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# Systems and Systemic Change – Clarity in Concept

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## Introduction

Systemic change is a concept that has received a great deal of attention in recent years, in development and in other areas of policy, research, academia and practice. Much of this has focused on emphasising the complexity which is inherent to an understanding of systems. This emerged as a response to the oversimplification of external intervention which treated societal problems as simple input-output models. However, what the literature has gained in richness, it has lost in utility, and many have been left asking the question *how does this help?*

This short concept paper intends to revisit and further develop two existing frameworks used in market systems development<sup>i</sup> and explain them in simple terms so that they might be synthesised to understand better what systemic change is.

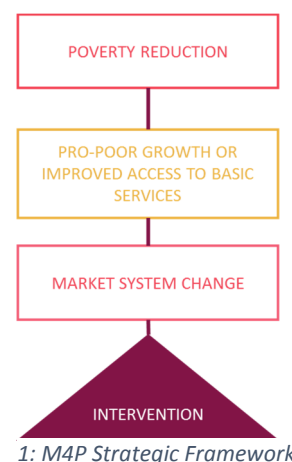
## What is systemic change?

The objectives of systemic change are defined consistently as sustainable, large-scale change. Systemic change has been defined countless times, in fields as diverse as biology, education, health, philosophy and engineering. However, beyond semantics, there is little variation in definitions. One useful definition provided in New Philanthropy Capital's 2015 handbook introduces concepts of sustainability and the different components of a system:

*...an intentional process designed to alter the status quo by shifting the function or structure of an identified system with purposeful interventions...Systems change aims to bring about lasting change by altering underlying structures and supporting mechanisms which make the system operate in a particular way. These can include policies, routines, relationships, resources, power structures and values.*

However, this and other definitions remain at an abstract level. Without a clear and useable understanding of a system, one cannot assess whether it has changed.

A note is also merited here on the 'intentional process' from the definition above. Systems are inherently dynamic. Here, though, we are talking about the actions of an external agent in changing them. Those actions have to be with a view to achieving a goal and, in development, that goal has to be some form of poverty reduction.



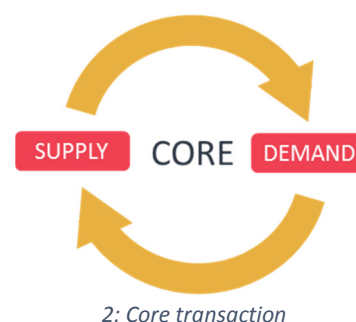
## What is a system?

Before one can understand what systemic change is, it is necessary to define what a system is so that one might know when and how it has changed. Universities run entire courses on systems thinking and systems dynamics and libraries of literature exist on the subject. However, complexity need not lead to confusion, and there are more practical ways in which systems can be understood in order to allow external players to monitor and affect change.

### The core transaction

Systems are comprised of transactions. One party supplies – goods, services, labour, employment, or rights – and another party receives. This doesn't necessarily imply agency on behalf of either party. Linking supply with demand is the exchange function.

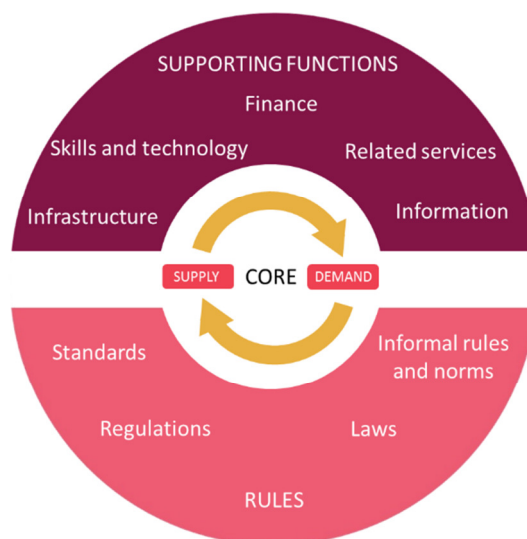
Who plays each of these roles varies according to the nature of the transaction. However, in development, your target group – the poor or disadvantaged – should always play the role of either supply or demand in this central transaction.



### The system

This core transaction is enabled or inhibited by a range of functions and formal and informal rules. These can be divided into the functions and rules that affect supply, the functions and rules that affect demand, and the functions and rules that affect exchange.

