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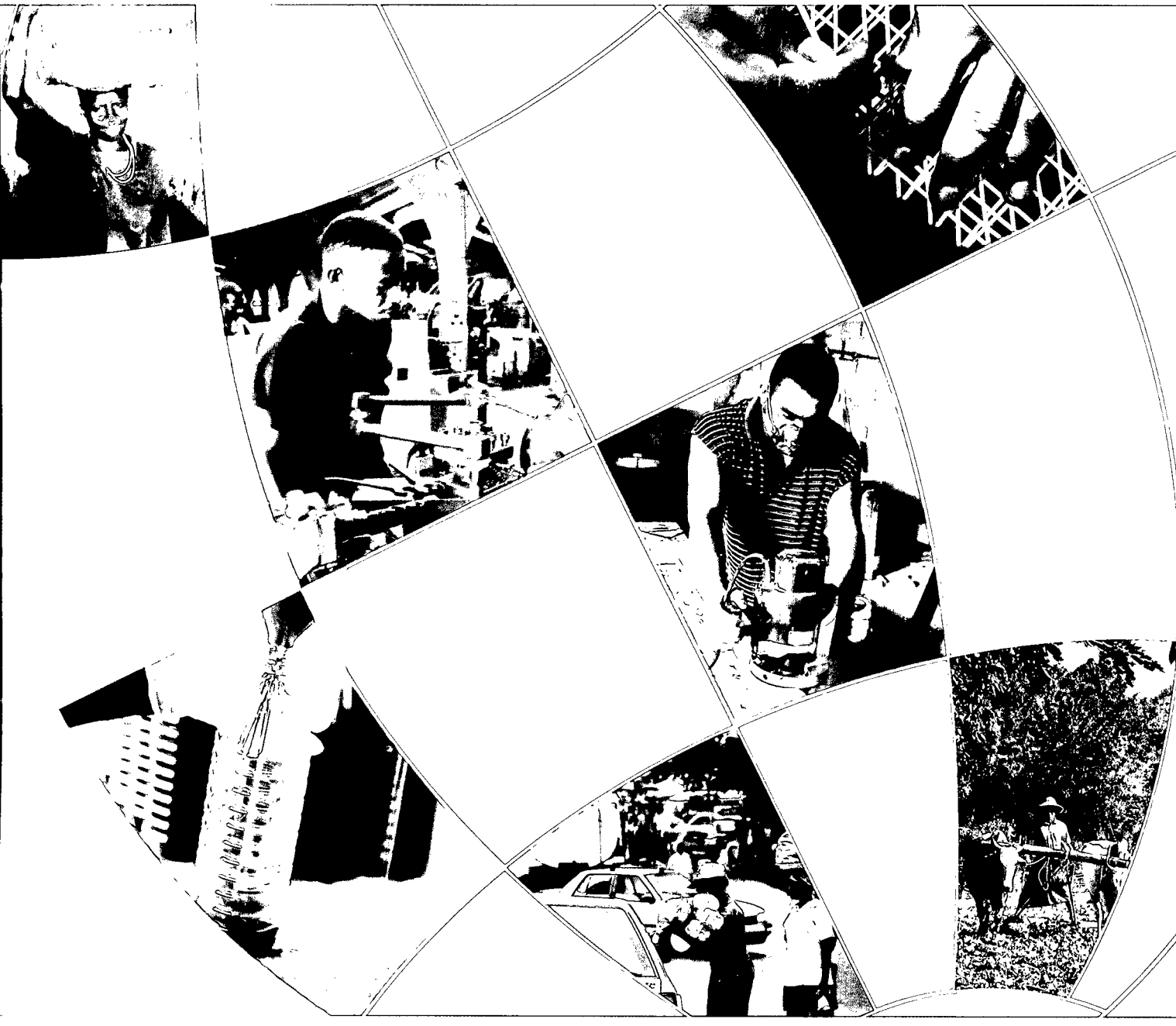
INDUSTRIAL CLUSTERS AND POVERTY REDUCTION

Towards a methodology for poverty and social impact assessment of cluster development initiatives



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INDUSTRIAL CLUSTERS AND POVERTY REDUCTION

Towards a methodology for poverty and social impact assessment of cluster development initiatives

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CONTENTS

EXECUTIVE SUMMARY

This study addresses the relationship between industrial clusters and poverty. This is a relatively underdeveloped theme within policy research on clusters. The focus on poverty is driven by contemporary concerns on poverty targeting in development assistance. The study also seeks to develop a methodology to conduct poverty and social impact analysis of cluster development initiatives.

Industrial clusters, or geographical concentration of firms and ancillary units engaged in the same sector, can generate various advantages for small firms, from agglomeration economies to joint action benefits. The cluster model emphasises internal linkages, whereby cluster gains are furthered by local firm cooperation, local institutions and local social capital. The growing evidence on small firm clusters in developing countries competing in local and global markets has driven much of the policy enthusiasm on promoting clusters.

External linkages also matter, global buyers can help local clusters access distant markets, acquire new forms of knowledge and upgrade. The nature of governance in the relationship that local clustered firms have with buyers in global value chains is critical to this, determining the autonomy and power of local actors. The value chain methodology helps map how local clusters are inserted into global value chains. It also provides a basis for charting the link to poverty by mapping "poverty nodes".

Industrial clusters lend themselves to poverty concerns both directly—through employment, incomes and well-being generated for the working poor, and indirectly, through their wider impacts on the local economy. Conceptually, clusters and poverty are related in three distinct ways. Through cluster features, cluster processes, and cluster dynamics. Certain types of clusters may have a more direct impact on poverty. These include clusters in rural areas and in the urban informal economy, clusters that have a preponderance of SMEs, micro-enterprises and homeworkers, clusters in labour intensive sectors and clusters that employ women, migrants and unskilled labour. Agglomeration economies reduce costs and raise the capabilities of workers and producers. Cluster joint action takes such capabilities further, strengthening capacity of local firms and reducing vulnerability to external shocks. But, cluster growth produce winners and losers amongst firms and workers. For a poverty agenda, it is critical to note which types of firms and workers gain over time and which lose.

Few cluster studies have explicitly addressed poverty concerns. A review of existing evidence underlines the relationship between clusters and poverty. There is substantial evidence that clusters generate employment and incomes for the poor in the developing world, and on their growth dynamics. It is in the more advanced clusters, that evolved from poorer incipient clusters, that employment growth is most substantial. The limited evidence on counterfactuals suggests a relationship between clustering and gains in employment and incomes.

In incipient clusters, small producers advance by taking small riskable steps in coordination with others in the cluster. This allows small producers and workers to survive and to grow, thus raising their income and well-being. We observe that this can be accelerated by the gains that clustering brings about. Local agglomeration economies are central to growth, as well as to the income and well-being of those engaged in incipient and mature clusters from rural Indonesia to the urban informal sector of Lima, to the export clusters of Mexico and Brazil and India. Joint action is also important, especially in the context of assisting local

producers and workers to confront external shocks as seen in Sialkot, Pakistan and the Palar Valley, India. There is evidence that social capital can contribute to strengthening cluster capacities and the well-being of local workers and producers.

It is evident that growth results in differentiated outcomes. Local linkages can give way to external linkages. Conflicts between the competing interests of large and small firms become more apparent. There are clear signs that particular categories of workers, especially women and unskilled workers, often lose out as clusters upgrade.

In order to further our understanding of the effects of cluster development programmes (CDP) on poverty, it is necessary to develop a methodology for poverty and social impact assessment for CDP. This paper combines a value chain mapping and capabilities approach to do so, arguing that the impact assessment perspective adopted should be one that is designed as a means of *improving* impact.

A value chain mapping of clusters helps identify links between key cluster stakeholders, both entrepreneurs and workers, and cluster institutions. Poverty profiling helps identify the main "poverty nodes" where poorer groups are located within the cluster. Further disaggregation facilitates poverty impact assessment of different categories of firms and workers, and identify differences in poverty impacts based on gender, ethnicity and religion.

The paper develops a methodology for impact assessment of poor groups within clusters drawing on a capability approach, in order to assess how the well-being of poorer groups identified in the mapping is affected. This draws on a mix of quantitative, qualitative and participatory methods. It examines ways in which a baseline can be constructed, and the issues involved in establishing a "comparator group" through which the differential impact of cluster programmes on poverty can be assessed. Finally, it considers how this can be embedded within cluster programmes as part of an ongoing learning process.

These findings stress the need for policy interventions. Policies aimed at supporting marginalized producers and workers. Such policies need to identify the capability deprivation of poor workers and entrepreneurs and identify how their well-being could be enhanced. A policy agenda on clusters and poverty needs to have, as a starting point, a method for ex-ante identifying clusters where poverty concerns may be especially valid. The discussion on the relationship between poverty reduction and specific cluster features, cluster processes and cluster dynamics provides us with a basis for mapping clusters and poverty.

Cluster development initiatives need to distinguish between incipient clusters where poverty incidence is high, and growth engine clusters that can generate incomes both directly and indirectly for the poor, and have strong local institutions that strengthen the ability of clustered actors to engage in pro-poor collective action. Thus, a pro-poor policy agenda needs to be engaged at two levels. First, the tweaking of existing cluster policy initiatives to make them more effective for a pro-poor agenda—such as poverty targeting, training, and microcredit provisioning. Second, concentrating on particular areas where cluster development programmes have often tended to ignore. These include, in particular, labour and ethical standards, conditions of work, and health and safety issues.

The study underlines the need for further research, in terms of comparing poverty impacts across a range of distinct types of clusters, from mature clusters to incipient urban informal clusters to rural clusters. It also calls for the effective inclusion of poverty and social impact assessment within cluster development programmes as part of on-going agenda of improving policy.

1.

INTRODUCTION

This study addresses the relationship between industrial clusters and poverty. It specifically asks if cluster development initiatives, that improve access for local firms to local and global markets and promote local governance, can have positive poverty impacts that enhance income, employment and well-being of workers and entrepreneurs within a cluster. This is an important, albeit neglected, aspect of the research and policy agenda on industrial clusters. Our concern with poverty reduction is in part motivated by the policy focus on this area arising from the United Nation's Millennium Development Goals, and commitment by leading industrial and developing countries to half the proportion of households with income per person of less than US$1 per day by 2015. Poverty is also increasingly acknowledged as a multi-dimensional problem that involves more than deprivation of income, but also lack of freedom, increased vulnerability, risk, and powerlessness. According to the World Bank "meagre assets, inaccessible markets and scarce job opportunities lock people in material poverty" (World Bank, 2000-1:1). Increasing assets, capabilities and accessibility to markets are, thus, key to poverty reduction.

Industrial clusters, which Porter (2000:254) defines as "a geographically proximate group of inter-connected companies and associated institutions in a particular field, linked by commonalities and complementarities", have long attracted the attention of researchers and policy makers for the growth prospects they offer small and medium sized enterprises (SMEs). As this study argues, clusters can also play a potentially important role within a pro-poor agenda: by creating jobs and promoting incomes for the poor, especially for marginalized segments of the labour force—such as women, migrants and those with low levels of education and formal training; by helping poor entrepreneurs mobilize limited resources; by providing avenues for collective actions that enhance the well-being of poor communities; and by furthering wider social and developmental goals. But this is not an automatic outcome. It requires an explicit consideration of poverty concerns within cluster development strategies.

