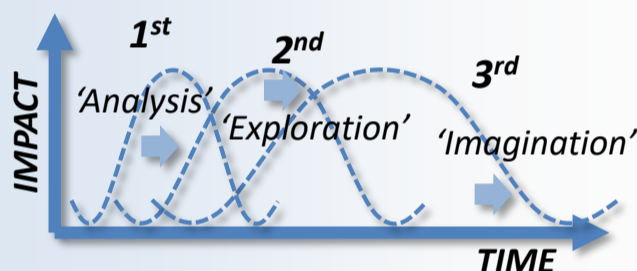Weak signals of strong forces?

STEP (E) '3 peaks'

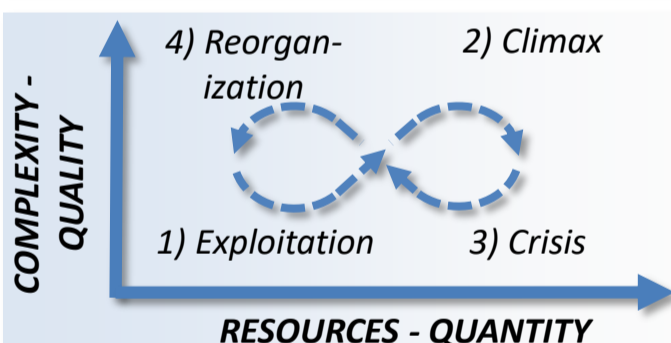Then we ask, what are the horizons & dynamics of these changes?

DYNAMICS of CHANGE

Now explore the scope of change over '3 horizons' & the dynamic cycles of growth & decline

IMPACT / TIME

1st 'Analysis'
2nd 'Exploration'
3rd 'Imagination'

We may be on horizon 1, 2, 3 at the same time

COMPLEXITY - QUALITY / RESOURCES - QUANTITY

4) Reorganization
2) Climax
1) Exploitation
3) Crisis

A dynamic 'cycle of renewal' can be mapped as 'quantity' versus 'quality'.

START

2) Our beautiful forest, let's keep it for ever...

4) Now it's all weeds & thorns !!

1) Let's get growing, no time to lose!!

3) All gone up in flames!!

STEP (F) 'cross-roads'

And then, what are the main alternative possibilities for the future?

SCENARIOS of CHANGE

Then cluster the key drivers into alternative future 'scenarios' – (with creative 'out-of-the-box' thinking)

Clusters of drivers with high impact & uncertainty

GLOBAL
(A)
(B)
COMMUNITY
ENTERPRISE
(C)
(D)
LOCAL
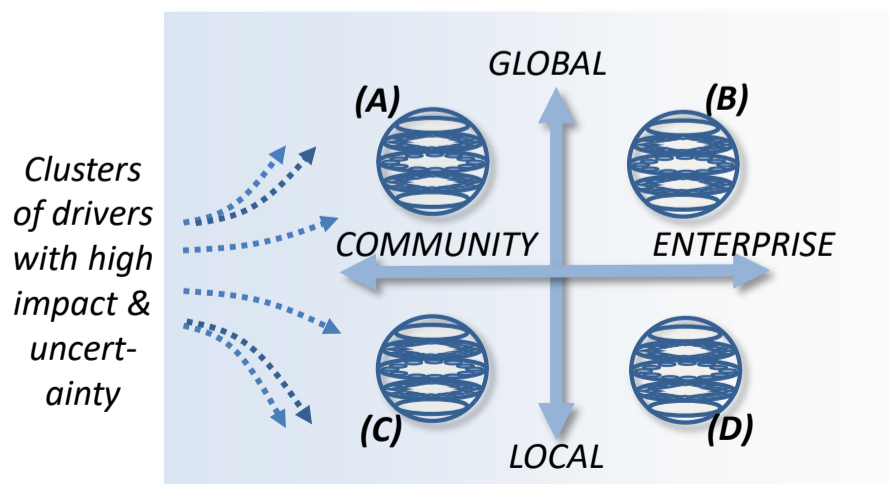
Basic method: place 'drivers' on the chart of impact / uncertainty. Select the priorities, cluster around two main 'axes of uncertainty'. Draw a 2x2 matrix & explore the combinations in each corner. (Deeper-City uses standard scenario axes of 'global / local', & 'public / private').