Take, for example, agricultural production. The supporting functions and rules affecting supply include input supply, labour availability, and agricultural information. For demand, relevant supporting functions and rules might include marketing and informal norms around consumption behaviours, while for exchange, important supporting functions and rules might include infrastructure provision, market information, and export regulations.



## Performance

In the core transaction, there are three important and interconnected metrics of performance which are affected by the supporting functions and rules.

### 'Price'

In this performance metric, 'price' is not, as in some interpretations, a financial value at which exchange happens. Price is the quantity of compensation, financial or non-financial, for which players are willing and able to perform their role of supply, demand, or exchange. In this model there is a price of supply, a price of demand, and a price of exchange.

The price of supply is the quantity of compensation at which a player is both willing and able to supply the good, service, job, or right. The cost component of the price of supply is affected by supporting functions such as input supply and regulation, while the actual price of supply also consists of other factors such as the functions of market information and regulation which can affect the degree of competition.

The price of demand is the quantity of compensation at which a player is both willing and able to receive the good, service, job, or right. Again, this is a product of both what they are able to pay, with important supporting functions being financial services, or what they are willing to pay, with functions such as marketing being of crucial importance.

The price of exchange is the compensation necessary to link supply with demand.

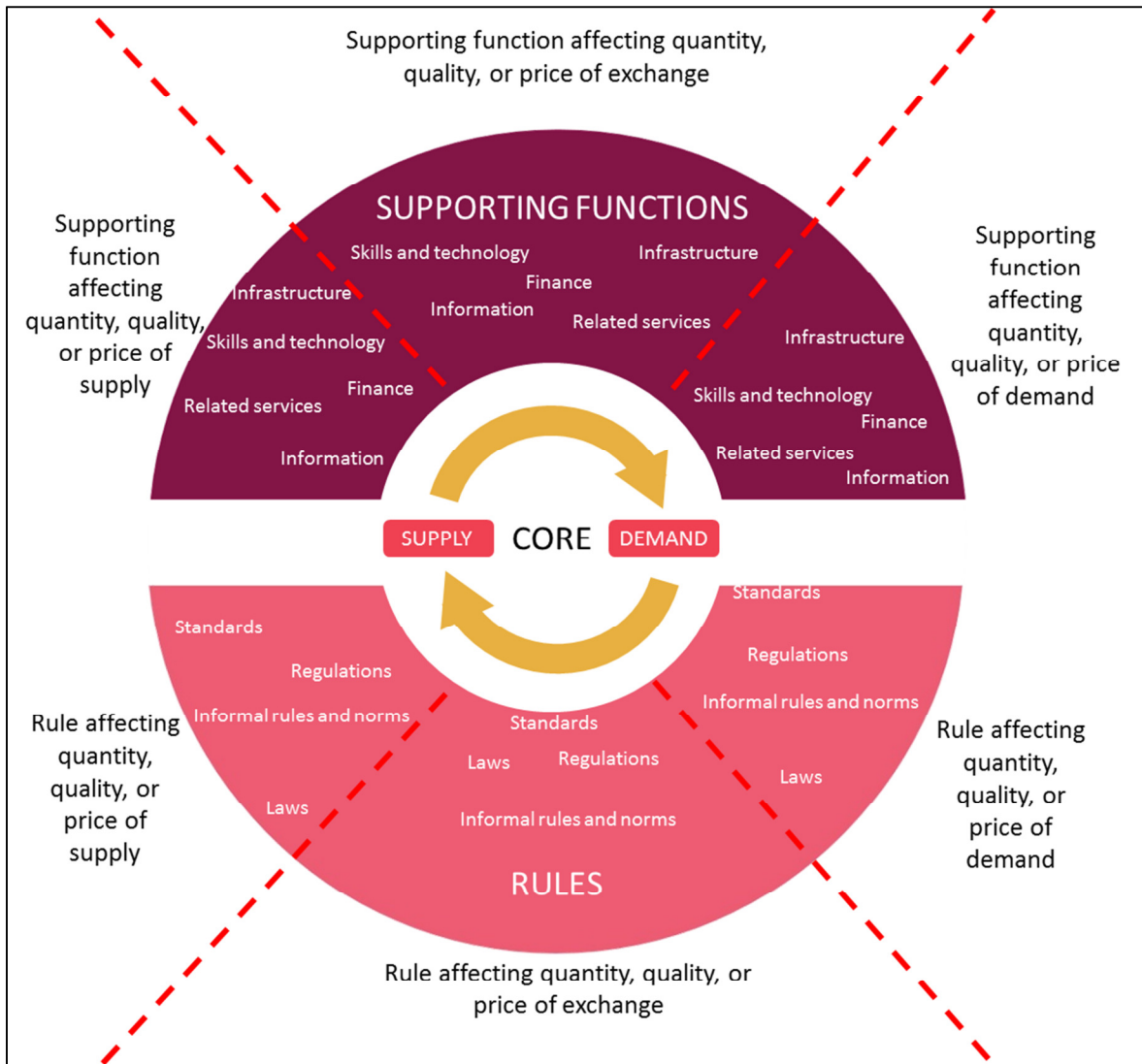
### Quality

Quality is a subjective measure. However, the perceived quality on the demand side of the transaction can affect the price and quantity on the supply side of the transaction.

### Quantity

Quantity is simply a measure of the realised or potential amount of supply, demand, or exchange. In the agricultural example above, quantity is a measure of what is being produced or what it is possible to produce, real or potential demand and the quantity of exchange happening – particularly important where the quantity of exchange does not equal the minimum quantity where supply meets demand.

For supply, demand, or exchange, the price, quality and quantity are dictated by a separate set of supporting functions and rules.

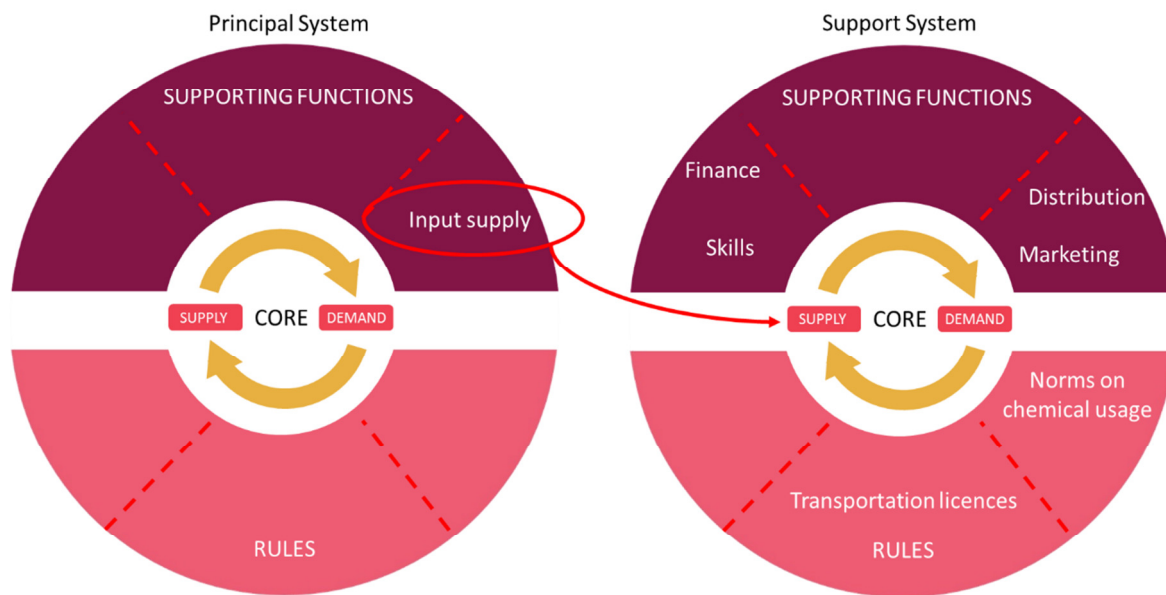


4: Performance in components of the market system

## Supporting systems

Every one of the supporting functions or rules, whether it relates to supply, demand, or exchange, forms part of its own supply, demand, and exchange transaction, which is in turn supported by its own functions and rules. As such, it can be looked at as a system in its own right.

In the example here where the core transaction sees poor people as agricultural producers selling to consumers, input supply impacts on the price, quality and quantity of supply in the principal system. The supporting system, however, is the supply and demand of inputs. Examples of supporting functions of this support system might include, on the supply side, finance or skills required to develop new products, or on the demand side, the distribution to get inputs to rural areas or the marketing required to increase the quantity of demand. Rules might include licences which increase the price of exchange, or norms around use of chemicals which affect demand.



