

Extending the Sustainable Livelihoods Framework

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Summary – This paper proposes an extension to the sustainable livelihoods framework by introducing a sixth asset, *information capital*. Information capital is a critical livelihood asset. Adding information capital as a core asset in the sustainable livelihoods framework promises to improve our understanding of peoples’ livelihoods. The paper focuses on the framework area called livelihood assets. It reviews the sustainable livelihood framework particularly the role of capital assets in livelihoods analysis. Information capital is then defined followed by a discussion of why it is important. Finally, case studies drawn from literature and empirical research are cited.

Key words – information capital, livelihood assets, sustainable livelihoods

1. INTRODUCTION

The purpose of this paper is to extend the sustainable livelihoods (SL) framework to a new domain by introducing a sixth asset, *information capital*. Information capital is a core livelihood asset. As an important factor that affects people’s livelihoods, including information capital as a core asset in the sustainable livelihoods framework promises to improve our understanding of livelihoods, particularly the livelihoods of the poor. In

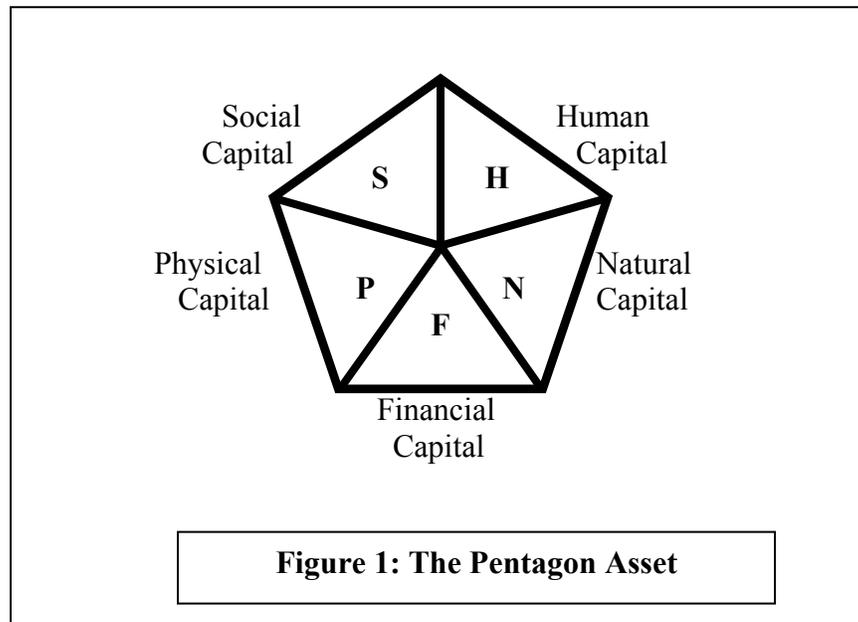
proposing this extension the paper focuses on one of the main framework areas called livelihood assets.

Scoones (1998) identified five assets or types of “capital” namely, natural-, human-, financial-, physical-, and social-capital. People, according to the livelihoods approach, rely for their success on the value of services flowing from the total capital stock. The five forms of capital do not share the same characteristics. *Natural capital* refers to the biophysical elements such as water, air, soils, sunshine, woodlands, minerals, etc. These are naturally occurring assets that are largely renewable. *Human capital* is perhaps the most important factor (Chivaura and Mararike, 1998). It is the people who are both object and subject of development.

Financial capital is the medium of exchange and therefore central to the functioning of a market economy. Its availability is thus critical to the successful utilisation of the other factors/assets. Not to be confused with natural capital, which is all physical, *physical capital* refers to man made assets such as housing, roads, and other forms of physical or hard capital making up the built environment. *Social capital* according to Coleman (1990) is productive making possible the achievement of certain ends that would not be attained in its absence. In the SL framework social capital entails the social networks and associations to which people belong.