'Global governments know best'

'Global markets deliver the goods'

'Local communities are what we need'

'Local enterprise works'

Politicians & advertisers are the scenario experts

Figure 3-4

SYNERGY–MAPPING

Stage 3: Synergy mapping with 'emergent' thinking, for growth / evolution / co-evolution questions

STEP (G) 'problem-solving'

First question, how to fix the functional problems?

LINEAR CHANGE – 'CLEVER' – MODE-I

Now comes creative thinking, where the crystal sphere image can be useful. First we look at the linear Mode-I system: this may be 'clever', but it can't adapt or evolve.

This sphere shows a technical system controlled from the top down
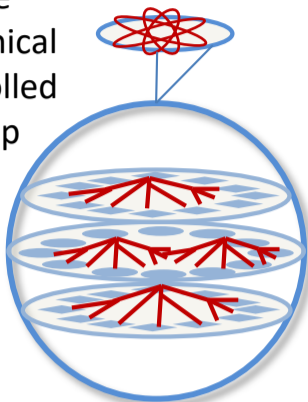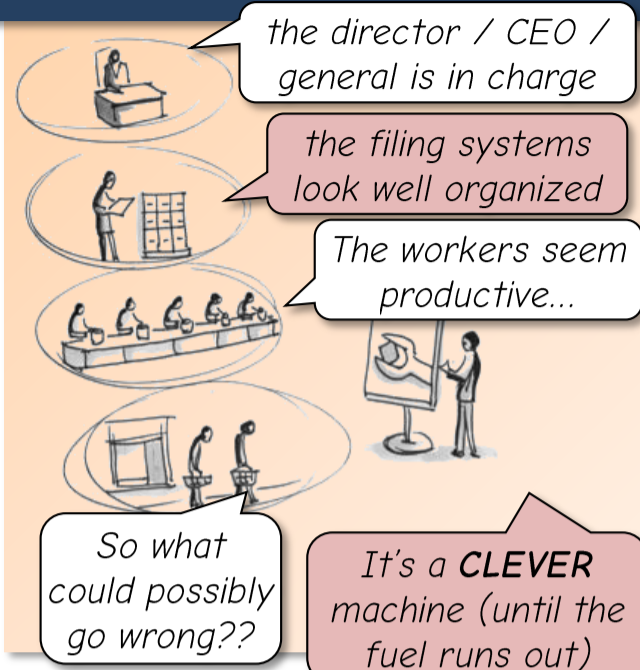
Here the 'collective intelligence' is external, in a machine designed by others.

Change comes from simple growth, e.g. 'more cars / more houses'

the director / CEO / general is in charge

the filing systems look well organized

The workers seem productive...

So what could possibly go wrong??

It's a **CLEVER** machine (until the fuel runs out)
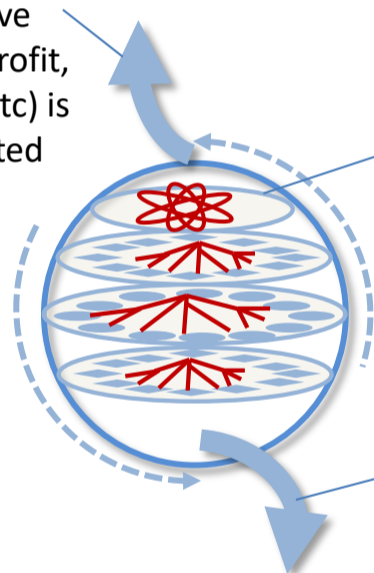
STEP (H) 'evolution?'

Then we ask, how can this system evolve or emerge or innovate?

EVOLUTIONARY CHANGE – 'SMART' – MODE-II

Then we look for 'emergent' systems, which adapt and create niches, as in evolutionary biology. A Mode-II type city can be 'smart', but myopic and self-destructive.

Positive value (profit, power etc) is extracted

Evolutionary 'design intelligence' is in the dominant layers

Change comes by competition & enterprise

Negative impacts are dumped ('externalized')

Now for some real deals... we could make $billions...

We need SMART motivated managers.

...insecure workers we can control...

...& consumers who are never satisfied!!

