

## **PP4SD Financial Sector Programme - Systems Thinking and the Five Capitals**

### **Facilitation Notes**

#### **What is systems thinking?**

The essence of systems thinking and practice is in 'seeing' the world in a particular way, because how you 'see' things affects the way you approach a situation or undertake specific tasks. And how you 'see' things is influenced heavily by the culture of the society in which you live and work and by your education and training.

There is a simple story (told by an accountant) about a group of professionals, which exemplifies the different ways people 'see' the world. Each of the professionals in this story were given a barometer and asked to find the height of a church tower.

The physicist, who remembered that air pressure changes with height, took the barometer readings at the bottom and at the top to calculate height. The engineer dropped the barometer and timed its descent to calculate height. The architect lowered the barometer on a piece of string till it touched the ground and measured the string. The surveyor measured the shadow cast by the tower and used the ratio to calculate the tower height. The accountant went to the sexton and offered the barometer as a tax-deductible expense if the sexton told him the height of the tower!

The story illustrates two important points. First that people and their viewpoints are part of the situations we normally deal with and second there is more than one way to handle any situation.

Systems thinking can help resolve complex situations involving people and things, where it is important to focus on the relationships between people and things as well as the structure of a particular situation.

How often, when there is an issue in an organisation, does it lead to a re-structuring? Often without looking at its relationships, new departments are created, with different managers and teams. Some notable (disastrous?) examples include the restructuring of our railways, our health and education systems.

Systems thinking involves looking at the interconnections between parts of a whole rather than concentrating just on the parts. To borrow a phrase in current use, systems thinking is about 'joined-up' thinking, where the *key* is *how* the joining up is done.

### **Systems thinking in practice**

Drawings provide a useful way of gathering information about complex situations and are a key element of the approach to systems thinking and practice developed by Peter Checkland (1981, 1990). Using pictures as a way of thinking about issues is common to several problem-solving methods because our intuitive consciousness communicates more easily in impressions and symbols than words.

An additional dimension to this approach, widely used by systems practitioners is the use of diagrams to explore the relationships or boundaries between systems of interest. The relationship between sustainability and sustainable development is of particular interest here. Whilst these terms are often used interchangeably, they mean different things. In simple terms sustainability means the capacity for continuance into the long-term future. Sustainable development on the other hand, is the journey or means of achieving the goal of sustainability. In systems thinking, both represent separate but connected systems of interest. To an individual or an organisation (such as a bank), sustainable development represents a 'sphere of influence' and action over which they have some control and direction. Sustainability represents a 'sphere of concern' over which an individual or organisation only exerts some limited impact indirectly through their 'sphere of influence'. Identifying your (or your organisation's) sphere of influence facilitates a much more focused and productive dialogue on achievable actions and outcomes.

The third way in which we have looked at systems is through an intellectual framework for sustainability. Intellectual frameworks like this shape our ideas and concepts (like the barometer

story, each professional has a different framework through which they approach the problem of assessing the height of the church tower).

The following are key characteristics for a sustainability framework:

- the earth as a sustainable system is dependent on the activities of a number of well-defined bio-geo-chemical cycles
- the earth as a sustainable system is open to flows of energy and closed to matter (first and second laws of thermodynamics)
- there are **four** principle ways to undermine the bio-geo-chemical cycles (see slides)
- the framework is set in a future perspective

By setting the sustainability agenda in an ‘earth as a system’ context, it is much easier for professionals to engage with what needs to be done rather than merely focusing on measuring, managing and mitigating downstream environmental impacts.

### **Systems thinking and practice and the Economy**

You may now be asking yourselves, but what has this to do with the financial services sector!/? As we have described in the ‘earth as a system’ model, we as a species are first and foremost dependent on sustaining those biophysical systems which allow life on earth to continue – this applies to financial services sector workers as well as estate agents, circus performers and politicians.

Another approach now used by many in the sustainability field, is to translate our understanding of the biophysical cycles into **economic** concepts of **capital** and **income**<sup>1</sup>.