In the past most efforts have been geared towards application of the SL framework in diverse geographical and sectoral settings (Ellis, et al., 2002; Ellis and Mdoe, 2002;

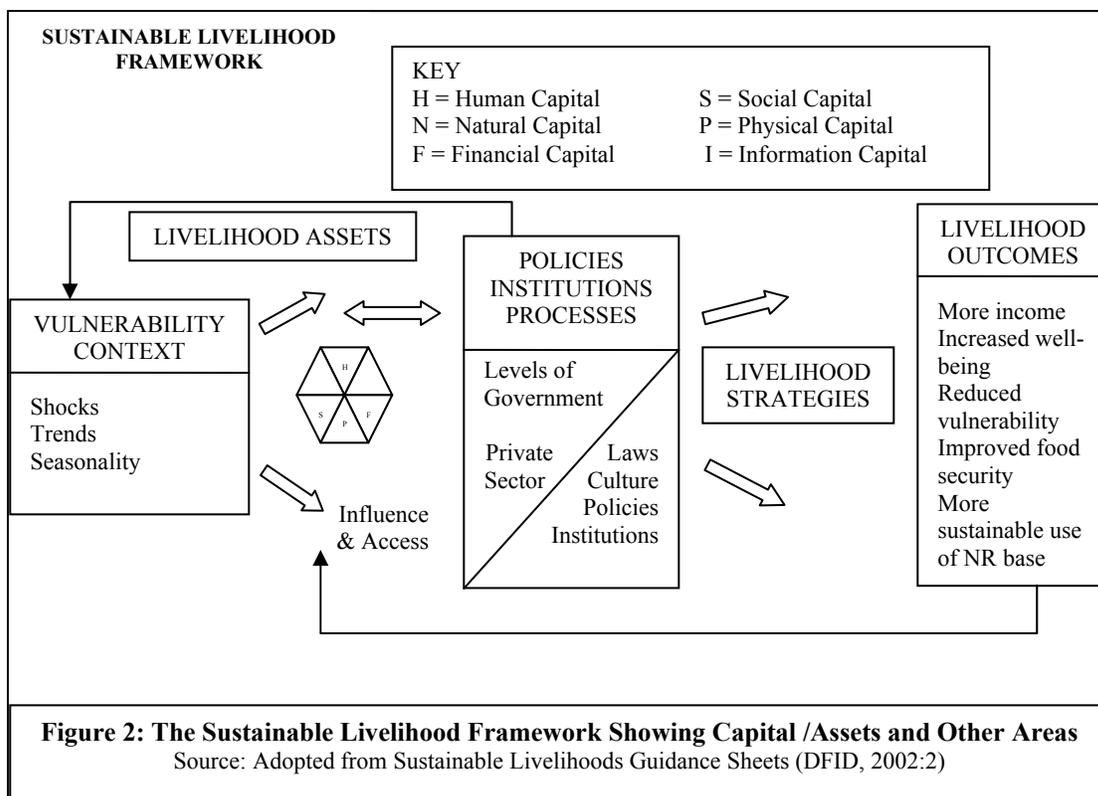
Hussein, 2002; Bebbington, 1999; Baumann, 2000; Beall and Kanji, 1999; Turton, 2000; Hobley and Shields, 2000). Much less attention has been given to the (re)construction of the framework. For example, the so called “asset pentagon” hasn’t been modified¹ since the framework was proposed by Scoones. While there have been alternative sustainable livelihoods frameworks suggested, for example, Agrisystems, Khanya’s, Brazilian, and the Imperial College (Carney, 2002), all these make use of the asset pentagon (Figure 1)



2 THE SUSTAINABLE LIVELIHOODS FRAMEWORK

Although the sustainable livelihood approach has been widely deployed as a guiding principle for rural development practice in the last five or more years, there is no unanimity regarding the origins of this approach. Singh and Gilman (1999), for example, locate the emergence of the “sustainable livelihood concept” in the United Nations World Commission on Environment and Development (WECD) popularly known as the Bruntland Commission after the Norwegian Prime Minister who chaired it even though the notion of sustainability precedes WECD.²