Clusters matter because geographical agglomeration can potentially help small firms overcome constraints associated with size, promote technological development, and enhance their ability to compete in local and global markets. The gains of clustering include localized external economies, particularly economies of scale and scope as small firms specialize and engage in a division of labour. Geographical proximity also creates possibilities for local co-operation, between firms and through local institutions. Schmitz (1995) captures these clustering advantages in the concept of collective efficiency, distinguishing between passively acquired benefits that arise from specialized agglomeration—of skills, inputs and knowledge and actively generated gains that accrue from the joint action of clustered actors. Thus, cluster-based producers and workers can be potentially better off than they would be if they were operating in isolation. In addition, clusters are also said to be marked by a strong sense of common social identity. This is often based on shared norms or common notions of community that lie in ethnic, religious, regional or cultural identities. This can result in local social capital that strengthens cluster ties, fosters trust between local actors and promotes local cooperation and support.

The potential networking gains for clustered enterprises has led to the view that clusters offer a specific path of regional industrial and economic development, as well as the possibilities of technical innovation and growth. This has fostered a growing academic literature on

clusters (Markusen, 1996; Malmberg, 1996, 1997; Scott, 1996; Malmberg and Maskell, 2002). Clusters are also considered particularly relevant to developing countries (Nadvi and Schmitz, 1999) motivating significant policy initiatives within industrial development strategies (see UNIDO, 2001, 2002; UNIDO, 1999).

Despite the progress made on academic and policy research on industrial clusters, poverty concerns tend to be ignored in much of the cluster literature. Instead, the focus is on the potential economic gains of clustering, in particular the ways in which clustering enhances competitiveness and promotes growth. There is an implicit assumption that such growth translates into rising levels of employment and incomes, with improving conditions and standards for labour engaged in clustered SMEs. Yet, for the most part, such issues are rarely explored. In particular, relationships between clustered firms and workers are insufficiently analysed.

Industrial clusters can make a potentially important contribution to this agenda. Not only do they enhance the ability of small firms to compete in global markets; they can also promote sustainable employment and incomes and thus better the situation for the working poor. This assumption is grounded in the notion that SMEs account for a significant proportion of manufacturing employment in developing countries, and that they are predominant in labour intensive sectors with a propensity of employment of the working poor. Clusters, as a distinct form of industrial organization, allow SMEs to overcome constraints on their size, and offer possibilities of collective action in the face of common problems. Such benefits are brought into sharper perspective by the process of globalization which, while offering new opportunities for developing country enterprises and workers, inter alia, raises the vulnerability of small firms, and those who work in them, to external shocks. Clusters are also relevant in that they offer potentially important benefits of developing social capital and social protection through local trust-based relations. Such forms of social assets can be of significant advantage to firms and to labour. At the same time, it is important to recognize the heterogeneity between clustered firms, and amongst labour within clusters, and to recognize that the gains from clustering can be unevenly distributed.

Thus, in exploring the agenda on clusters and poverty, we raise the following questions:

- In what ways can industrial clusters affect poverty reduction?
- In which types of clusters are poverty reducing impacts most significantly felt?
- How are poverty impacts differentiated within clusters? Which types of firms and which types of workers are most affected?
- What does the existing evidence on industrial clusters state about the ability of clusters to address poverty reduction goals?
- What would be the appropriate methodologies to assess the poverty and social impact of cluster development initiatives?

The paper is structured as follows. The following section develops our conceptual framework for analysing the relationship between clusters and poverty. It outlines current debates on poverty, to show how our understanding of poverty is changing. The debate has moved from the relatively narrower notions of income-metric measures to a wider understanding of poverty that takes into account questions of assets, vulnerability, diversity and participation. Linking

the "capabilities" approach (developed by Sen) to a value chain framework provides us with a framework to assess how industrial clusters can impact on poverty.[1]

Section 3 considers the conceptual links between clustering and poverty. This involves a consideration of cluster features that lend themselves to a poverty agenda. It addresses the clustering processes that mitigate poverty—through agglomeration gains, through joint action, and through the presence of social capital and social protection. Finally, we consider the differentiated nature of gains, by firms and workers, and implications for poverty, as clusters grow.

Given the paucity of material that directly addresses the poverty implications of industrial clusters, Section 4 revisits the existing cluster literature from a poverty perspective, using the framework of cluster features, cluster processes and cluster dynamics. On the basis of the review of the evidence, the section concludes by developing a typology for undertaking a cluster to poverty mapping.

Section 5 turns to the issue of measurement of the social and poverty impacts of clustering. To date there have been few attempts to develop impact assessment (IA) tools for clusters, and none that explicitly focus on the poverty and social impact of cluster development. Hence, we consider current thinking on the development of IA methodologies that take on board the wider poverty and social concerns. This helps point ways in which impact assessment methodologies can be developed for cluster development initiatives. On the basis of the discussion in this and the previous section, we put forward a diagnostic framework to identify the types of clusters where policy interventions would most likely have a direct impact on poverty reduction. We examine how an IA methodology can be developed for industrial clusters drawing on the value chain and capabilities approaches. Thus, this section outlines the issues that need to be addressed in formulating such impact assessment tools that can be of relevance to cluster settings.

The paper concludes by considering the policy implications that arise from adopting a pro-poor agenda on cluster development. Given the dearth of research on links between clusters and poverty, important questions on the trade offs between support to growth oriented clusters on the one hand, the traditional focus of cluster development programmes, and "survivalist" clusters of poor producers and workers needs to be tackled. This has important consequences for local cluster-based institutions, which provide key services for clustered producers, and for external support agencies, that seek to promote cluster development. This implies that policy measures may need to be more exploratory, targeting poorer groups within clusters, seeking to promote growth, being aware of the need to offset differentiating impacts within cluster growth trajectories, focusing especially on issues of labour and working conditions as one key aspect of poverty, and using impact assessment approaches that provide a learning tool to improve policy interventions.

[1]The use of the term "capabilities" differs in the poverty literature from the way in which it is applied in the industrial and technological innovation literatures—which refers to the technological and production capabilities of firms, and regional economies. See for example, Freeman and Soete, 1997. To limit confusion, we use "capacity" when referring to firm level capabilities.

POVERTY AND GLOBAL VALUE CHAINS: Defining a conceptual framework

Economic definitions of poverty in the development literature have been primarily based on the ability to purchase goods and services, that is, on income and consumption and on material possessions or assets. From such calculations the income poverty line is derived and used to assess the proportion of people living below this threshold, and how far they fall in terms of the poverty gap. In contrast, the dollar-a-day poverty line, introduced by the World Bank in the 1990 *World Development Report,* refers to household expenditure per person. Although criticized, it continues to be widely used as an easy yardstick to compare poverty levels across countries and over time. Economic definitions of poverty thus focus on goods and services as measured through market (or imputed market) prices and the corresponding policy thrust in poverty reduction is on increasing incomes and consumption.

There have been significant changes in development thinking on poverty over the last 25 years and a broader multi-dimensional concept of poverty has been increasingly adopted by actors in the international development arena (Kanji and Barrientos, 2002). Whilst income-consumption measures of poverty continue to remain important, there is greater consensus that a thorough understanding of poverty requires more comprehensive socio-economic analysis. This includes the need to incorporate the views of poor people themselves if poverty reduction policies are to be successful. Social dimensions of well-being, particularly infant mortality, health and education, are more regularly integrated into concepts of poverty, as well as women's equality and empowerment. These features of poverty are all reflected in the Millennium Development Goals.

Capabilities—An important influence in the shift away from a narrow focus on income as the sole determinant of poverty has been the capability approach, developed by Sen (1999). This takes the view that development involves the expansion of human capabilities and well-being. It posits that individuals value different states of "beings and doings" or *functionings.* These can range from relatively elementary states, such as being well nourished, to more complex states, such as participation and empowerment. An individual's *capabilities and entitlements* relate to their ability to achieve desired combinations of functionings, reflecting their freedom to choose a life that they value. Poverty is thus seen as deprivation of basic capabilities, rather than simply low income (Sen, 1999). This does not deny income as an important cause of poverty, as lack of income can be a principle reason for capability deprivation, but that there are also other intrinsic influences on poverty. These can include an individual's personal circumstances, such as their age, gender, ethnic origin, or whether they have a disability or illness. This also allows for the inclusion of wider socio-economic circumstances, such as physical location, social discrimination, or extent of public service provision in assessing poverty.

Operationalizing the capability approach to measure poverty can, however, be difficult (Stewart, 2003). First, there is the issue of how to translate an individual's capabilities, which represent possible achievements, into something which is observable. Poverty assessments tend to measure actual outcomes rather than capabilities. Second, Sen does not provide a specific list of basic capabilities, although he suggests that basic concerns, such as being well-nourished and avoiding morbidity, should be part of such a list.

Participation—Another significant shift in the approach to poverty took place through the work of Robert Chambers (1983, 1989, 1995). His focus on vulnerability and livelihoods, based on participatory research methods, drew attention to the multi-dimensional nature of poverty including social and physical isolation, powerlessness and lack of voice, low social status and physical weakness. In addition, it introduced the concept of vulnerability to shocks of various kinds. Vulnerability relates to risk and people are vulnerable to poverty when they are more at risk than others, due to factors at different levels: household (e.g. due to ill health), community/regional (e.g. due to drought) and national level (due to particular policies). Through the 1990s, acceptance has grown of the need for a more dynamic conceptual and methodological approach to the understanding, measurement and assessment of poverty, which takes into account risk, vulnerability, isolation and powerlessness and includes the views of poor people themselves. This is best illustrated by the huge increase in participatory poverty assessments (PPAs) carried out in developing countries, to improve the effectiveness of public policy aimed at poverty reduction (Norton et. al., 2001). PPAs aim to include the views of poor people themselves in the analysis of poverty and formulation of policies. This approach has found a home not only amongst NGOs, but also amongst some governments and multi-lateral agencies, exemplified by the World Bank's adoption of participatory country PRSPs in the 1990s.

A key emphasis in the cluster literature is on the role of *internal* linkages in enhancing competitiveness, through social capital, local business services and local inter-firm cooperation. In the context of globalization, however, the ability of clustered producers to compete in local as well as global markets cannot be explained by local factors alone. An important aspect of the contemporary research agenda is the relationship between local clusters and global buyers (Schmitz and Knorringa, 1999). The global value chain approach provides a way forward in analyzing both *internal* and *external* linkages. Gereffi defines such chains as a set of "interorganizational networks clustered around one commodity or product, linking households, enterprises and states to one another within the world-economy" (Gereffi and Korzeniewicz, 1994:2). Thus, a value chain "describes the full range of activities that are required to bring a product from its conception, through its design, its sourced raw materials and intermediate inputs, its marketing, its distribution and its support to the final consumer" (Kaplinsky, 1998:13).