5: Principal and supporting markets

This represents a stylised version of what a system looks like; bringing some notion of order to the complexity. In order to stimulate a change in a system, or at least observe how change is happening, one must understand the core transaction and how the outcomes of it are dictated by the functions and rules which surround it. Understanding these functions and rules, the interactions between them and how they affect outcomes in a core transaction allows for a vision of how they might work differently to improve these outcomes. This is, in essence, systemic change.

## Recognising systemic change

As documented above, systemic change is about altering 'functions or structures'. It is not about technological uptake of a new product or service if that does not alter the way the system operates for the benefit of the target group. It can be referred to as an innovation in the way the system operates with an innovation being defined as:

*A change in the way that one or more supporting functions and rules of a principal or support system operate(s) that confers a benefit to the target group in the principal system. This will consist of one or more players changing their behaviour in one or more ways.*

Based on the goals of sustainability and scale of impact at this system level, the changes in performance of supporting functions and rules identified above must demonstrate:

- Uptake, ownership, and investment by relevant players within the system, in the absence of external involvement; a sustainable change in behaviour.
- Increasing impact over time; more benefits to more people in the target group.
- Changes in other supporting functions and rules to stabilise or augment the impact of the innovation.

A heuristic is an “aid to learning, discovery or problem solving by experimental and especially trial and error methods...[they] utilize self-educating techniques to improve performance”<sup>ii</sup>. A useful heuristic for achieving these objectives is the Adopt, Adapt, Expand, Respond (AAER) framework or the *Systemic Change Framework*. The four key components of the framework are now explained.

## Adopt

In the first instance, the role of an agent external to a system, such as a development programme, is to identify what change is needed – which of the supporting functions and rules within a system are underperforming, how they might perform better, and what actions to take to bring that change about. The system is not generating this solution of its own accord and so programme intervention to instigate an innovation is necessary.

*Adopt* is a process where an innovation in the operation of one or more supporting functions or rules of the market system is introduced and ownership over it is gradually institutionalised, or adopted, within the relevant players in the system. This will involve different roles for different players. In this component, a programme will be testing and refining an innovation in partnership with one or more players whose incentives are similarly aligned, should the innovation be successful. It may be the case that multiple models of innovation fail at *adopt* – constraints may be intractable or the barriers to opportunities being realised too significant to warrant further programme investment.

There are two criteria against which innovations might fail in *adopt*. Firstly, even with programme support, various players that are needed for the innovation may not see the benefit of the change in their practice and may stop that behaviour. Potential reasons for the failure here are numerous. Incentives may not be sufficient to sustain the behaviour change, personal circumstances or the wider social or economic environment may shift, or it may be as simple as personalities which are conducive to continuing the new relationships. The second criteria is whether the model actually leads to the envisaged impact. Development programmes have a pro-poor objective in mind. It is possible that, working in a supporting system detached from a target group, it may not have the desired impact, despite being a behaviour change which is embraced by all relevant players. If this is the case, programmes will also consider this to be a failure as the system is defined with respect to that target group and, therefore, if it fails to impact upon them, it fails to constitute systemic change within that system.

In the example above, a programme might want to change the way farmers access inputs, changing the input supply function. In the support market, the innovation is a new way for input supply companies to incorporate new products into rural distribution networks, utilising extension agents



and in partnership with government to make import of chemicals easier. Behaviour changes might be required of marketing firms to develop new services, input supply firms to buy the services, extension agents to deliver the services, government to adopt and enforce new regulations, and, ultimately, farmers to buy and utilise the products. All of these players, whether they are programme partners or not, need to change their behaviour in some way in order for the new model to work.

Once the *Adopt* component of the framework has been completed, a programme will no longer be providing support to the initial partner or partners in the same way. However, as documented below, behaviour changes required in *expand* or *respond* to increase or stabilise the impact of the initial innovation will require **player level institutionalisation** among relevant players. Further programme involvement may be required so that this transferal of ownership takes place.

### Adapt

The *adapt* component of the systemic change framework refers to sustained behaviour change by relevant players. The players involved in the innovation – both those that were supported by the programme and those that weren't – must have accepted the different changes in their behaviour necessary for the model to work and incorporated them into their standard operations, in the absence of programme involvement, with independent investment of time, money, or other resources.