Ellis and Biggs (2001) suggests that the SL approach originated from strands of livelihoods ideas developed through the 1980s and 1990s by Chambers (1983), Chambers and Conway (1992), Bernstein et al (1992), and from famine analysis (Sen, 1981 and Swift, 1989). This notwithstanding, it is clear the sustainable livelihoods approach is firmly rooted in multidisciplinary research, which explains why it has been applicable in multiple geographical regions and sectors. According to the Department for International Development (DFID) of the British government, the SL framework (Figure 2) has been developed to help understand and analyse the livelihoods³ of the poor. In addition to improving understanding of livelihoods, the framework can be used in planning new development activities and assessing the contribution of livelihood sustainability made by existing activities (DFID, 2000).



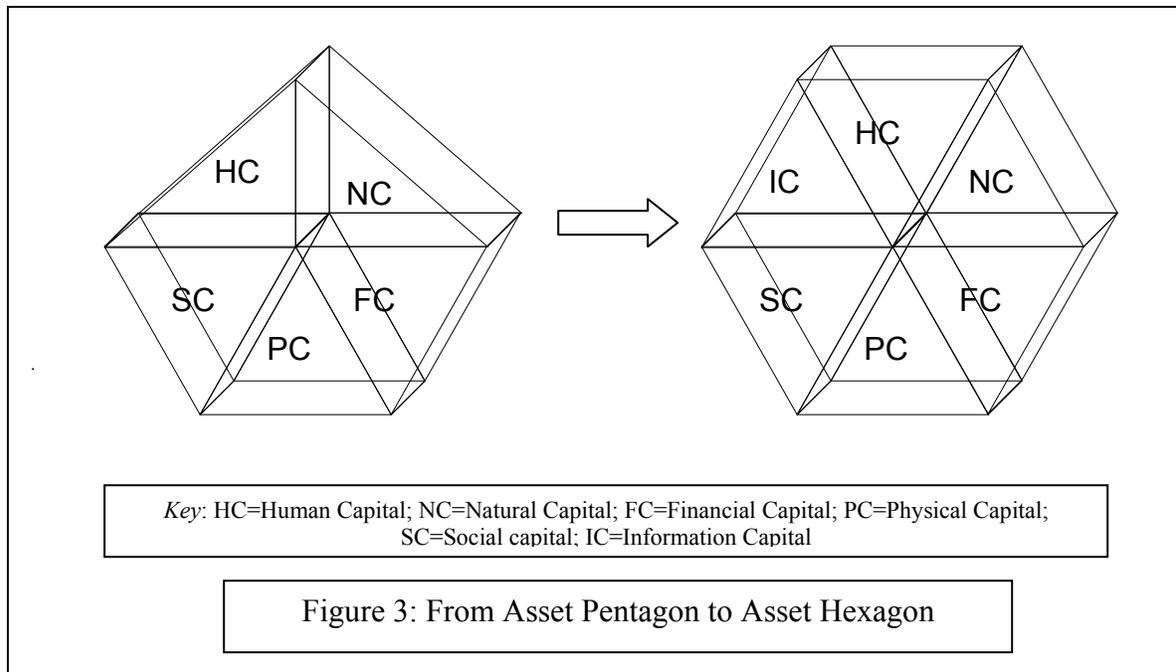
The five livelihood assets in the SL framework are transformed by policies, processes and institutions to give desirable outcomes, such as more income, increased well being, reduced vulnerability, improved food security, sustainable use of natural resource base, and so on. If achieved, these desirable outcomes then feed back to help build the capital assets base. When they are undesirable, such as soil degradation, increased vulnerability, less supportive and cohesive social environment, they erode the asset base.