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<sup>1</sup> From: James Wilsdon and Jonathon Porritt: Making Sense of Sustainability, The environmentalist 2000

Capital is traditionally understood as accumulated wealth in the form of investments, factories and equipment. In reality, our economy and every company needs five types of capital to function properly:

- **Natural capital** (also referred to as environmental or ecological capital) is any stock or flow of energy and matter that yields valuable goods and services. It includes *resources*, some of which are renewable (timber, grain, fish and water), whilst others are not (fossil fuels); *sinks* which absorb, neutralise or recycle wastes; and *processes*, such as climate regulation. Natural capital is the basis not only of production but also of life itself.
- **Human capital** consists of our health, knowledge, skills and motivation, all of which are required for productive work. Enhancing human capital - for instance, through investing in education and training - is vital for a flourishing economy. Poverty is both morally indefensible and socially inefficient in that it prevents millions of people from fulfilling their potential.
- **Social capital** is the value added to any activity or economic process by human relationships and co-operation. Social capital takes the form of structures or institutions which enable individuals to maintain and develop their human capital in partnership with others and includes families, communities, businesses, trade unions, schools, and voluntary organisations.
- **Manufactured capital** comprises material goods - tools, machines, buildings and other forms of infrastructure - which contribute to the production process, but are not used up in it.
- **Financial capital** plays an important role in our economy by reflecting the productive power of the other types of capital, and enables them to be owned and traded. However, unlike the other types, it has no *intrinsic* value; whether in share, bonds or banknotes, its value is purely representative of natural, human, social or manufactured capital.

Our wealth depends on maintaining an adequate stock of each of these types of capital. If we consume more than we invest, then our opportunities to generate wealth in the future will

inevitably be reduced. Sustainability can only be achieved if the stocks of capital are kept intact or increased over time.

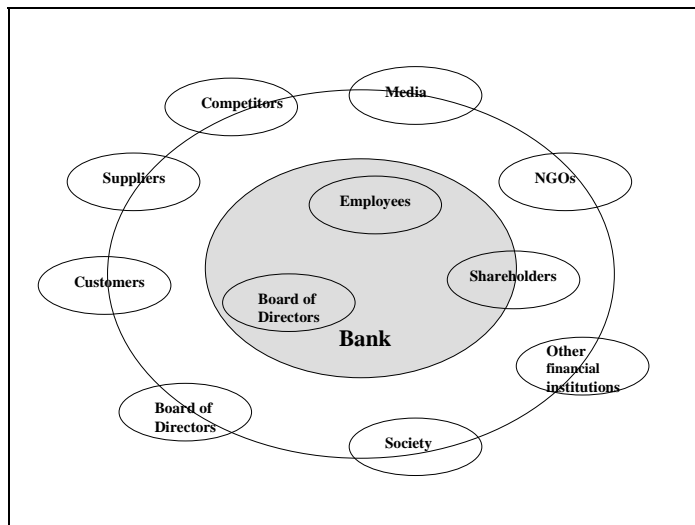
At the heart of the current environmental crisis is the way in which present patterns of consumption and production are unsustainably depleting natural capital, such that its ability to support the projected levels of human population in the next century at any level, let alone at the standard of living we in the industrialised world enjoy, is seriously brought into question. As Paul Hawken and Amory Lovins argue in their book “Natural Capitalism” (1999):

*“What might be called ‘industrial capitalism’ does not fully conform to its own accounting principles. It liquidates its capital and calls it income. It neglects to assign any value to the largest stocks of capital it employs – the natural resources and living systems, as well as the social and cultural systems that are the basis of human capital.”*

Many people now advocate a model of **sustainable capitalism**, based around maintaining and where possible increasing our stocks of these different capital assets, so that we succeed in living off the income without depleting the capital. They are the capital stocks from which we have to derive all our goods and services, and produce improvements in human welfare and quality of life. If consumption is at the expense of investments, then such consumption is not sustainable and will inevitably be reduced in the future.

However, it is worth bearing in mind that all such categorisations are more than a little arbitrary. In reality, there are only two sources of wealth in the world today: the wealth that flows from our use of the earth’s resources and ecosystems, all powered by incoming solar radiation (our natural capital); and the wealth that flows from the use of our hands, brains and spirits (our human capital). All else – money, machines, institutions, etc – is derivative of these two primary sources of wealth.

## Systems thinking and banking



### *Internal and external bank stakeholders*

Banks are a system, involving as the diagram above shows, a range of stakeholders in the process of a range of financial transactions (current accounts, dividends, salaries, savings, loans, mortgages, investment, etc). A simple way of describing a system of relevance to you in banking is to follow (using a diagram) a day in the life of a £50 note! (This activity can be used instead of the mapping exercise in the course programme.)