The process of institutionalisation – moving from adopt to adapt – needs to happen at the system level i.e. the functions which comprise the innovation need to continue to operate in this novel way after external intervention has ended. However, in practical terms, functions are comprised of a wide range of players adopting a wide range of behaviour changes. Whether an initial partner, or a player involved in the expansion or response component of the change, any shift in behaviour has to be institutionalised in order for it to be sustainable.

### Expand

Expand is about pushing the boundaries of the innovation – more benefits for more people.

Change		Mechanisms
More People	More Benefits	
<ul style="list-style-type: none"> <li>• New geographies</li> <li>• New segments of target group <ul style="list-style-type: none"> <li>○ Income groups</li> <li>○ Marginalised segments – women, minorities etc.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Lower costs</li> <li>• Higher incomes from products</li> <li>• Greater health or quality of life benefits</li> <li>• Better protection of future incomes through disease resistance or genetic diversity</li> </ul>	<ul style="list-style-type: none"> <li>• Imitation of original beneficiaries</li> <li>• Existing players <ul style="list-style-type: none"> <li>○ Roll-out</li> </ul> </li> <li>• New players</li> <li>• New geographies</li> <li>• Competition <ul style="list-style-type: none"> <li>○ Lower price</li> <li>○ Further innovation</li> </ul> </li> </ul>

6: Components and mechanisms of expand

The competition mechanism also has a dividend on sustainability, as an innovation becomes less dependent upon individual players. If others are not imitating or emulating innovations that are seemingly successful and aligned with incentives to do so, then it is indicative of a more fundamental problem with how the system operates including information transmission mechanisms.

Having monitored the adoption and adaptation of the innovation, a programme might need to re-engage in order to include new players or new areas in an innovation. It may be that the concept is proven and so the risk for a private sector partner is lower, or it may be that the programme initially targeted easier to reach areas and so heavier programme involvement is required in order to push impact into more marginal areas. Different partners also have different needs determined by their capacities, and so the type of programme support might also differ from that in the initial innovation.

In the previous example on distribution and marketing of agricultural inputs, the new model may have been successful in that all of the marketing firms, input suppliers, agricultural extension agents and farmers may have changed their behaviour in the required way. However, the impact of this change in model may have been limited to certain geographical areas or to certain segments of the population such as poor farmers or to male farmer due to their engagement in market transactions. In such cases it may be necessary to partner with other players – whether they play the same role in the system or whether their roles are different, perhaps women’s cooperatives who have closer engagement with segments of the target group. These modifications and extensions of the model will result in an expansion of the impact of the innovation – more benefits to more people.

**Respond**

The *respond* component of the systemic change matrix looks at whether other supporting functions and rules are changing in response to the innovation that has been assessed through other components. It assesses what changes are happening and the degree to which they are supportive

of or obstructive to the desired impact. If impact could be increased by responses within supporting functions and rules that are not happening independently, then this represents an opportunity to increase the scale of impact. As such, *respond* is an important aspect of systemic change for both sustainability, through creating resilience of change, and scale, through realising opportunities for increasing impact. *Respond* demonstrates increased adaptability; a sign that the system is operating more effectively.

Adopt, adapt, and expand represent changes in the operation of one or more initial supporting functions or rules which are part of a programme’s vision for how a sector might work better to improve outcomes for the target group. *Respond* represents changes in other supporting functions or rules which reinforce or enhance the changes from the initial innovation.



7: Systemic change in summary

## Employing AAER

In summary, then, there are two roles of the AAER framework. Firstly, it is an articulation of the programme’s vision. If a programme aims to bring about systemic change and the AAER framework helps articulate what it looks like, then a programme should be able to articulate how they can realistically expect the system to change in each of these four components before intervening.

However, systems are dynamic and complex and plans are rarely borne out in reality. As a second and on-going use of the framework, then, the systemic change matrix is used by the programme as a tool for monitoring, reflection and guidance to action.

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<sup>i</sup> These frameworks are developed and articulated in THE SPRINGFIELD CENTRE (2015), *The Operational Guide for the Making Markets Work for the Poor (M4P) Approach*, 2<sup>nd</sup> Edition, Funded by SDC and DFID.

<sup>ii</sup> Merriam-Webster