Under the SL framework, people's livelihoods and the wider availability of assets are fundamentally affected by critical trends (population trends, resource trends, national and international economic trends, technology trends, and so on) as well as by shocks (human health shocks, natural shocks, economic shocks, conflict, crop/livestock health shocks) and seasonality (of prices, of production, of health, and of employment opportunities). In general, people tend to have limited or no control on the vulnerability context. The factors (trends, shocks and seasonality) that make up the vulnerability context impact directly on people's asset status and the options open to them in pursuit of beneficial livelihood outcomes.

3 EXTENDING THE SL FRAMEWORK

We extend the SL framework by introducing a sixth asset, information capital, to the livelihoods asset area of the framework.⁴ Information capital (see definition below) is such a fundamental and vital livelihood asset/resource that it ought to be integrated into the sustainable livelihoods framework. Information is such a critical component in people's lives that it is inconceivable to talk about sustainable livelihoods without

referring to the role of information. Indeed, one of the core objectives of sustainable livelihoods approach is to improve (poor) people's access to information (DFID, 2000). Information provides a strong leverage that can be used to access the other forms of capital. Thus graphically the 'pentagon' gives way to a new 'asset hexagon' (Figure 3).



But the significance of this extension goes beyond symbolism; it has practical appeal in sustainable livelihoods analysis. The conceptualisation of assets as different kinds of capital has, according to Brock (1999) expanded the way that villagers describe important elements of their livelihoods into the language of policy makers. These terms are particularly useful when emphasising the integral importance of intangible assets (e.g. social capital and information capital) to constructing livelihoods. Thus, like its predecessor, the asset hexagon remains at the core of the livelihoods framework. As a unifying framework, the inclusion of information capital does not distract from the broad

and encompassing agenda of increasing the sustainability of poor people's livelihoods. Viewed against the vulnerability context, the hexagon represents visually people's differential access to assets. Hence the hexagon is a useful focal point for debate about suitable entry points, how these will serve the needs of different social groups and perhaps, likely trade-offs between different assets (DFID, 2000).⁵

4 DEFINING INFORMATION CAPITAL

What is Information Capital?

Information has been defined differently by many people: "Information as thing" (Buckland 1991); "information as resource" (Martin, 1995); "information as commodity" (Braman, 1989); "information as reduction of uncertainty" (Babe, 1994); "information as the statistical probability of a sign or signal being selected from a given set of signs or signals" (Shannon, 1948); "information as a constitutive force in society" (Braman, 1989); "information as data endowed with relevance and purpose" (Drucker, 1988); and "information as an intangible, which involves either the telling of something or that which was being told" (Machlup and Mansfield, 1983).

In the SL approach the asset capitals are essentially resources, access to which is vital for constructing livelihoods. Information as a resource comes closest to this perspective. As Martin (1995) suggests, the notion of information-as-resource is not only inherently attractive and intuitively plausible it is also well established in fact. In sustainable livelihood terms, information capital is an asset in the sense that finance, social networks, land, etc, are assets.⁶ They become "capital" or resources owing to the value attached to

them and the uses they are put to. There are literally countless uses to which information can be put to. In fact, there can never be any doubt that information is a vital resource.⁷

As Martin points out, information has been a significant element in the life all societies.

Furthermore, the definition of information-as-a-constitutive-force-in-society is compatible with the sustainable livelihoods approach. Again as Martin has noted, this definition grants information an active role in shaping context. “Information is not just affected by its environment, but is itself an actor affecting other elements in its environment” (p. 21). To the extent that information is embedded, it constitutes a basic foundation for policy making. In this paper, therefore, ‘information capital’ means different kinds of data⁸ endowed with relevance and purpose used by people to make decisions in pursuit of their livelihood objectives.

The importance of information capital

Information is, and has been, important in development discourse and narrative.⁹ In the small-scale farm intensification paradigm, for example, diffusion of information is said to play an important role in raising agricultural productivity. In the past few years, information capital has gained recognition as a critical asset for individuals and enterprises. In the modern economy, the competitiveness of enterprises is correlated with their information management habits. It is argued that businesses that make good use of information can significantly enhance competitiveness *Emerald Now* (October 2002).