It's nature's way – big fish eat little fish
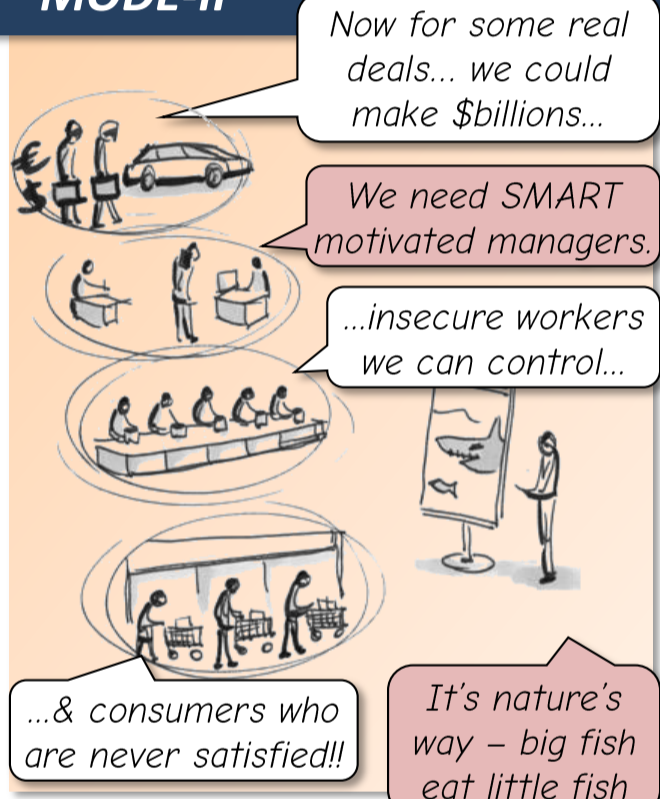
STEP (I) 'co-evolution?'

And then – how can this system transform with collective intelligence?

CO-EVOLUTIONARY CHANGE – 'WISE' – MODE-III

Third, we look for 'co-evolutionary' systems & potential transformations by collective intelligence. A Mode-III 'wiser' city emerges by deeper learning with & from everyone.

WIDER **FURTHER**

DEEPER
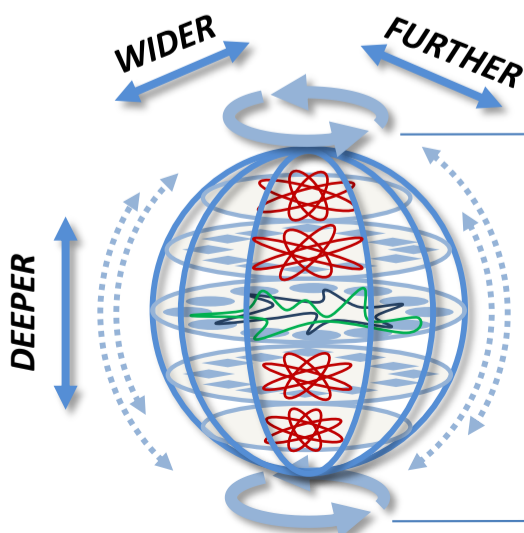
Positive values (finance, power resources) are recirculated.

Values are generated by synergies between social, economic, political, etc.

Negative impacts are internalized

this **WISE** city isn't just money – it's about art, nature, community...

Complex decisions need round tables

Production is self-organized,

& we study the deeper city mind

So what's the difference between 'smart' & 'wise'???

'Smart' is winning an argument with your partner... **'Wise'** is knowing when not to argue...

Figure 3-5

STRATEGY–MAPPING

Stage 4: Strategy (pathway) mapping with 'convergent' thinking, with 'who does what' questions

STEP (J) 'pathways'

The next question is what kind of pathways would lead from smart to *wise*?

PATHWAY MAPPING & DESIGN

Synergistic pathways are about transformation from present day 'syndromes', towards future 'synergies'.