The utility of the value chain approach is that it shows how the distinct functions involved in turning a raw material into a retailed product can be mapped onto the complex interrelations that exist between local suppliers and global buyers. This provides a framework for charting how local clusters access domestic and global markets via their links into value chains. The approach emphasizes the role of governance, or conscious coordination, of distinct activities within the chain. This highlights the significance of power in the chain. The influence of actors in the chain can vary, affecting their ability to determine the parameters of production—including what is produced, how, when, and at what price (Humphrey and Schmitz, 2000).

Value chain analysis normally focuses on firm linkages, but it can also be extended to provide a potentially useful handle for analysing the links between global exports, local production, employment and poverty. This has been done in a series of recent studies that explore the connection between globalization and poverty (see www.gapresearch.org and Nadvi (2004) for details). It has also been used to assess how local SMEs and small firm clusters are inserted into global markets (Kaplinsky and Readman, 2001; Humphrey and Schmitz, 2000;

Humphrey, 2003). It helps identify particular "poverty nodes" or groups of firms where poor producers and/or workers are located, and analyse how their position could be improved through training or upgrading. The approach is, thus, particularly relevant for examining how cluster initiatives aimed at improving networks, access to global markets and the enhancement of incomes can help reduce poverty amongst clustered entrepreneurs and workers.

This paper draws on a combination of the above approaches. It places particular emphasis on linking the value chain and capability approaches discussed above, in order to elaborate a "value chain mapping to impact assessment" of poverty in industrial clusters. The combination of value chain mapping and capability approaches is aimed not at a static assessment of the impact of clusters on poverty, but at a dynamic take on policy that facilitates the improvement of cluster policy to reduce poverty and enhance well-being. In the next section, we review the relationship between clusters and poverty.

INDUSTRIAL CLUSTERS AND POVERTY: The key links

Despite the widely held view that clusters can play an important role in fostering incipient industrial development, especially in poor regions (Schmitz and Nadvi, 1999), little is known of the impact that clusters have on reducing poverty. This section addresses this gap by considering the ways in which clusters could potentially affect a poverty reduction agenda. The very presence of a cluster changes the context in which the poor live, by enhancing the ability of individual cluster actors, be they workers or producers, to potentially improve their well-being. Clusters allow local small producers to make more effective use of underutilized resources, such as small scale savings or family labour, generating incomes that they could not avail by operating in isolation. This is because the process of clustering engenders various benefits. This includes agglomeration gains to clustered firms, such as externalities in the markets for labour, inputs, know-how and information, economies of scale and scope as individual firms take on specialized tasks through a division of labour. In resource poor regions, or at early stages of industrial development, this can be especially significant, promoting specialization by way of "small steps" (Schmitz and Nadvi, 1999). Finally, clustering is a dynamic process, leading to "winners" and "losers" amongst firms and workers. Thus, in assessing the links between clusters and poverty we concentrate on three aspects of clusters. First, *cluster features*—the cluster's location, the types of firms within it, and the types of employment generated—and their relationship to poverty. Second, *cluster processes*—agglomeration gains, joint action, cluster institutions and social capital—and poverty. Third, *cluster dynamics*—cluster growth, upgrading, and differentiation—and poverty.

Cluster features and poverty

Clusters are far from homogenous. Here are four distinctions offered in the literature.

- Gulati (1997), in the context of Indian examples, distinguishes between "modern" urban and "artisanal" rural clusters. The former serve large metropolitan and export markets, while the latter cater to more local demands.
- Sandee (2002), drawing on evidence from Indonesia, describes a spectrum with "dormant" clusters at one end—manufacturing simple items for poor rural consumers and providing "distress" employment for those with limited income generating options, and "dynamic" clusters at the other end—where firms are closely networked and can enter wider, even global, markets.
- Schmitz and Nadvi (1999) distinguish between "incipient" clusters—those at an early stage of industrial development, usually located in poor areas, producing for local markets with simple technologies and labour skills, and "mature" clusters—relatively more advanced in terms of technology and skills, often producing for global markets and thus vulnerable to global competitive pressures.
- Altenburg and Meyer-Stamer (1999) distinguish between "survival" clusters, "advanced mass production" clusters and "clusters of transnational corporations". Their notion of "survival" clusters is similar to Schmitz and Nadvi's "incipient" clusters. Such clusters are in "poor areas, where open or disguised unemployment is high, either in small towns of rural areas or on the outskirts of big cities" (Altenburg and Meyer-Stamer 1999:1695).

> Mass production clusters are more advanced, where firms produce for local markets but increasingly face global competitive pressures. Finally, "clusters of transnational corporations" are technically advanced foreign firms that locate in particular areas to draw on regional agglomeration economies but with limited links to local firms and institutions.

We need to first consider which types of clusters are particularly significant in employment and income generation that could have a greater impact on the working poor. Clearly there can be a potential trade-off in terms of policy. While incipient, or survival, clusters are the obvious choice in terms of direct poverty impacts, more mature clusters can also have an impact on poverty —by generating employment and incomes for relatively low waged workers and their households and for the indirect effects on the wider economy. Moreover, incipient clusters may not survive in the face of growing market competition, whereas supporting mature clusters may result in more sustainable development for local communities. Keeping these distinctions in mind, the critical point, in terms of cluster features and their relationship with poverty are the location of clusters, the type of sector that a cluster is engaged in, the nature of firms within clusters, and the types of employment the cluster generates. All three affect the well-being of cluster-based workers and producers, and are directly relevant to poverty. We deal with these separately.

Location—Poverty incidence can vary sharply in the developing world. Historically, rural poverty has accounted for a significant component of total poverty. While this underlines the importance of farm incomes, off-farm employment can be critical to the survival of poor rural households. Rural clusters, especially in agro-processing and agro-service activities that rely heavily on casual, landless and family labour, can be potentially providers of critical income for the rural poor (Das, 2003; Saith, 2001). Rural to urban migration is another strategy taken by the rural poor to improve their livelihoods and capabilities. However, off-farm migration can often reduce the presence of key skills in the local rural economy, and make particular categories of the rural population (such as women, children and the elderly) more vulnerable. Rural to urban migration also fuels the fast-growing urban informal sector. Thus, it is evident in many countries that urban poverty is of growing, if not greater, significance than rural poverty. Those who fall within the urban informal economy often have levels of income and consumption that place them below the poverty line. Many "survivalist" clusters are found in informal settings, relying on cheap, casual, labour and limited local resources. The informal sector can also provide an environment for more dynamic clusters—many of the leading examples of mature export clusters from developing countries began in the informal sector. Thus, rural-based clusters that generate off-farm employment for the rural poor, as well as clusters located in peri-urban settings and in the urban informal economy can have a significant impact on poverty by generating employment for the very poor.

Sectors and firms—the types of industries and firms within clusters can also influence the impact on poverty. An underlying belief, and one borne out by evidence, is that clusters have a predominance of small and medium enterprises. Furthermore, SMEs tend to have a more labour intensive production profile. Thus, most SME clusters in the developing world are to be found in labour intensive activities—from the manufacture of shoes, garments, metal products, to wooden furniture, and food processing.

Employment—Finally, many of the labour intensive sectors, where evidence of clustering exists, often attract a substantial pool of unskilled workers. These can also include relatively

marginal workers, including women, migrants, child workers and those from economically poorer communities. The nature of skills can act as a proxy to identify the poorest. Generating unskilled labour is likely to have a stronger pro-poor effect than skilled labour. Although, a caveat to note is that increasing skilled labour (and incomes to skilled labour) may generate greater multiplier effects that have a wider poverty impact, through, for example, employment growth for unskilled labour. Part of an exercise in discerning the poverty impact of clusters would be to distinguish between clusters where unskilled labour predominates from clusters with a predominantly skilled labour profile.

Cluster processes and poverty

Clustering sets into motion a range of potential benefits that can directly affect the poor, both as waged workers, home workers, own-account workers as well as small entrepreneurs. This can be through externality gains, joint action, and local social capital.

External economies—Agglomeration benefits may not only raise efficiency, they may also make it possible for smaller firms to access markets through a division of labour. Economies of scale and scope can allow individual small firms to survive by specializing in specific tasks within the production process and by accessing specialist skills and services and inputs from within the cluster. Similarly, external economies that arise from agglomeration can result in a significant lowering of costs in accessing inputs, labour and information. Again, this can help small firms to survive and grow in ways that would be infeasible if they operated in isolation. Knowledge spill-overs found in clusters may also make it feasible for small firms to acquire new know-how, new products and new production techniques that could not be obtained through markets. Clustering can thus enhance the individual capacities of small firms to access markets, and acquire skills, knowledge, credit and information.

Joint action—Clustering can also promote collective capacity. In addition to the direct economic benefits that passively accrue to small firms by virtue of their location within the cluster, there are significant gains from active local collaboration that clustering can set into motion. Local cooperation, both between individual firms and through cluster institutions can strengthen the ability of clustered actors to compete in markets, by sharing costs and by engaging in joint tasks such shared marketing and distribution. Moreover, such forms of joint action can help clustered firms confront external threats and challenges and face vulnerabilities. These external challenges are pronounced as local clusters engage in global markets. Globalization, namely the increasingly rapid flows of capital, goods, peoples, and ideas across borders, can help bring local actors into global markets and enhance their income earning opportunities. Globalization can also potentially increase the vulnerability of local actors to sudden changes in global demand, in trading rules and in financial stability. Thus, with globalization there is also greater instability and vulnerability. Clusters can help SMEs reduce their exposure to exogenous shocks and risks. Local institutions such as business associations and collective service centres can help clustered firms acquire the skills, the technical abilities to reduce their vulnerability to the exigencies of globalization, thereby enhancing the well-being of workers and producers.

Social capital—Local initiatives and local collaboration are themselves often strengthened by local social capital. Clusters tend to have a strong presence of social capital, which can take the form of shared norms and/or common identities. This can, potentially, help reduce

vulnerability, help flows of knowledge within the cluster, provide the basis to strengthen local institutions, and help firms upgrade. We need to consider how social capital works to do this, and in particular how it may mitigate against poverty. But there is a caveat. Social capital can also serve to raise local competition as much as it helps local cooperation. Divisions within communities can reduce local cooperation and serve to worsen poverty impacts. Also we need to note the differentiated ways in which social capital works for different types of firms (large versus small) and workers (men versus women, or high versus low castes). Finally, it is important to recall that social capital is not static. Its forms, and how it works, can change over time. In particular, it is affected by economic changes (and growth) within the cluster.

Clusters can set into motion processes that improve the ability of small firms to improve market access through externality gains and through joint action. This can raise incomes for those who work in clusters, raise their assets and capabilities and have a significant impact on lowering levels of poverty and social deprivation. Joint action, often cemented through social capital, can improve local networks and support mechanisms that help reduce future risks and vulnerability to shocks.