The *World Development Report 1998/99* argued that information is the lifeblood of every economy. Indeed, as countries develop the requirements for information increases. Yet, as the report (World Bank, 1999) notes:

“Whether in the labour market, the credit market, the land market, or commodity markets, the poor often suffer most from the consequences of information failure. It is the poor who are most likely to have difficulties gaining access to credit because they lack collateral, or who have to pay what seem like usurious interest rates when they do get loans. It is the poor who must resort to sharecropping contracts, which lower their productivity. It is the poor who are often limited to job opportunities in their immediate vicinity, where market segmentation holds their wages down. And it is the poor who are impoverished in many other ways, not least in their lack of access to information, which contributes to their sense of isolation” (p. 80).

In order to make information capital work for the poor, analysis should focus on how people make decisions under the typical vulnerability conditions such as missing information, time constraints, vague goals and changing conditions. How are people able to cope, in some cases do so well? How can the poor lobby for legislation in support of intellectual property rights to encourage investment in goods and services of importance to them unless they are informed? What are the institutional mechanisms that facilitate or inhibit people secure access to assets (information capital included) they need to build

livelihoods? Is capital available and to whom and in what combination? Obviously, information capital is central in attempting to answer these and other questions.

Some mundane choices, like proper use of natural resources may not seem impressive until the personal and social costs are taken into account. Barbier (1987) argues that the main obstacle to sustainable agricultural development is the failure of economic policy to address adequately problems of natural resource management. He goes on to conclude that “if sustainable agricultural development is a desirable objective, these natural resource management concerns must be adequately addressed by agricultural policy” (p.6). However, I would go further to add that farmers must be adequately informed about the benefits and costs of agricultural output and pricing policies so that they can institute appropriate natural resource management measures in order to achieve sustainable agricultural development.

In the book *Sources of Power: How People Make Decisions*, Gary Klein (1998) argues that experience can be used to make rapid and effective decisions. The challenge is to identify how that experience came into play. Are there some people who are more knowledgeable¹⁰ than others? Why? Under vulnerable conditions people have to make quick decisions. Most often than not they need to draw on their experience because transforming processes (policies and institutions) act as constraints. The consequence is people do not have access to information that would provide them with an ideal strategy, which would propel them to desired livelihood outcomes. Alternatively, assuming that

there is an enabling environment in its widest sense, what difference would this make to poverty and livelihoods?

5 SOME EMPIRICAL EVIDENCE

In a market study to promote market linkages in Masvingo, Zvishavane and Chivi districts of Zimbabwe (Odero et al, 2000) explored factors influencing farmers' access to goods (inputs) and services (markets), which they require to generate adequate income for sustenance. Given the low asset status of smallholder farmers the (livelihoods) approach to the market study sought to understand the situation of smallholder farmers in relation to inputs and produce markets within the broad socio-economic, political and institutional setting. The study findings showed that most communal farmers find it easier to market small livestock such as goats and chicken. Whilst there is scope for marketing pigs, high cost of inputs, lack of knowledge and information about lucrative markets or the requirements for participation in those markets, high transport cost and poor communication infrastructure and service are the main factors barring farmers from participating in these markets.

Lack of participation in emerging markets was also noted in the sorghum sub-sector. Sorghum molasses or sorghum syrup is a sweet juice extracted from sorghum stalks, which, like that from the sugarcane, is boiled down to produce thick syrup. This product is often used as table syrup and to sweeten and flavour baked goods. The market for this product in Zimbabwe is still unexplored. There is a rather limited market for primary food products like sorghum in the international market. Thus the study concluded that

while the opportunities in the local market are far from exhausted, information about demand in the international markets could be used to improve productivity in producing areas as happens with cotton lint (ibid).