Present day problems & **syndromes**

Pathways link present & future

Future proofing

Future potential **synergies**

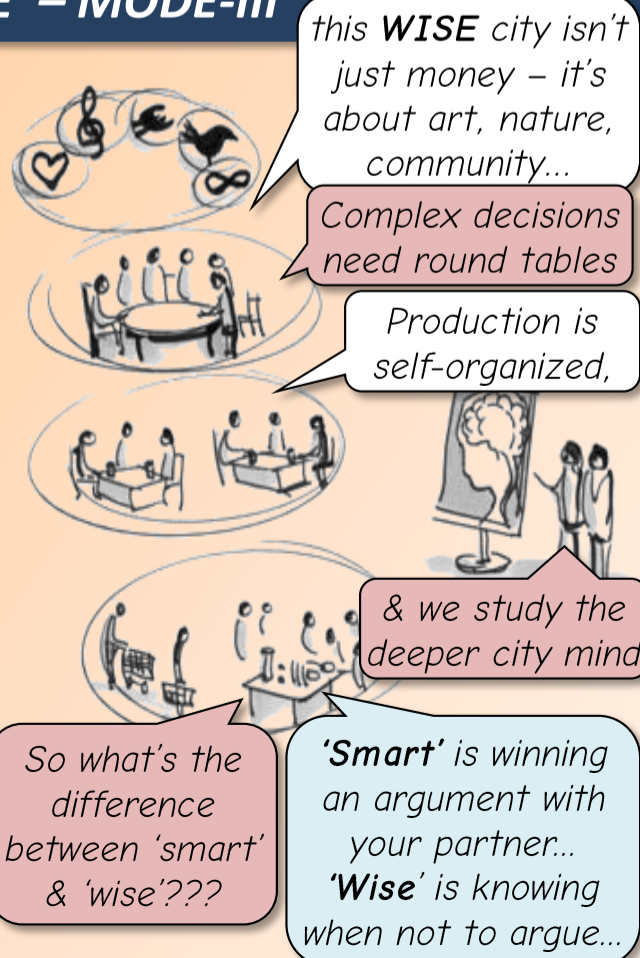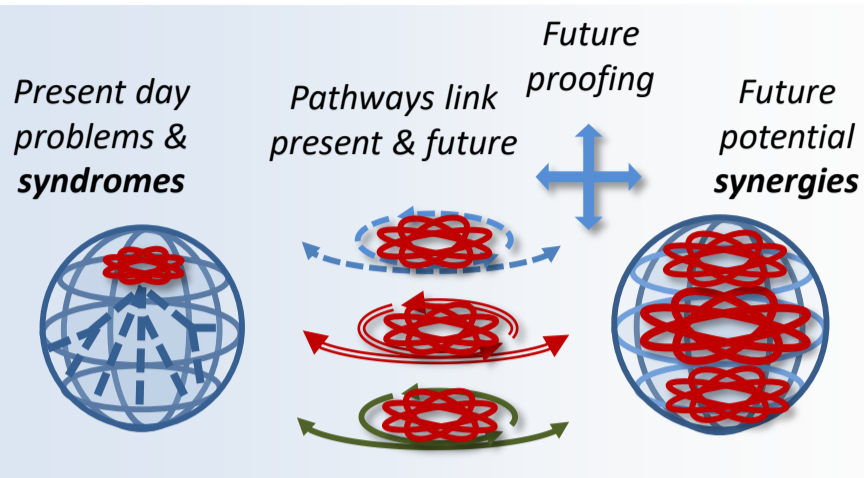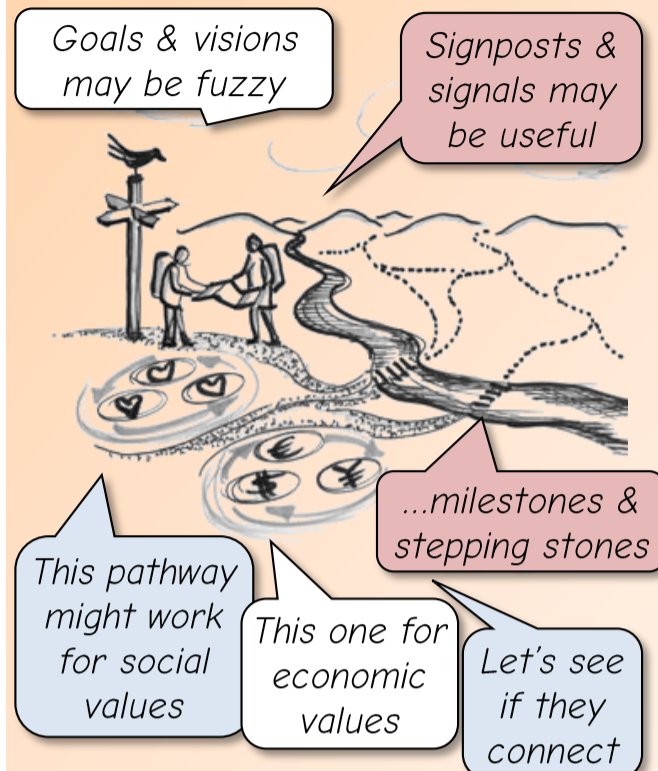Each synergistic pathway in Deeper City combines 2 or more domains (social, technical, economic etc).
Each emerges by collective learning & thinking, with future-proofing for alternative scenarios.
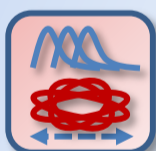
Goals & visions may be fuzzy