Clustering dynamics and poverty

Clusters are dynamic. They evolve as a consequence of local and external linkages. A key process of change within clusters comes about through local upgrading. This results in enhanced human capital and improved technological capacities for firms and enhanced capabilities for workers and small producers. In what ways does such upgrading improve the abilities of clustered actors to address poverty concerns? This leads to a more dynamic framework for understanding the growth trajectories of clusters and poverty reduction. There has been substantial recent discussion on upgrading in clusters (see UNIDO, 2002; Humphrey and Schmitz, 2003)—which raises the competitiveness of firms, improves their ability to appropriate a larger share of value added, and advances their position within global value chains through distinct forms of upgrading—product, process and function.

Why is cluster upgrading significant for poverty? Raising human capital improves productivity and leads to rising incomes and wages as well as sustained employment growth. Moreover, it is only through a systematic pattern of upgrading, often aided through national innovation and learning systems, that clusters are able to compete in global markets on the basis of the high road to growth. This requires a stronger explanation of why the high road to growth (as opposed to increasing competition on wage costs) might have a more positive impact on poverty reduction in the medium to long-term.

But upgrading not only relies on local and external linkages, it also has consequences for such linkages. That is to say, the process of upgrading is often determined by the nature of governance of ties within the cluster, as well as ties between cluster actors and external players within the value chains in which clusters are inserted. Global lead firms can exercise significant power in determining the actions of local firms, and thus the autonomy of clustered firms to engage in tasks that enhance their technical and resource capacities. Moreover, external ties can over time erode local linkages and weaken cluster governance.

This implies that clusters have to be seen in the context of dynamic trajectories—where certain types of producers and workers gain and others lose. For example, as firms upgrade

does the demand for new skills affect all workers uniformly, or do some categories of workers (say women) become marginalized by not being provided the requisite training and skills? Thus, central to an understanding of clusters and poverty is the issue of difference—namely the reduction of poverty for whom—which types of firms and which types of workers? Moreover, within a dynamic process of change, how can negative effects be minimized and positive effects maximised through better policy initiatives?

This section charted the main conceptual links between clusters and poverty, distinguishing between cluster features, cluster processes and cluster dynamics. The next section uses the same three levels to assess the empirical evidence on clusters and poverty reduction.

INDUSTRIAL CLUSTERS AND POVERTY: The empirical evidence

This section revisits evidence from a variety of cluster studies using a poverty perspective. First, we consider cluster features and poverty, assessing different locations, sectors, firms and employment patterns within clusters and their implications for a poverty agenda. Second, we review how cluster processes, from agglomeration gains and joint action, enhance the position of poorer producers and workers. Third, we address cluster dynamics, assessing the poverty consequences of upgrading strategies and differentiated gains, at the level of firms and of workers, which arise from particular growth trajectories. We conclude with a cluster to poverty typology that provides a diagnostic tool to identify, ex-ante, clusters where policy initiatives may have greater poverty reducing impacts. This supplies the link to section 5 where we develop the methodology for conducting poverty and social impact assessments of cluster development initiatives.

Cluster features and poverty

There are numerous examples of clusters at early stages of industrialization, engaged in labour intensive sectors and operating within, or on the boundaries of the urban informal economy. These are found in Latin America, Africa and Asia.[2] Such clusters generate employment and incomes for the working poor, and in many cases for the very poor. Dawson's (1992) study of the Kumasi, Ghana auto-parts and vehicle repair clusters, for example, reported over 5,000 workshops employing some 40,000 persons engaged in metalworking, the manufacture of auto-parts and in vehicle repair. The cluster had grown, but remained on the borderline of the informal economy with extensive "use of cheap family and apprentice labour" (Dawson, 1992:37).[3] Employment-generating vehicle repair and metalworking clusters are also cited by McCormick (1999) from various Kenyan locations, where micro-enterprises (employing on average two persons), many of which are informal (*jua kali*) units, use simple technologies to produce a range of goods for local markets. Knorringa (1999:1590) found that the shoe cluster of Agra, India, employed 60,000 workers in some "5,000, mostly informal small scale units". In the Gamarra garment cluster in Lima, Peru, there were over 6,000 small enterprises as well as large numbers of informal micro-enterprises and street traders, with growth fuelled by the entry of rural migrants to the cluster (Visser, 1999).

In addition to labour intensive urban clusters dominated by small, often informal, enterprises, there is also evidence of rural clusters providing employment for the rural poor. Indonesian rural "cottage industry" clusters produce a range of products, from woven bamboo, food products to furniture and garments. Some of these rural clusters also export (for example, rattan furniture—see Smyth (1992), and Sandee (2002)), but most "are located in densely populated, poverty stricken regions and serve local demand" (Weijland, 1999:1518). Such

[2]Altenburg and Meyer-Stamer (1999) cite cases of shoe, garment, furniture, and metal working clusters in Honduras, Mexico, Costa Rica and Peru. McCormick (1999) describes incipient clusters producing garments, furniture, vehicle repair and agricultural products in Kenya and Ghana. Gulati (1997) mentions the presence of 2,000 rural artisanal clusters in India. Weijland (1999) reports some 10,000 rural cottage industry clusters in Indonesia, and Nadvi and Schmitz (1994) describe a range of urban "informal" clusters in parts of Pakistan and India.

[3]Brautigam (1997) describes a similar auto-part cluster, which grew from trading into manufacture, in Nnewi, Nigeria.

rural clusters, with a high preponderance of home-based women workers, often "function as the only means to earn a living for young mothers, widows, and elderly or handicapped persons" (Weijland, 1999:1517). Other examples of rural clusters are cited by Sandee (1995, 2002), producing roof tiles in Java, and by Mitullah (1999) on fishing and fish processing for local and export markets from Lake Victoria in Kenya. The Lake Victoria cluster generates work for fishing communities who use limited tools and have few amenities (McCormick, 1998).

These cases suggest that clusters can be important in poor rural and urban areas. Such clusters are engaged in labour-intensive sectors, often where barriers to entry for new firms and workers are low. Given the presence of clusters in rural and poor (often informal) urban environments, does clustering actually result in significant employment and income gains that could positively impact on poverty? This is difficult to address given that few cluster studies provide employment and income data, and few still address the counterfactual. Again, we tease out some of the findings.

Take employment growth. Sandee (2002) provides evidence from an Indonesian furniture cluster in rural Java, that fed both domestic and export markets, where employment levels rose from around 8,000 in 1989 to nearly 44,000 in 1998. Evidence on employment growth is, however, much more prominent from the relatively mature clusters. Thus, Schmitz (1998) describing the footwear export cluster of Sinos Valley, Brazil, reports employment rising from 153,000 in 1991 to just over 170,000 in 1996. Further dramatic evidence comes from Bair and Gereffi (2001) who report employment levels increasing by 300 per cent in the 1990s in the blue jeans cluster of Torreon, Mexico. This "mature" cluster has rapidly emerged as a "full package" garment exporter to the United States. Employment levels in Torreon went from 12,000 in 1993 to 75,000 in 2000. Cawthorne's study of the Tiruppur cotton knitwear cluster in southern India, another "mature" cluster, indicated employment doubling during the 1980s from 20,000 to 40,000 (Cawthorne, 1995). More recent evidence on Tiruppur suggests that garment employment in the Tiruppur cluster is now well over 200,000 (Singh, 2003). Much of this has come through migration, initially from nearby villages and more recently from poorer rural districts further afield (de Neve, 2003).

Data on income growth for workers and small entrepreneurs is extremely sparse. Bair and Gereffi's study of the Torreon jeans cluster shows minimum wages rising from 182 pesos a week in 1998 to around 650 pesos a week in 2000. But much of this reflects the peso's devaluation. Real wages were only just returning to the pre-1994 devaluation levels. Moreover, while women accounted for almost 50 per cent Torreon's workforce, men tended to take on the more skilled and higher paid functions. Similarly, in Tirippur, Singh (2003) reports daily wages for male workers at 85 rupees, but those of female workers were much lower, ranging from 40-50 rupees a day, and below the Tamil Nadu legal minimum wage.

But the issue is not just of wage levels and wage growth. Even if wage levels are not rising clearly in clusters, what is more critical is whether they are falling behind wage levels in non-clustered alternative employment that such wage workers could take on. Thus, the key point is relative wages. Both Schmitz (1995, 1999) and Nadvi (1999a) argue that while wage levels were low within the respective clusters they studied (Sinos Valley shoe cluster and the Sialkot surgical instrument cluster), they were better than regional average wage levels. In Jepara, Indonesia, wage levels for skilled furniture craftsmen were, according to Sandee (2002:197) "significantly higher than average provincial wage levels". Similarly, Visser (1999), in his assessment of the counterfactual for the Gamarra garment cluster in Peru, also shows that

wage levels in the cluster were above those in "similar" non-clustered firms. He reports that average monthly pay per worker was "30 per cent higher in the cluster than elsewhere in the city", although he also noted that workers in the cluster tended to work longer hours (Visser, 1999:1559). Moreover, these differences in favour of clustered enterprises were most significant for the sub-group of very small firms. That is, for the very small firms, clustering advantages were especially critical.

Visser's findings from Peru are also backed up by more recent analysis undertaken by us on Italian data for employment and income growth in industrial district and non-district settings. This allows us to test the counterfactual argument more effectively. Namely does clustering lead to more rapidly increasing employment and better and faster rising wages? We turn to Italy to address the question for two simple reasons. First, the Italian experience has driven much of the research in the developing world and provided the classic reference point for developing country industrial clusters (Rabellotti, 1997). Second, Italy is one of the few countries where wage and employment data is available at the level of clusters. Thus, if there is evidence that clustering actually raises employment and incomes, it is likely to emerge from the classic Italian cases.

The Italian evidence is compelling (see annex I for detailed table). What it shows is that although manufacturing employment in the Italian clusters as a whole declined, by 2.2 per cent, during the 1990s, manufacturing employment levels fell more sharply in non-cluster settings (of around 10 per cent). These patterns were observed in all leading sectors with employment falling less (or in some cases rising more) rapidly in clustered districts. Furthermore, salaries, for both white and blue collar workers, were higher in cluster settings than outside clusters. Salary gains, again for both white and blue collar workers, engaged in similar activities were greater during the latter part of the 1990s in clusters. The Italian data supports the view that clusters can generate improved incomes and employment and point to a "high road" growth trajectory (Pyke and Sengenberger, 1996).

These results have important consequences for poverty considerations. We know that there is a significant presence of labour intensive small and micro-enterprise clusters in urban and rural settings that generate employment for the poor. We can also see that in many clusters, especially more mature clusters, employment growth is substantial. Finally, the limited evidence on counterfactuals suggests real employment and income gains from clustering.

Cluster processes and poverty

How does clustering help small producers and poor workers improve their economic positions, reduce their vulnerability to exogenous shocks and enhance their capabilities? We focus on the processes associated with clustering, namely external economy gains arising from agglomeration, local joint action especially through local institutions, and the role of social capital in fostering local cooperation and contributing to social protection.