On financial services, the study found that whilst the need for viable rural credit programmes is well recognised, there was need for information about existing schemes. Smallholder farmers in Mopane Irrigation Scheme, for example, mentioned that they would like credit for inputs and equipment (sprayers). When probed whether they had approached any institution, it turned out that they hadn't. Yet, there are a number of individual and institutional sources of credit in the three districts. In Zvishavane, for example, a local entrepreneur (Mr. Chimuti) was willing to extend credit to irrigators so long as he was assured of repayment. He had been giving credit to farmers at the Mabwematema Irrigation Scheme for three years. Clearly, without information of what is available, smallholder farmers cannot access credit.

In the horticultural sector the study found that smallholder farmers faced serious problems of producing the right quantity and quality of vegetables demanded by local, regional and international markets. Access to information, credit, transport and inputs were some of the problems identified as constraining the production and marketing of vegetables in Masvingo.

Apart from our own research, there is ample evidence from literature that shows that information is one of the core assets by which people build their livelihoods. Most

participatory activities, for example, are designed to help farmers resolve problems themselves. Indeed, analysis of the content of participatory exercises can easily show that “empowerment” is usually an objective regardless of whether it is achieved or not. However, devoid of informational value “empowerment” as a concept is empty. Indeed, as participatory rural appraisal (PRA) practitioners would attest, a remarkable strength of the PRA process is the sharing of information during report back sessions.

In sustainable agriculture, Barbier (1987) has argued that government policies that deliberately encourage the production of food crops in marginal areas often without simultaneously encouraging proper management techniques and agricultural practices that can reduce environmental and soil erosion problems are the main obstacle to sustainable natural resource management. This need not necessarily be the case if farmers have access to information that growing seasonal crops in hilly areas could increase soil run-off and erosion, which would degrade their fields and make them more vulnerable to food shortages. For instance, why should “planned” extension of maize, sorghum and millet into dryland areas exacerbate problems of soil erosion and exhaustion as has tended to be the case throughout the developing countries?

Whilst input requirements of increased food and cash crop production may also have important ecological impacts, information about inappropriate use of inputs such as fertilizers, pesticides and irrigation can prevent agricultural pollution, resource depletion and similar externalities.¹¹ If cultivators have (technical¹² and financial) information of future losses in agricultural productivity due to pest resistance, misallocation of input

investment or inappropriate application and wastage, which is a cost to them and to society, they are likely to make appropriate decision with respect to use of fertilizer, pesticide and water. This would not only be beneficial to farmers, it would impose less financial burden on governments. Such information (i.e., of user and externality costs) in the hands of agricultural producers will lead to near optimal allocation of natural resources, including arable land.

In the theory and practice of market information services, there are strong claims that market information is crucial to enable farmers and traders to make informed decisions about what to grow, when to harvest, to which markets produce should be sent and whether or not to store it (Shepherd, 1999). Experiences from Benin (Lutz, 1994), Indonesia (Shepherd and Schalke, 1995), Philippines (Holtzman, et al., 1993), Zambia (Government of Zambia, 1995), among other developing countries show clearly that lack of information is an entry barrier to both trade and production. Where farmers have had access to information they are able to move beyond subsistence production. In general, market information can have wide ranging impacts. It can: 1) promote spatial arbitrage by traders; 2) facilitate allocation of productive resources; 3) improve the bargaining position of farmers with traders; 4) reduce transaction costs by reducing risks; 5) encourage shifts in cropping patterns to higher value produce; and 6) contribute to more efficient marketing, particularly improved spatial distribution (Shepherd, 1999).

Of course, there is a caveat to the virtues of information. As already defined, information capital is data that is endowed with relevance and purpose used by people to make

decisions in pursuit of their livelihood objectives. This means that not all information is relevant or beneficial. The embedded nature of information capital requires that individuals exercise their (cognitive) skills in such a way that they are able to understand, explain, compare and evaluate information. Here is where human capital becomes critical because, in the final analysis, the use to which information is put to is, among many other things, dependent on the depth of knowledge and level of cognitive skills that an individual has. Clearly, the social networks that one belongs to, his or her background in terms of education and experience, plus a host of other traits, combine with other capital assets in different proportion in the process of constructing livelihoods. Mapping out these assets in different situations, and developing programmes and policies that are people-centred, is the challenge.