Signposts & signals may be useful

This pathway might work for social values

This one for economic values

Let's see if they connect
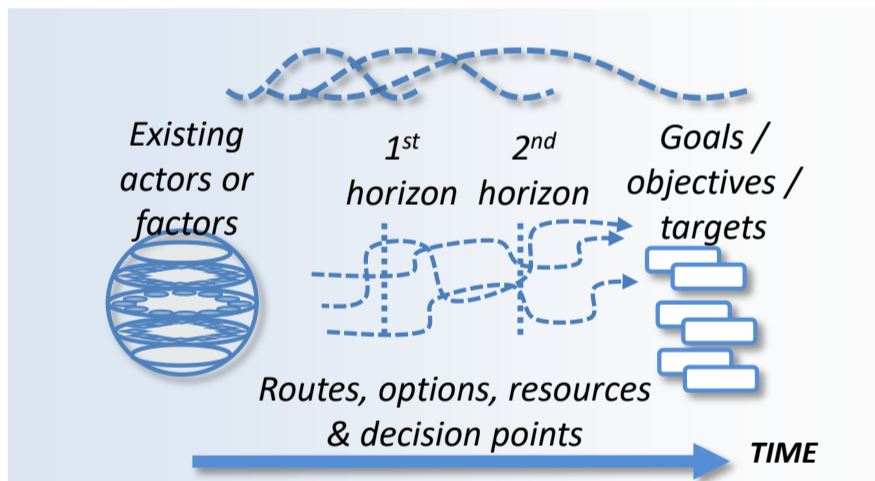
...milestones & stepping stones

STEP (K) strategic plan

And then, how to put these broad pathways into strategies and plans?

ROUTE (ROAD) MAPPING

Strategy / route-mapping sets out the goals, resources, actors, timescales. It works for defined objectives, with known actors & factors, with clear chains of cause-effect

Existing actors or factors

1st horizon

2nd horizon

Goals / objectives / targets

Routes, options, resources & decision points

TIME

Route-maps are more focused on the 2nd horizon, where uncertainties can be managed

Low-Carb targets & route options are signposted

Great to be on a Low-Carb road & know where you're heading

Our roadmap shows low-carb tech, markets, social change & policy all working together
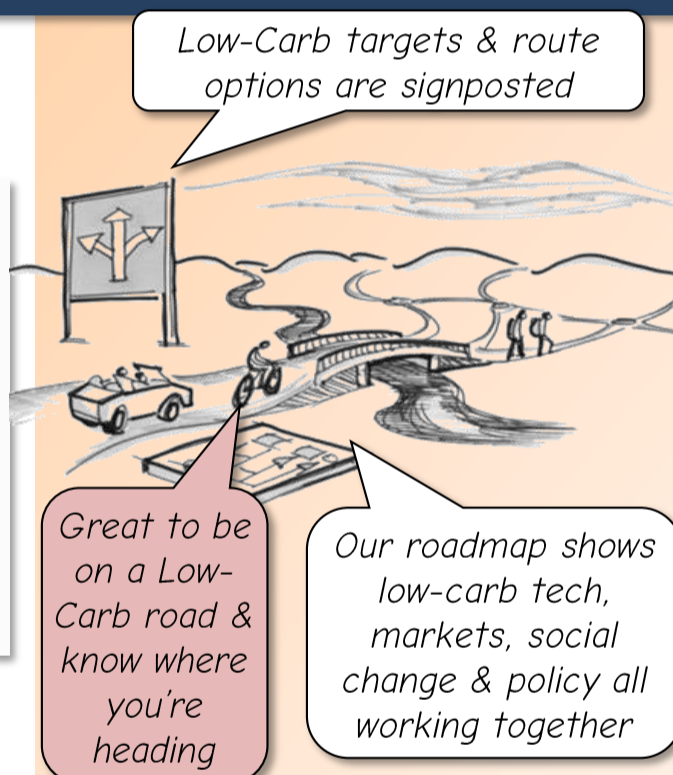
STEP (L) 'action plan'