External economies—A key element of the benefits of clustering are externality gains. As Weijland states, clusters generate critical "search and reach economies". This attracts traders and lowers costs. Among many of the rural Indonesian cottage industry clusters, Weijland (1999: 1519) found that clustering "reduced the transaction costs of purchasing inputs and

marketing outputs ... [and it] ... eased information flows and facilitated order-sharing, labour sharing and subcontracting". But, as Weijland further noted, while rural clusters performed better (in terms of higher productivity for example) than dispersed rural enterprises, there was wide variation by sectors. In certain sectors (such as textiles, garments, roof tiles and wood products) there were stronger tendencies to cluster and more significant agglomeration gains for clustered producers. These differences across sectors were largely determined by technological factors—the extent to which the production process could be subdivided thus promoting specialization and subcontracting, as well as by markets. From the Indonesian experience, Weijland found that in rural garment clusters, where process specialization was substantial, externality gains from clustering were greatest.

Similarly, McCormick, (1999) found reduction in "search and reach costs" to be a critical advantage that clustering generated for small, often informal, firms in African clusters. As Weijland had observed in Indonesia, McCormick also argued that accessing small traders was critical in providing small enterprises with the ability to reach markets. "Location in clusters gave firms access to such traders and, through them, to customers" (McCormick 1999:1539). Scale economies were also key, especially in the (informal) garment manufacturing cluster in Nairobi where there was some division of labour and the presence of suppliers of fabrics, buttons and other inputs. In other cases, such as the Kumasi auto-parts cluster, in addition to better market access, labour market pooling and extensive subcontracting, clustered producers benefited from local technological spillovers and knowledge flows. Similarly, Visser (1999) found that passive externality gains were important in the Gamarra garment cluster. They lowered transaction costs to clustered small firms by their ability to easily access inputs, through the subcontracting so specific and specialized finishing tasks which generated scale and scope economies and again through knowledge spill-overs within the cluster. The easy and cheap availability of information promoted innovation and product development, and the costs savings to firms as a consequence of clustering were, according to Visser (1999:1562), "largely responsible for the ... performance gap between clustered and dispersed producers". Moreover, the performance gap was most acute amongst smaller firms for whom clustering gains were especially critical.

In more mature clusters, the presence of specialist labour and inputs lower search costs for producers, subcontracting can be extensive generating critical scale economies, while the rapid flows of information reduce transaction costs, minimize uncertainties and aid technological development. Nadvi (1999a) details these gains in the Sialkot surgical instruments cluster, where the labour force although skilled is largely illiterate and poor. Schmitz (1995), Knorringa (1996), and Rabellotti (1997) provide similar evidence from the shoe clusters of Sinos Valley, Agra and Guadalajara respectively. In each of these cases, the cluster has a predominance of small, often (as in Agra) with a large number of informal, firms employing relatively poor labour. In each cluster external economy gains are critical for small firms to compete in local and global markets, to grow and to generate further employment.

Joint action—Agglomeration economies are only one aspect of the benefits that potentially emerge from clustering. Clusters create a potential for local joint action, between individual enterprises and at a cluster-wide level through local institutions. Local collaboration is not an obvious outcome of clustering. It requires active intent on the part of local actors. Where it does develop, it can lead to significant gains, enhancing the collective capabilities of local entrepreneurs, as well as workers. To what extent does joint action address poverty? There are two aspects to this. First, is there evidence that joint action through local institutions

can raise the capability of small enterprises, even within incipient clusters, to engage markets and overcome constraints? Second, is there evidence that joint action limits the vulnerability of clustered firms and workers in the face of external threats?

In most of the incipient clusters, signs of joint action are limited. In her review of incipient African clusters McCormick (1999) found few signs of local cooperation, either between firms or at the level of the cluster. Collective associations, such as *jua kali* (informal sector) associations in Kenya provided a channel between local enterprises and the state, but were not a basis for helping local clusters develop. Similarly, despite a local cooperative society with wide membership, the Lake Victoria fishing cluster was unable to address common problems such as over-fishing or improving standards (McCormick, 1999). In many other examples of incipient clusters, from the Gamarra garment cluster in Lima to the vehicle repair cluster in Kumasi, we find at best limited evidence of active local cooperation.

There are, however, a few exceptions. Sandee (1995, 2002) cites the case of a rural roof tiles sector in Indonesia where producers came together to collectively acquire new technologies, and thereby access scale economies through the collective investment, raise productivity and improve quality. Moreover, Sandee's recent findings suggest that many of the rural and peri-urban clusters in Indonesia, manufacturing tiles, brassware and furniture, were able to face the East Asian financial crisis, and the regional economic downturn that ensued. This was especially so for the Jepara furniture cluster, where strong inter-firm cooperation, good links with external traders and the devaluation of the Indonesian Rupiah resulted in export and employment growth in the post-crisis period. Promoting joint action can therefore be critical even in rural clusters. As Weijland (1999) reports from rural Indonesia, attempts by the state to foster cluster-based business groups to act as cooperatives, take on joint tasks such as training and marketing and to become the focal points for policy interventions did lead to significant gains. In some rural clusters, such as in textiles, collective initiatives brought about higher rates of employment and output growth (Weijland, 1999:1526).

With the exception of some of the Indonesian findings, the general observations from studies of incipient clusters suggest that beyond a division of labour within the cluster (more pronounced in sectors like garments where such divisibility is feasible), and some backward and forward vertical linkages, horizontal collaboration between enterprises and at the cluster level is rare (Schmitz and Nadvi, 1999; Altenburg and Meyer-Stamer, 1999). Low barriers to entry, limited skill bases, extensive local competition, low trust within clusters despite the often strong presence of common social identities, can result in what Altenburg and Meyer-Stamer (1999) refer to as "poor contract enforcement". This limits the potential gains that clustering could bring about, in terms of growth and pro-poor impacts.

The evidence on joint action in mature clusters is much stronger. More importantly, in many cases of relatively mature clusters, many of which were until not so long ago incipient clusters, such forms of joint action is often pronounced in the face of external threats. Clusters that compete in global markets are particularly vulnerable to the exigencies of global competition. Liberalization, new competition, demands from global buyers to meet global standards (on environment, labour and quality issues for example) and new technologies can force cooperation as clusters seek collective paths to enhancing collective capabilities.

Thus, in Mexico, Rabellotti (1999) found that trade liberalization had a significant effect on the footwear cluster of Guadalajara, a cluster that employed 25,000 persons in over 1,000,

predominantly small, enterprises. Reductions in import tariffs led to a sharp rise in footwear imports, especially from China, severely threatening small domestic producers. Thus, in Guadalajara alone—which accounts for some 27 per cent of Mexican shoe production, memberships of the local footwear trade association fell from 500 to 315 as many firms closed down (Rabellotti, 1999:1574). In response to such pressures, local cooperation within the cluster increased. Firms began to build networks with other local producers to share information. Some firms came together to jointly develop products and source components Cluster-wide institutional initiatives, particularly through the trade association, were especially significant, promoting technological development and technical assistance, training, information gathering on external buyers and the development of promotional trade fairs. Rabellotti found such cooperation had a positive and statistically significant impact on firm performance.

Knorringa (1999), in his study of the Agra shoe clusters, observed increased joint action in the face of new competitive challenges as producers, in both export and the premium domestic markets were faced with rising demands for improved quality and lower price. Joint action through the local trade association rose, with positive consequences for performance, although Knorringa noted that such cooperation was skewed towards larger producers. Schmitz's study of the Brazilian shoe cluster of the Sinos Valley, also pointed to increased local cooperation as small firms faced up to global challenges, especially from low priced Chinese competitors. Joint action was particularly strong in backward ties with local suppliers, of leather and other key components, as well as subcontractors. Multilateral joint action initiatives did take place but, as Schmitz noted, with the cluster's expansion there was a growing differentiation in the competing interests of shoe producers (between large firms with strong ties with external buyers and smaller enterprises), and between the shoe sector and the components sectors within the cluster.

Stronger evidence on cluster-wide institutional joint action was observed by Nadvi (1999), in the context of the Sialkot surgical instrument cluster in Pakistan, and by Kennedy (1999) for the tanning cluster of the Palar Valley in Tamil Nadu, India. Compliance with global quality assurance standards, a necessary requirement for exports to leading global markets by the Sialkot cluster, came about through the catalytic role of the local trade association in channelling new know-how on quality management practices to the cluster. Through this process, Nadvi found that the vast majority of SMEs in the cluster could comply with international standards over a relatively short period of time. Had the association not taken on this function, most small firms would have closed given that the United States and the European Union (EU) accounted for over 90 per cent of the cluster's sales. Similarly, in the Palar Valley, pressures to meet environmental standards in leather processing called for the setting up of common effluent treatment plants. As Kennedy (1999) notes, local tanneries had to cooperate for survival, forming common plants through collaborative arrangements, monitoring problems of free riding in the management of treatment plants. As a result of this local joint action, a number of tanneries have expanded while the common treatment plants have emerged as key local institutions for collective organization. A further example of how clusters can promote collective responses to external threats comes from the response of Sialkot's export-oriented sports goods cluster regarding the presence of child labour in manufacturing units within the cluster (Nadvi, 2003). Faced with the loss of key export markets, local firms through collective institutions (such as the local Chamber of Commerce) entered into an agreement with international bodies, including the International Labour Organization (ILO) and United Nations Children's Fund (UNICEF), as well as leading

global buyers. This resulted in an ILO monitoring programme of the cluster and a social development strategy, based on education and income generation, for child workers and their households. Thus, local joint action resulted in direct gains for the cluster, employment and cluster exports rose, while immediate poverty concerns for many of the more vulnerable members of the cluster's labour force began to be addressed (Nadvi, 2003).

Joint action is neither an obvious outcome of clusters, nor is it easy to achieve. The evidence that emerges from cluster studies suggests that joint action is less common in incipient clusters than it is in more mature clusters. Even in mature clusters, joint action is far from uniform. The fast growing jeans cluster of Torreon, where exports to the United States has expanded with North American Free Trade Agreement (NAFTA), has seen local firms building closer ties with their external buyers than with other local producers (Bair and Gereffi, 2001). Cluster institutions are weak. In many other cases, we see similar patterns where, in the face of global pressures, ties with external actors begin to supersede local linkages (Brazil's Sinos Valley is another example, see Schmitz, 1999). Nevertheless, in a number of cases, local cooperation can assist local small enterprises access markets, overcome constraints and confront vulnerabilities that they face in local and global markets. Often where cooperation does occur, it is strengthened by local social capital, common ties of community and identity that can foster cooperation and generate trust.

Social capital—Social capital is often cited as a key feature of small firm clusters. It is considered an essential component of the success of the Italian industrial districts (Putnam, 1993). Social capital can assist local trust ties. It can also contribute to the provisioning of local social protection, providing an informal basis to cover risk and insurance as well as support for weaker members of the local community. There is a danger, however, that social capital is viewed in either an idealized fashion, or that it is seen as acting uniformly. Fostering trust, even with strong community ties can be difficult especially when enterprises are in direct competition with each other, where barriers to entry are low and where conditions of poverty are high. Moreover, differentiation within communities can mean that local social ties effectively marginalize particular groups, on the basis of caste, ethnicity, religion, migration, and gender. What evidence is there on the links between social capital, one of the process outcomes of clustering, and poverty?