6 CONCLUSIONS

Information capital is a core livelihood asset. As an important asset that people draw upon, including information capital in the sustainable livelihoods framework and analysing how it interacts with the other assets promises to improve our understanding of the ways in which people compose livelihoods. Particularly among the poor, this will go a long way in helping meet the objective of eliminating poverty. As Bebbington (1999) observes, it can also help us improve the effectiveness and relevance of public investment. Since this paper is not proposing changing the other components of the sustainable livelihoods framework, it is important to underscore the holistic, dynamic and integrated approach the SL framework employs. The new asset hexagon is thus not a separate theme but part and parcel of the broader agenda of the sustainable livelihoods

approach. The conceptualisation of assets as different kinds of capital has, according to Brock (1999), expanded the way that villagers describe important elements of their livelihoods into the language of policy makers. These terms are particularly useful when emphasising the integral importance of intangible assets such as information capital to constructing livelihoods.

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NOTES

¹ Some authors, notably Bebbington (1999) and Baumann (2000), have suggested additional forms of capital. However, they do not specifically advocate for the extension of the SLF as we do in this paper.

² Concerns over the environment had been raised a decade earlier. See, for example, Meadows et al (1972).

³ According to Chambers and Conway (1992), *a livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living*. Also see Carney, 1998; Pretty, 1998; and Johnson, 1996.

⁴ Other capital assets that have been proposed include cultural and political capital (Bebbington, 1999)

⁵ While the Sustainable Livelihoods Guidance Sheets (ibid) do not require that all assets be quantified, indicators can be developed where these are deemed useful. This is particularly relevant to information capital which faces problems of measurement and appropriability (Martin, 1995).

⁶ This is not to say that assets have similar characteristics. Asset capitals differ in terms of mobility, measurement, appropriability, among other criteria.

⁷ Some authors like Horton (1979) have gone to the extent of equating information to oil and similar raw materials.

⁸ It could be data derived or conclusions drawn from research or analysis in the form of summaries, totals or reports, the contents of a document, book, broadcast, film, CD, or any interpretations drawn. However, information is not limited to ‘formal’ structures; it is often embodied in local knowledge systems too.

⁹ For example, the literature of economics of costly and asymmetric information began with two problems in the insurance industry, adverse selection and moral hazard. It has come to include the economic theory of organisations, bargaining theory, and theories of incentive-compatible contracts. Of particular relevance to developing countries is George Akerlof’s (1970) lemon principle, Joseph Stiglitz’s (1975) work on screening, as well as the large literature on sharecropping, which evolved into literature on optimal contracts and merged with principal-agent theory.

¹⁰ “There is a fine line between knowledge and information. In everyday practice, knowledge is regarded as a higher order concept than information, as information that has somehow stood the test of time and entered into the knowledge base” (Martin, 1995:24). Hayes (1992) identifies cognitive structure with knowledge, where the effect of information may indeed be a change in knowledge. Accordingly, Hayes regards knowledge and information as mutually exclusive, where information is data and knowledge is inferred essence (ibid). From this we can infer that knowledge (and skill) is by definition part of human capital.

¹¹ Other important externalities from inappropriate use of agricultural inputs include the effects on human health, fishing activities and biological diversity of pesticide misuse; problems of groundwater contamination and eutrophication of surface water from fertiliser run-off; and the diversion of scarce water supplies to irrigation from other valuable uses (e.g., industrial purposes, domestic use, fish ponds, etc.).

¹² Access to information about alternative technologies, those that are relatively low-cost, appropriate in scale and application, safe and affordable is critical for promoting sustainable food production.