Finally, how to manage the change and learn from the feedback?
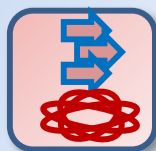
MANAGEMENT & EVALUATION

Finally we put the route-maps into action via project management (as in text books). We include feedback loops for assessment & evaluation.

Goals, objectives

Inputs to actions

System changes via actions

Outputs & impacts

Outcomes & impli-cations

Assessment loop
Evaluation loop
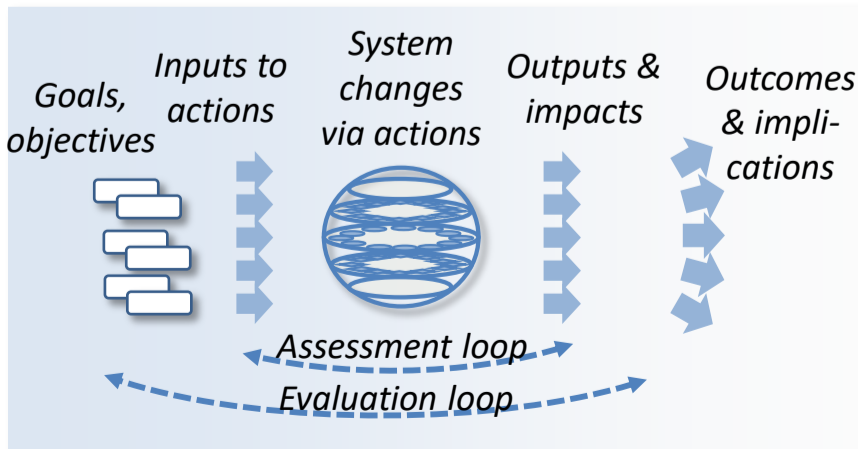
Assessment is a comparison of inputs to outputs.
Evaluation is a broader comparison of objectives / outcomes.
Each can work in *Mode-I, II,* or *Mode-III* systems.

Here's the evaluation... before we set off into wilderness again...

Management is like driving - continuous feedback & adjustment

So how did we do on the Low-Carb pathway?

Depends who's asking
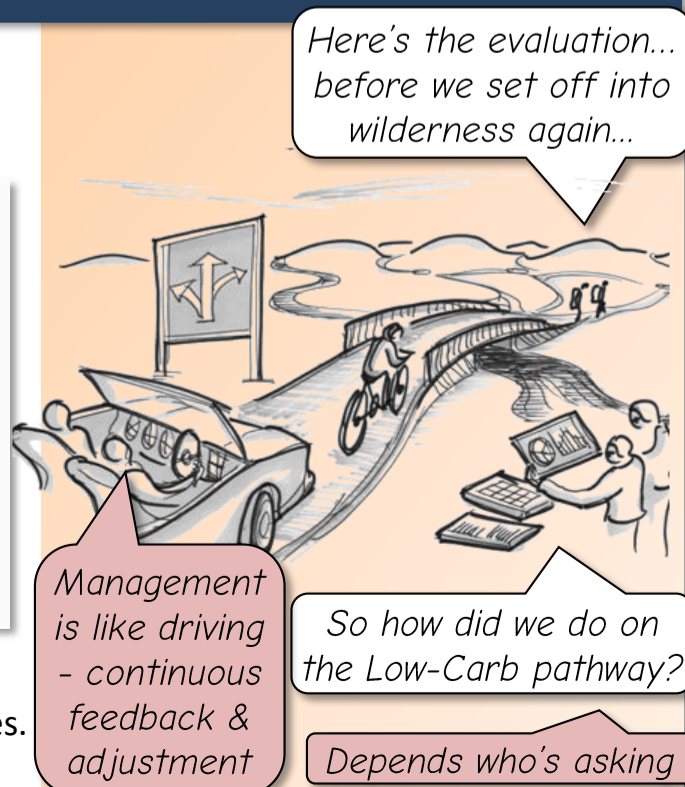
Figure 3-6

TOOLKIT–III

Using the Synergistic Toolkit in workshop dialogue, public enquiries or research programmes