The presence of strong social networks is a feature in many incipient clusters. Weijland (1999:1518) argues that Indonesia's rural clusters have strong social networks that generate "a substantial stock of social capital". This serves to lower transaction costs through "traditions that seemed to safeguard social control and stability" and that promote trust within communities. Sandee (2002) mentions the importance of family networks in rural Indonesian clusters. Actual evidence of such social capital in practice is, however, limited. Furthermore, as Weijland notes, social networks usually uphold dominant local norms. Thus, in much of rural Indonesia, social networks are encapsulated within local patron-client relationship based on "socio-political hierarchy, land ownership and traditional family bonds" that allows key players within rural clusters, such as wealthy landowners and village elders (always men), to exercise a degree of power over other members of the community, and their families. Overt symbols of social networking are less clearly seen in the African clusters that McCormick discusses, or for that matter in many of the incipient clusters in Latin America. Although the use of family labour is significant, such as in Gamarra, suggesting potentially strong family bonds, and migration into clusters also pointing to potential community ties, there are few signs that social networks emerge that foster ties between small enterprises. In fact,

Altenburg and Meyer-Stamer (1999:1697) argue that, for many of the survivalist clusters, it is "low trust and poor contract enforcement mechanisms [that] compromise the potential to reap benefits of clustering".

The evidence on social networks is stronger in parts of South Asia. Kennedy (1999:1676-7) argues that a key element in promoting local cooperation amongst tanneries in the Palar Valley is their strong Muslim community identity. She mentions a strong "Muslim ethic" and the presence of important religious and charitable institutions. This strong sense of community identity, enhanced by Muslims being a minority community within the wider region, provides a basis for local self-regulation and "social control" that "ensure compliance to rules and norms". This religious identity has been central, states Kennedy, to promoting local cooperation amongst tanneries in forming and managing collective treatment plants. Strong religious hierarchies and norms provide the basis for an effective regulatory framework. But this only extends to tannery owners. Most tannery workers are low caste Hindus, and here religious identities serve to strengthen the divide between labour and capital.

In the Agra footwear cluster, Knorringa also saw strong community ties, based on caste identities. As in Palar, there is strong differentiation by caste (and religious) groups within the cluster. Footwear workers tend to be poorer, low caste Jatavs (Hindus), while traders are usually high caste Hindus, Sikhs and Muslims. This differentiation, cemented by social and religious differences, further fuels obvious tensions between enterprise owners and workers. In the Tiruppur knitwear garment cluster, Chari (2000) argues that the agricultural caste of Goundars became dominant in the industry largely through kin and caste networks as poor rural labourers, including landless peasants, moved to Tiruppur in search of jobs. Singh (2003), however, states that as the cluster grew, the dominance of the Gounder community declined. New migrants from further afield, and the entrance of Punjabi manufacturers and traders who shifted to Tiruppur during the time of political unrest in Punjab, resulted in other, competing, forms of local social identities. A similar story, of changing social identities is cited by Nadvi (1999b) in the context of the Sialkot surgical instrument cluster, where baradari (quasi caste) ties changed over time. Nevertheless, a strong sense of local social identity, based on location and family ties, prevails.

From the review of cluster processes we turn now to the evidence on cluster dynamics and poverty. That is, as clusters develop what consequences emerge for poverty concerns. In particular, given that clusters are themselves heterogeneous, who gains and who loses, at the level of producers and workers, as clusters evolve?

Cluster dynamics and poverty

A number of cluster studies focus on cluster growth and upgrading and, in particular, the role of internal and external linkages in bringing this about. This has resulted in an emphasis on the ways in which local clusters are inserted into global value chains. Ties within the global chain can often determine the autonomy of local actors in terms of their power and ability to adopt particular growth trajectories. That is not to say that local networks and local linkages do not matter. Local institutions, local technological capacity, and local government policies can play a significant function. Nevertheless, cluster studies have begun to pay greater attention to the interface between what is termed local and global governance (Humphrey and Schmitz, 2003; Nadvi and Halder, 2002; Bathelt et. al, 2002). Furthermore, discerning

growth trajectories also point to the differentiated gains within clusters. As clusters develop, particular categories of local entrepreneurs and local workers gain while others lose out. Here we assess the evidence of upgrading from various cluster studies, the differentiated outcomes that emanate from it for producers and workers, and its implications for poverty.

As with the evidence on joint action, there is a clear distinction in patterns of upgrading between incipient and mature clusters. It is in the more mature clusters that we observe substantial development as clustered firms upgrade their products, processes and function and in some cases enhance their ability to compete in global markets. Often this results in an increasing emphasis by clustered firms on ties with external buyers. The Torreon blue jeans cluster in Mexico is one example. As the cluster expanded, a number of jeans manufacturers moved from simple, assembly only, functions to "full package" production. This involved undertaking new tasks such as fabric sourcing, trims and labels, fabric cutting, finishing and distribution. In the process, the cluster's producers have upgraded significantly, enhancing skills and capabilities, obtaining a three fold increase in unit prices for garment assembly between 1993 and 2000, and rapidly increasing employment in the cluster (Bair and Gereffi, 2001). Vertical ties with United States lead firms have become stronger for local producers. But upgrading at the cluster level did not imply upgrading by all firms. Large firms were at the forefront of this process. They had both the capital to undertake full package production and the links with United States buyers to access the know-how, and the buyer pressures, to upgrade. As a result, there is growing concentration within the cluster. Of the 360 garment producers within Torreon, the 10 largest firms account for over 40 per cent of total cluster production. Many of these large firms are, as Bair and Gereffi (2001) note, closely related through family ties. More significantly, the larger firms increasingly rely on large numbers of smaller subcontractors, although ties with subcontractors are organized through hierarchical vertical production networks. The pressures that large firms face from their United States buyers, to lower prices, raise quality and speed delivery, are transferred to local subcontractors, squeezing the latter's profits and wages. According to Bair and Gereffi (2001:1896), "the development of full package networks in Torreon is primarily benefiting a wealthy domestic elite whose control over the local industry is being further strengthened by its exclusive access to the United States customers".

This pattern of differentiation between large and small firms as clusters develop is observed in a number of other cases, from the Sinos Valley shoe cluster, the Sialkot surgical instruments cluster, the Guadalajara shoe cluster to even the Gamarra garment cluster. Firm size can be a critical dimension to success, and this can have poverty consequences. Visser's study shows clustered firms outperform Lima's dispersed garment producers. However, clustered firms tend to be larger than dispersed producers. Thus, most dispersed firms were smaller, poorer, micro-enterprises. They were more reliant on unpaid family labour, were often more recent migrants to the city, and aspired to locate in the Gamarra cluster in order to access the cluster's advantages. Hence, the Gamarra cluster's producers were an "elite" amongst the poor, with the high rents in Gamarra acting as a barrier to entry to the cluster for poorer entrepreneurs and newer migrants.

In many cases, the relative expansion of large firms within clusters often takes place alongside more hierarchical ties that such large firms have with local subcontractors, or second and third-tier suppliers. Subcontractors are more vulnerable to demand shifts, and less able to directly access markets. This, for example, is seen in the Tiruppur cluster where subcontractors have no direct market access, work in poorer conditions and have limited

skills and capital. Here, job workers, who are effectively micro-enterprises or own account worker that specialize in particular tasks, are "because of the seasonal nature of demand for job workers, [the] most vulnerable group [within the cluster] and experience huge income variations" (Singh, 2003:11).

Thus, cluster growth can lead to sharply differentiated gains at the firm level, with smaller producers often being squeezed or having less autonomy in their ties with larger producers within the cluster. Furthermore, growth trajectories within clusters, especially for those that produce for global markets, often involve a shift in the weights attached to local and external linkages. This was seen in Torreon. It was also observed in Sialkot. In Sinos Valley, Schmitz (1999) reports a similar pattern that as the cluster expands and upgrades, ties with external buyers become increasingly more important, and that such external linkages are unevenly distributed within the cluster. Moreover, increasingly closer ties with external buyers, especially among the cluster's leading large producers, effectively undermined efforts at cluster-wide joint action. Growing dependency on external buyers through global value chain ties also implies, as Schmitz notes, that as firms seek to further upgrade they may run into conflicts with buyers over competing core competencies. In a similar context, Tewari (1999) noted from the Ludhiana knitwear cluster that, for some producers, being able to turn down high volume but low priced orders from some leading global buyers in preference for orders for smaller volumes of higher quality from smaller international buyers was a better strategy to learn and systematically upgrade. Both Knorringa and Tewari, from their respective studies of the Agra shoe and Ludhiana knitwear clusters, argue that producing for demanding domestic buyers can be valuable to the growth and learning trajectories of clustered enterprises.

Evidence of upgrading within incipient clusters is less apparent, in part because such clusters appear to advance more slowly, and because in many cases such clusters are constrained from taking discontinuous leaps in their growth trajectories. Nevertheless, in both types of clusters, we observe that growth leads to uneven gains. Particular groups of firms and of workers can lose out with substantial poverty consequences.

While the cluster literature has paid attention to the issue of differentiated gains at the firm level, it has been far less informative on the effects that cluster dynamics can have on labour. The nature of employment and the labour contract can be critical to poverty concerns. Many clusters generate employment for the poor in labour intensive sectors where skill requirements are low. This is especially so in clusters in the urban informal sector or located within the rural economy. Often clustered firms have a high preponderance of family labour, of women workers, of migrants and of child workers. As Weijland (1999: 1517) noted, Indonesia's rural clusters "offered a cheap, flexible and non-regulated labour force . . . [and] women constituted the most flexible work force in poverty-stricken areas". The Sialkot sports goods cluster, where many subcontractors and second tier suppliers operated in informal conditions in local villages, provided jobs, incomes and skills to large numbers of poor women and children (Nadvi, 2003). This view that clusters can be important generators of income for marginal groups within the labour force is also observed in formal urban industrial environments. Thus, Torreon's jeans export cluster grew through a heavy reliance on young, relatively unskilled, low waged and highly flexible women workers (Bair and Gereffi, 2001).

To what extent do cluster dynamics have differentiated impacts on different categories of labour? Take the case of Torreon, a cluster where upgrading has been substantial, generating a demand for new jobs and new skills. Bair and Gereffi (2001) report that women accounted for a substantial component of the labour force, especially in the labour intensive, but

relatively lower paid, assembly and sewing tasks. However, as firms acquired new functions, such as the cutting of fabrics and the laundering of finished garments, the new, more skilled and better paid jobs were allocated predominantly, if not uniformly, to men. There was, they state, "a reluctance of companies to invest in enhancing the skills of female employees" as women were seen as transient within the labour force, prone to leaving work as they married and raised families.

In Tiruppur, we see further evidence that cluster dynamics not only imply that women, who constitute some 65 per cent of the cluster's labour force, are squeezed into lower paid tasks of sewing and packing, but that the nature of the labour contract also changes. Tirippur has had a history of labour unrest and of union activism. Yet, Tirippur's development in recent years is marked by a growth of contract labour, an increasing emphasis on piece-rated payments, a decline in trade unionism (Singh (2003) reports that only 10 per cent of the labour force is represented in trade unions) and the erosion of collective bargaining rights.