Depending on your way of looking at this, you might 'see' the day in a number of ways. For example, from the perspective of a cashier in a bank, the note might be issued to a customer and then used in a series of transactions to purchase products and services. You might want to follow other (sub) systems in these transactions. For example, if the note is exchanged for food, this initiates another system, involving growing, processing and retailing an item of food. This is yet another system, but which is heavily dependent on the 'purchasing power' of the £50 note. Alternatively, the note might be subject to a series of 'transactions' within the bank itself, or in a number of banks and other financial services activity.

From this simple example it is easy to see how relationships and purposes of a system become more complex as you think through the different steps in the chain of events....

Another way of thinking about banking and systems would be to take one feature (or subsystem) of this system and in a diagram outline the main impacts of a decision (Annex 1). For example, if the bank were to increase (unilaterally) bank charges what would the impact be on the various stakeholders of the systems map?

A first response from the board might be:

1. reduce competitiveness
2. rely on customer inertia
3. lose customers
4. create adverse publicity
5. increase lobbying from NGOs (pensioners groups, Help the Aged, etc)
6. lose shareholder value
7. create adverse image of the bank (internally and externally)
8. government intervention when bank begins to fail
9. suppliers reduce credit lines

You might also start by asking, why does the bank need to increase charges, and is this in line with its mission. You might want to follow an entirely different route altogether. Why not role-play one or more of the stakeholders and list in order of importance the impacts from their perspective. Another example might be branch closures, or the introduction of on-line banking. You might also seek answers to another set of different questions like:

What will the impact on this system of...

- foot and mouth
- terrorism
- a change of government
- the introduction of the Euro

## Conclusion

From this brief outline of systems thinking and practice, it is apparent that a system represents aspects of some situation of interest to a range of stakeholders, to assist those stakeholders to achieve some purpose(s) relevant to them.

This system definition includes 3 verbs, *represent*, *assist* and *achieve*. These are the major activities. And implied by these verbs, there is a wider range of further activities. Consequently, it is necessary to:

- know the stakeholders and the purposes
- identify the boundaries around the situation
- choose features of that situation which are important to the stakeholders
- identify possible linkages or relationships between these features
- choose suitable ways to describe those relationships
- test whether the chosen features and relationship are agreed by the stakeholders

see [www.open2.net/systems](http://www.open2.net/systems) for more case studies

## Systems Thinking and Banking - Role Play

Role-play can be a useful tool to use in understanding systems thinking and sustainability. It can help participants take an unusual (for them) standpoint and can prompt new ideas and actions.

### Purpose of the exercise:

- to get participants thinking about ‘systems’, relationships, stakeholders and key sustainability issues

### Duration:

- 1 hour 10 minutes

### Props:

- Diagram identifying key stakeholders groups
- prepared sheets for 3 or 4 teams describing the overall situation, the roles of particular team members, examples of possible questions/responses

**Summary:** In this exercise the facilitator presents participants with a scenario for the bank, (e.g. introduction of on-line banking; branch closure; introduction of the Euro, etc). Groups should represent:

- the board members of the bank
- a group of individual customers
- a group of corporate/business customers
- a major ‘green’ NGO

Each group should be given up to 30 minutes preparation time to discuss the ‘issue’. When the board meeting is convened the chairman of the board should then outline what the bank intends to do, in the context of the issue, and the finance, marketing and sustainability directors can add particular elements to the presentation.

Questions should then be taken from the customers, (or other stakeholders) playing different roles (e.g. pensioner, teacher, parent, accountant, civil engineer, small businessman, oil company, retail, motor vehicle executives; CEO, WWF, RSPB etc).

**Variation:** Another dimension might be achieved by creating a group to represent the media (e.g. journalists making a documentary).

**Run the exercise:** Give participants 30 minutes to prepare to the role-play. Facilitators should encourage the customers to ask challenging questions, particularly from a sustainability perspective. Seek to encourage imaginative solutions by taking a long-term (future) perspective.

Participants should introduce themselves in character, the exercise can then be run for up to 20 minutes. Get the groups back in a plenary session to recap on the key issues and solutions.

### **Some alternative roles**

advertising executive  
doctor  
MP  
waste manger

architect  
environmental campaigner  
police officer  
purchasing manager

builder  
farmer  
scientific researcher  
environmental regulator