a) SYNERGISTIC LAB & the '4-S' CYCLE

Setting up:
Who are the users?
Why are they here?
When is the lunch?
How much time & money?

What is the scope?? -
Toolkit-I for direct problems
Toolkit-II for innovation
Toolkit-III for transformation

1) SYSTEM-MAPPING
- first we explore 'what is our problem' & 'how does this system work'?

2) SCENARIO-MAPPING
– we look at future trends, dynamics, alternative scenarios

(Include visual thinking)

(Include specialist resources)

3) SYNERGY-MAPPING,
- at the creative core of the toolkit, exploring new visions, collaborations, value loops, ideas

4) STRATEGY-MAPPING
- we converge back to practical plans, policies, actions.

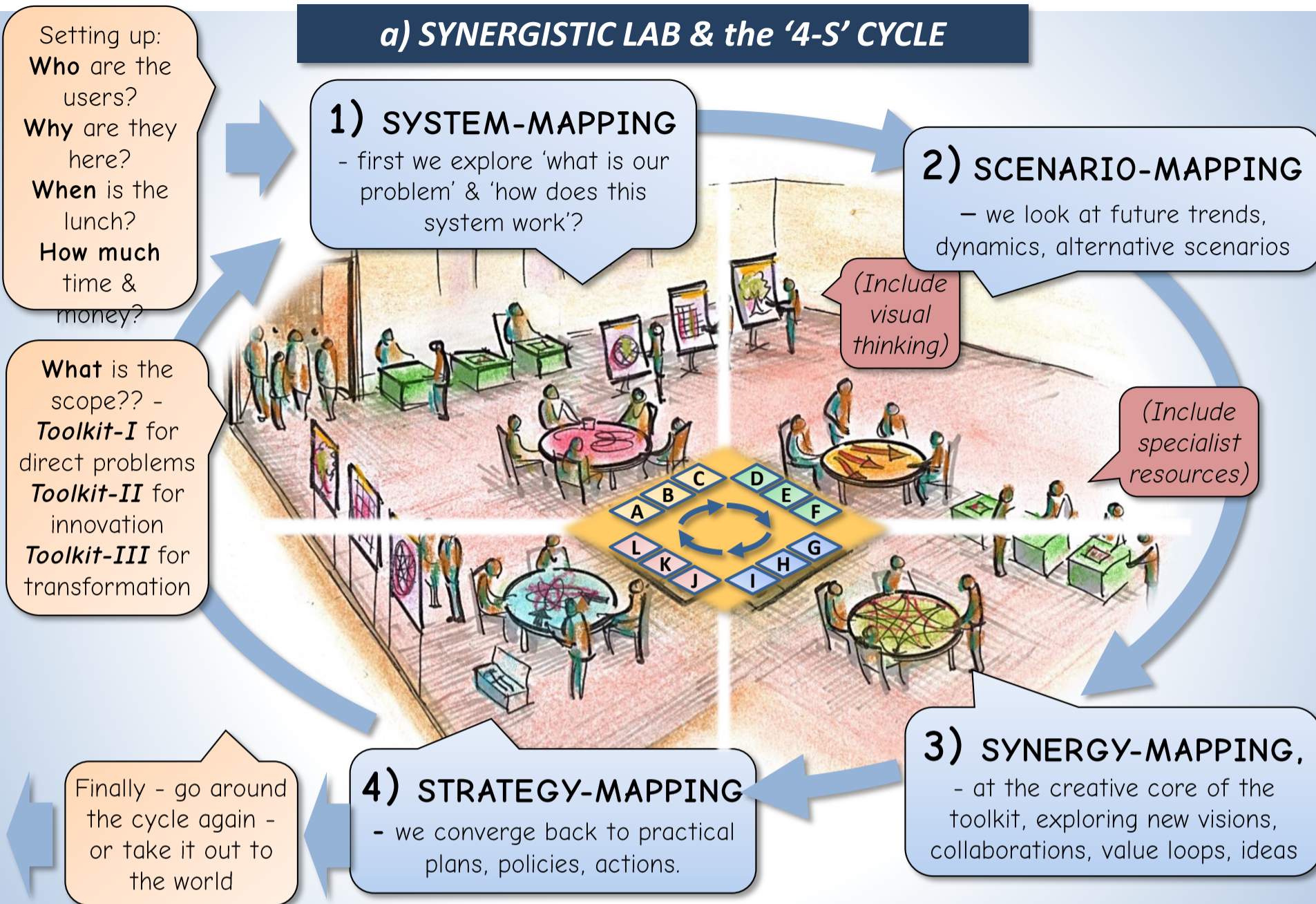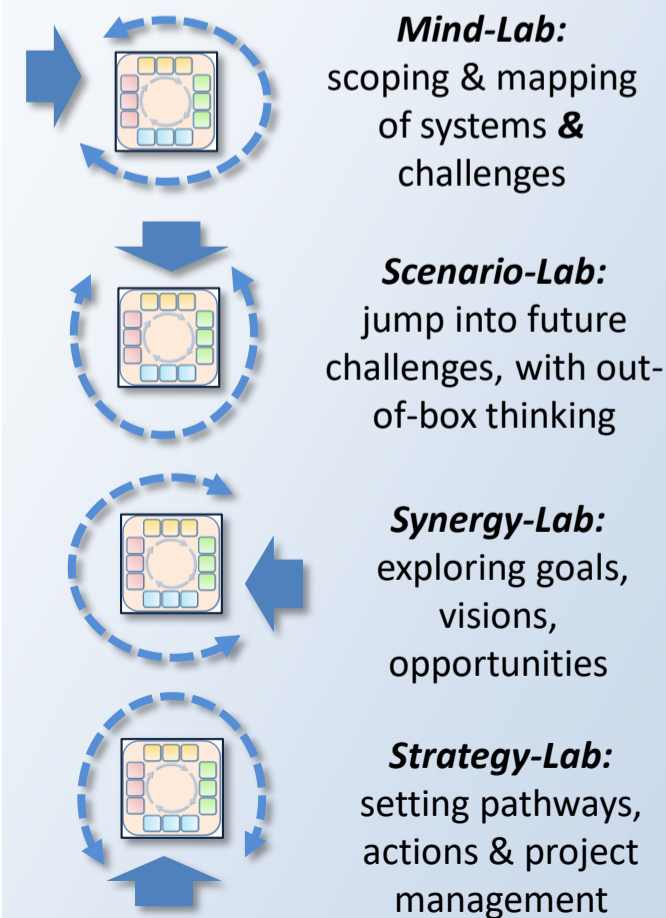Finally - go around the cycle again - or take it out to the world

---

b) LAB OPTIONS

A 'Lab' can start & finish in different places, using different tools for different purposes. Here are some options.

Mind-Lab: scoping & mapping of systems **&** challenges

Scenario-Lab: jump into future challenges, with out-of-box thinking

Synergy-Lab: exploring goals, visions, opportunities

Strategy-Lab: setting pathways, actions & project management

---

c) 12 STEPS - TEMPLATES & QUESTIONS

Each of the 12 steps has a visual template, for flip-charts, white-boards, napkins, off-line or online.

Each step has questions to open up creative thinking

C) Sectors / domains ('deeper'): which values?

D) Drivers: what causes change?

E) Dynamics: how does change work?

F) Scenarios: which alternatives?

G) Functional: technical solutions?

B) Factors ('further'): how does it work?

H) Evolutionary: incentives & innovations?

A) Actors ('wider'): who is involved?

I) Co-evolutionary: collective vision & intelligence?

SCENARIOS

SYSTEMS

SYNERGIES

STRATEGIES

L) Management: who does what & when?

K) Route-maps: how to reach the targets?

J) Pathways: how to build the synergies?