In the Agra footwear cluster, Knorringa (1999) also found that despite cluster growth, employment as a whole shrank and particular segments of the cluster's labour force were especially squeezed. Thus, while employment in the export and premium domestic market segments of the Agra cluster rose, in the more traditional parts of the local industry it fell sharply. "Thousands of home-based women workers lost piece rate work on upper making" (Knorringa, 1999:1594), while poorer *Jatav* artisans, engaged in direct sales, were also severely affected. The arrival of newer rural migrants, the closure of many firms with the subsequent expansion of the artisanal labour force, and the limited employment options available to low-caste Jatavs (whose work with leather was seen as "polluting" by higher caste Hindus) led to growing evidence of poverty within Agra's shoe-making *Jatav* community.

Not all the evidence on labour points to growing differentiation. Tewari (1999) reports that one of the upgrading strategies adopted by Ludhiana's knitwear cluster was to train workers in multiskilling tasks. This strategy emerged as a response to Punjab's social unrest during the 1980s when labour absenteeism rose due to political violence. Faced with the need to maintain productivity and meet delivery schedules, a number of firms invested in training their labour force to take on more skilled and diverse functions. In this case, according to Tewari, clustering generated important advantages to local firms through the skill upgrading of local workers. It is however less clear what returns accrued to labour.

Towards a typology for cluster to poverty mapping

We have argued that clusters can play a significant role in enhancing the well-being of poor workers and small producers. The very presence of clusters changes the context in which such workers and producers and operate, raising the prospects of enhanced capabilities—both individually and collectively. Our poverty focused review provides some indicators of this. It is clear that there are particular types of clusters that are especially relevant to a poverty agenda. These include rural and urban informal clusters which most directly generate employment for the poor. There is substantial evidence of the widespread presence of such clusters in the developing world, and of their dynamics of growth. Many of the more advanced, or mature, clusters evolved out of such incipient clusters. In incipient clusters, by investing in small riskable steps in coordination with others in the cluster, small producers and workers can not only survive, they can grow enhancing their capabilities and functioning. We see that this is often accelerated by the gains that clustering generates. Local agglomeration economies are

central to growth, as well as to the capabilities and functioning, of those engaged in incipient and mature clusters from rural Indonesia to the urban informal sector of Lima, to the export clusters of Mexico and Brazil and India. Joint action is also important, especially in the context of assisting local producers and workers to confront external shocks. Cooperation through local institutions reduced the vulnerabilities of clustered producers in Sialkot, Pakistan and in the Palar Valley, India. And, there is some evidence to suggest that social capital can strengthen cluster capacities and the well-being of local workers and producers.

Despite these findings, it is also evident that cluster growth trajectories lead to differentiated outcomes. Local linkages often give way to external linkages as outside knowledge and know-how become critical to survive in global markets. Conflicts between the competing interests of large and small firms can become more apparent, with smaller producers often being squeezed. Finally, there are clear signs that particular categories of workers, especially women and unskilled workers, may lose out as clusters upgrade.

These findings point to the need for policy interventions. Policies aimed at supporting those who are marginalized, producers and workers, from cluster growth trajectories. A further area of policy is to observe where there are failures of collective joint action. That is to say, in many cases we find evidence that, despite clustering, the potential for joint action is far from fully developed. In what ways can external policy interventions, and cluster development initiatives bring this about. In sum what types of such initiatives can promote a poverty reduction agenda whereby the incomes and well-being of poor workers and producers are enhanced? We turn to this question in the policy conclusions.

A policy agenda on clusters and poverty needs to have, as a starting point, a method of ex-ante identifying clusters where poverty concerns are especially valid. Our discussion on the relationship between poverty reduction and specific cluster features, cluster processes and cluster dynamics provides us with a basis for mapping clusters and poverty. Table 1 shows how UNIDO's interventions to support cluster development, through promoting enterprise development, inter-firm linkages and local governance, can impact on poverty concerns. Based on this, table 2 provides a simple diagnostic tool to assist in identifying, ex-ante, clusters for pro-poor cluster development interventions. It provides a set of cluster features and broader concerns that developmental actors need to consider when selecting clusters for pro-poor development initiatives. The argument being that where, for example, clusters are engaged in labour intensive sectors, poverty impacts of such intervention would be greater than in clusters that were engaged in capital (or knowledge) intensive activities. Similarly, where cluster institutions (such as trade associations) are weak, or social provisioning ineffective, policy interventions could potentially result in greater returns in terms of pro-poor impact. Clearly, the table must be used cautiously. It is, at best, a way to identify the kinds of concerns that need to be taken into account when considering a poverty-focused cluster development programme. One issue that needs to also be considered is whether working in clusters that are already strong (say in terms of effective and representative local institutions, or in terms of competing in export markets) would have a greater effect in terms of poverty reduction (through both direct and indirect effects) than clusters where such institutions are weak, or where the competitiveness of clustered firms is poor. This is an important point in terms of policy trade-offs. It is also an area where ex-post assessment of the poverty impact of cluster development initiatives can provide significant insights. Table 2, therefore, provides the stepping stone to section 5 where we discuss the methodological issues that relate to conducting a poverty and social impact assessment of cluster development programmes.

Table 1. Cluster-poverty relationship: the expected effects of UNIDO cluster development interventions

	Areas of intervention	Expected effects (examples)	Relevance for poverty alleviation
		Implemented through/with local BDS providers	
Cluster development programme	**Enterprise development**	Private sector in the cluster enhanced leading to creation of new enterprises (both formal and informal), employment generation, up-skilling of workers, improved working conditions, technology upgradation, reduced environmental impact of production, introduction of quality control mechanisms (including ISO certification), improved product/process quality, broadened product range.	• Income generation • Employment generation • Inclusion in "productive" social groups • Skill upgradation of workers • Improvement of working conditions • Reduction of drudgery • Formalization of skill supply sources
	Business linkages	Promotion of existing/newly created enterprises through access to market information, entry in new markets (national/international), insertion in national/regional/global value chains, greater availability of credit, development of internal market conditions, development of local BDS market, export generation, participation in fairs (national, international), cost reduction through bulk purchase, vendor upgradation.	• Increased security through market diversification • Creation of disposable income/demand in the cluster • Pressure for enterprise development
	Local governance	Promotion of the idea of cooperation among enterprises, dissemination of win-win mentality, creation of vertical/horizontal networks, promotion of export consortia, creation of umbrella organizations, consensus on cluster-wide agenda/priorities, institutional networking, increased political relevance at the local/national level, increased use of untapped support resources	• Increased social capital locally • Articulation of local democratic process • Increased responsiveness of local support institutions • Improved environmental conditions

Note that "negative" effects on poverty are not being considered (e.g. technology upgradation can displace labour, insertion in global value chains can increase vulnerability, etc.)

Source: Based on Clara, M., Note to Authors, UNIDO, Vienna, May 2003.

Table 2. The cluster to poverty mapping matrix

Cluster characteristics		Poverty impact—will cluster development initiatives have high or low poverty alleviation impact? *(measured on a scale of 1 to 5 with 1 as lowest and 5 as highest)*				
		1	2	3	4	5
General cluster features	Location	Urban formal sector	Peri-urban	Urban informal	Rural off-farm	
	Geographical spread	Town/village		Region wide		State wide
	Type of firms	Medium sized		Small sized		Own-account
	Type of sector	High capital-intensive				High labour-intensive
	Cluster organization/ subcontracting pattern	Horizontal		Vertical		Both/main
	Type of good	Modern SSI, high tech		Traditional consumer good		Traditional craft/artisanal
	Nature of market		Global	Domestic	Local and informal	
	Employment	Formal				Informal
	Labour skills	Highly skilled				Low skilled
	Linkages to other sectors	Highly interdependent				Inexistent
Social parameters	Gender and difference	Adult educated men			Adult illiterate women	Child workers
	Household and community	Access to basic needs, social capital; social equity		Partial basic needs; social capital, social equity		Lack of basic needs and social capital; social inequity
	Social capital[a]	Extremely strong				Extremely weak
	Social provisioning	Extremely strong				Extremely weak
Promotability of clusters	Public sector support/ cluster institutions[b]	Extremely strong				Extremely weak
Cluster processes	Agglomeration economies	Extremely weak				Extremely strong
	Joint action	Extremely weak				Extremely strong
Cluster dynamics	Upgrading[c]	Very strong				Weak
	Growth trajectory	Dynamic				Stagnant

[a]As defined by UNIDO "shared norms, networks and values that facilitate cooperation and enable collective action".

[b]Local and central government intervention; local leadership, institutional and infrastructural support.

[c]Factory equipment and/or labour skills.

IMPACT ASSESSMENT METHODOLOGIES: Application to industrial clusters

In the previous section we focused on the relationship between clusters and poverty, drawing on the limited available evidence to assess how clusters might impact on poverty. The fact that few cluster studies directly address poverty provides an important challenge to UNIDO's efforts to make poverty reduction more central to its cluster development programmes (CDP). We argue that clusters can generate important benefits that improve the incomes and well-being of those who work within them. This is based on the fact that many clusters provide employment and incomes for the very poor, often through informal work. It is also an outcome of the processes associated with clustering, in terms of agglomeration economies and joint action, which can generate significant pro-poor gains for cluster entrepreneurs and workers. This increases the importance of developing a methodology to conduct poverty and social impact assessments (PSIA) of CDPs. It also involves a heightened awareness of the poverty implications at all levels of cluster interventions, in order to improve their pro-poor impacts as an embedded part of a cluster development programme. PSIA is increasingly used in a wide number of policy arenas, but has yet to be applied to industrial clusters. This section focuses specifically on issues involved in developing a methodology for cluster-based PSIA.[4]

Approaches to impact assessment

Impact assessment (IA) aims to examine the consequences, both positive and negative, to people of a public policy or private action. It compares the situation with a policy or action to that which would have been without the intervention. Impact assessment has been summed up as ". . . the systematic analysis of the lasting or significant changes—positive or negative, intended or unintended—in people's lives brought about by a given action or series of actions" (Roche, 1999). Emphasis on policy eradication as a result of the Millennium Development Goals (MDGs) has recently led to an increased focus on poverty impacts of multilateral and government policies as well as civil society programmes.

There is no single blueprint for impact assessment. Instead, there is a continuum from more quantitative economic approaches, to sociological and anthropological approaches. An economic approach is usually equated with an income and expenditure approach to poverty. It employs questionnaire surveys based on representative samples or existing large data sets based on national surveys (such as household surveys) to undertake quantifiable statistical analysis of impacts (Kirkpatrick and Lee, 2000; World Bank, 2002). The economic approach aims to provide an "impartial" appraisal that can isolate and assess the specific effects of a particular policy independently of other variables that might also co-exist. It takes a comparative static approach, normally constructing a scientifically selected control group to measure a quantifiable impact in different time periods, and is often costly in time and resources to undertake.

[4]An extensive database of papers and information on enterprise impact assessment has been compiled by the Enterprise Development Impact Assessment Information Service (EDIAIS). See www.enterprise-impact.org.uk

Sociological and anthropological approaches offer a broader picture, and have their roots in more qualitative analysis. They are more likely to assess poverty impacts in terms of indicators such as access to assets, public services (education and health), and gender empowerment. Poverty impact assessment has increasingly drawn on the use of participatory methodology, based on participation of poor people themselves from a grass-roots level, giving them voice in any policy process. Poverty impact assessment has had strong impetus amongst NGOs and some donor agencies as a means of assessing the effectiveness of projects or policies from the viewpoint of poor communities and beneficiary groups.

An important factor in the type of the impact assessment is whether it is aimed at:

- *Proving impact*—for example the upward accountability of a project to donors (or more recently downward accountability to beneficiaries). This puts greater emphasis on objective and accurate measurement of the impacts of policy interventions. It often involves a top down approach, carried out over a longer time frame, and using "scientific" research methods
- *Improving impact*—using impact assessment as a learning process to enhance policy. It involves understanding the process of an intervention with the aim of improvement (even as the impact assessment itself is being undertaken). It uses a more bottom up approach, accepts a degree of subjectivity, and can be carried out over a shorter time frame (Bird, 2002).

Developing a conceptual frame for PSIA

The primary aims of cluster development programmes to date have been to "enhance institutional networks, empower local actors and ensure the creation of sustainable local governance framework that is more responsive to the needs and aspiration of the private sector". Making poverty reduction more central to this agenda is a relatively recent addition to the cluster development programmes, and an *improving* approach to PSIA is more likely to enhance the pro-poor dimension of CDPs.

To be effective there needs to be synergy between the goals of the cluster development programme and the goals of the impact assessment. We aim to mediate these goals through the combined use of the value chain and capability approach discussed in section 2. The value chain approach allows us to map the impacts of CDP on poverty at different levels within industrial clusters, and to trace the direct, indirect and trickle down impacts on poverty. The capability approach can be adapted to examine the income and well-being of small and micro-entrepreneurs as well as workers, and their households. Through this combined approach, we aim to assess areas where CDPs have an impact on poverty of small and micro entrepreneurs and workers, and how to improve the pro-poor impact of CDPs. This should also contribute to developing a sustainable local governance framework that is more responsive to the combined needs of the private sector and poverty reduction. A value chain approach is increasingly being used in enterprise impact assessment, which Mayoux (2003) has also combined with a participatory methodology.

A challenge in moving form the goals of the CDP to those of poverty and social impact assessment is that the CDP relates to firms whereas PSIA relates to people. There is a connection between the impact of a programme on a firm and its consequential impact on the

entrepreneurs and workers located within it, but there are conceptual differences in how we would analyse each. Box 1 draws out the linkages between UNIDO's main goals for CDPs and the income, well-being, assets and entitlements of entrepreneurs and workers. There is not a rigid one to one connection between the three columns. The impact of the CDP on the firm provides the context within which the people located within that firm are able (or not able) to enhance their well being, but does not necessarily mean they are all equally affected.

The list of potential states of well-being in box 1 is not definitive, and only provides a possible set that could be included in a PSIA. In practice, those selected will differ between clusters, and the approach needs to be flexible enough to account of different priorities and reflect the needs and voice of poorer groups within clusters. Once we have a clear notion of which aspects of well-being are to be selected for impact assessment within a cluster, we can then identify and map the "poverty nodes" within the cluster where those people experiencing these dimensions of poverty are more concentrated.

Box 1. Potential states of well-being, assets and entitlements relevant to industrial clusters

Area of intervention	Entrepreneurs should be able to achieve or access:	Workers should be able to achieve or access:
Enterprise development	*Well-being:*	*Well-being:*
Poverty Relevance: Income generation Employment generation Inclusion in "productive" local groups Skill upgradation of workers Improvement of working conditions Reduction of drudgery	⇨ Minimum standard of living Skill and training Health and non-hazardous work Sustainable enterprise No discrimination Cluster participation Empowerment	⇨ Minimum standard of living Skill and training Health and safety Decent and secure work No discrimination Worker participation Empowerment
	Assets and entitlements:	⇨ *Assets and entitlements:*
Business linkages *Poverty Relevance:* Increased security through market diversification Creation of disposable income/demand in the cluster Pressure for enterprise development	⇨ Income Contractual rights Information and business networks Access to markets and credit Social capital Social provisioning Clean environment	Income Employment rights Access to work Promotion in work Social capital Social provisioning ⇨ Clean environment
Local governance *Poverty Relevance:* Increased social capital locally Articulation of local democratic process Increased responsiveness of local support institutions Improved environmental conditions	⇨	

The impact assessment methodology—key issues

Here we turn to some of the key issues that need to be addressed in designing the impact assessment methodology. These range from mapping the cluster and the institutional environment in which the CDP operates to the key actors to be assessed, the scope of the assessment and the indicators to be used. Clearly, the nature of these issues is in part determined by the types of cluster and the aims of the CDP. A more detailed discussion of research methods is contained in annex II.

Mapping the industrial cluster and institutions

An understanding of the economic and social environment in which a cluster is located is essential for understanding the poverty impact of the CDP. This includes an examination of:

- Background information on the development of the industry or sector;
- Aggregate production, employment and trade statistics;
- The regulatory context at a national, regional and local level;
- The level of state services and infrastructure available;
- Local statistics on population, health, education, morbidity;
- Social and demographic profiles relating to gender, ethnicity, religion;
- Any other relevant socio-economic factors, e.g. migratory trends, recent economic shocks.

These broader factors influence the operation of the cluster, how the impact of a CDP is mediated, and need to be taken into account by a PSIA.

Next a more detailed mapping of the cluster actors identifies the specific types of firm, actors and institutions operating within the cluster, and their relationship to each other. A simplified cluster value chain is depicted in box 2. The left hand side provides an outline of the key types of trader, producer, subcontractor and worker found in a hypothetical cluster, as well as the linkages between them in relation to the production and distribution process. In reality, the mapping of a cluster value chain would be much more complex than this.

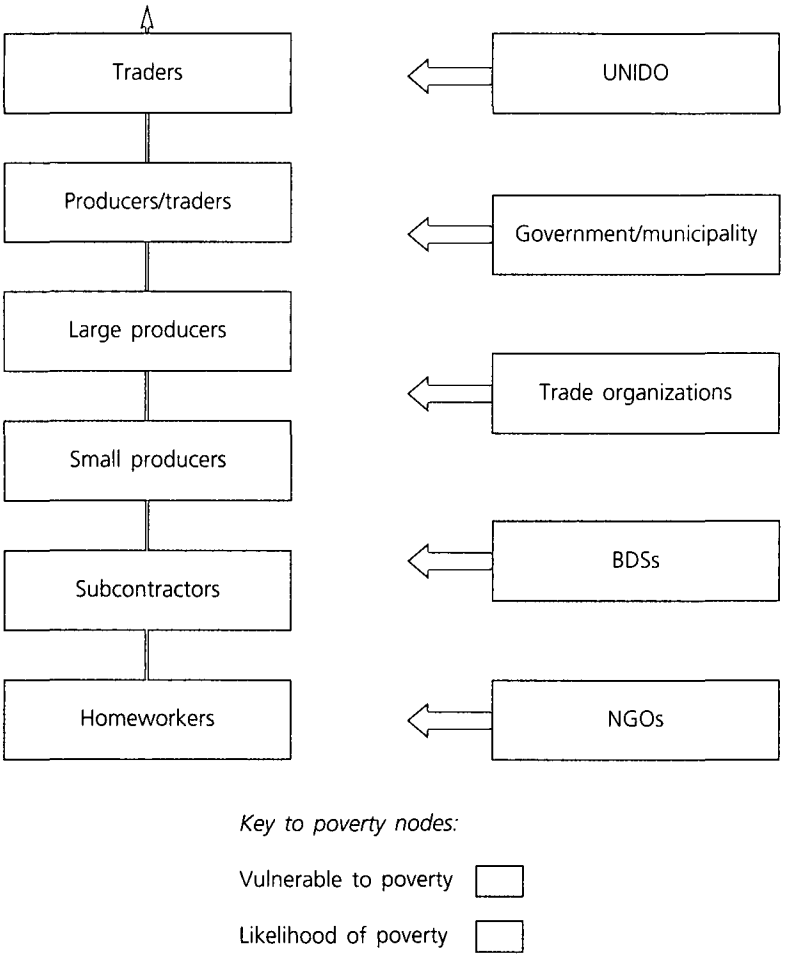
Mapping the institutional stakeholders linked within the clusters also plays an important role in the analysis of the linkages between different actors within the cluster. These are shown on the right hand side of box 2. These includes institutions that:

- directly form part of the industrial cluster (e.g., BDSs, marketing and trade association, labour and civil society organizations); and
- have more external linkages to the industrial cluster (e.g., government, civil society organization, export associations, UNIDO).

Combined cluster and institutional mapping facilitates identification of the connections between different institutional stakeholders, and their links to entrepreneurs, traders and workers in the cluster. Once mapping has been undertaken, stakeholder analysis is required to assess the relative positions and tensions between institutions in relation to poorer groups, and the role they might play in a poverty impact assessment. Institutional stakeholders can

also play an important part in informing the learning process and enhancing pro-poor cluster development policy.

Box 2. Simplified value chain mapping of industrial cluster and institutions



Mapping the commercial linkages between firms within an industrial cluster helps identify "poverty nodes" within it.[5] These are the points in the value chain where specific groups of producers and/or workers are located who are vulnerable to poverty, or likely to be in poverty. Such nodes are highlighted by the shaded boxes on the left side of box 2. These could arise because of the type of activity people are engaged in (subcontractors or homeworkers in our example), and/or because of their social, religious or ethnic status. Poverty nodes within clusters can be further disaggregated into different sub-groups, for example micro-entrepreneurs and waged workers, or male and female, with different levels of vulnerability to poverty. Sub-groups are not homogenous, their composition will vary and some sub-groups may be better off than others. We thus need to disaggregate in order to identify specific poverty groups, and this needs to form a part of our more detailed mapping.

[5]In this study we use "poverty node" to define the points within the cluster where poverty arises, but which could comprise a collection of different groups. We define 'poverty groups' as the specific but differentiated groups that experience poverty, which could include for example micro-enterprise groups, small producer groups, worker groups.

An initial cluster mapping might indicate that traders have additional sources of income outside the cluster and producers who market their products independently traders and large producers are unlikely to be classified as poor. However a poverty mapping might identify three poverty nodes below them in the cluster chain (shaded areas in box 2) on the basis of the relative deprivation of income and well-being amongst groups located there: *(a)* small producers, and workers employed by them, who have moderate returns but few assets and could easily fall into poverty as a result of a shock, all of whom are vulnerable to poverty; *(b)* subcontractors who are completely dependent upon middle men for "wages", access to market, supply of raw material and credit who have low and insecure incomes; and *(c)* own account workers, homeworkers and casual day labourers whose incomes are normally below any minimum wage or even US$1 per day.

Scope of assessment

The initial mapping of the industrial cluster, and identification of poverty nodes, will provide an important basis for making an informed decision on the scope of an impact assessment, if it is to be narrower than the whole cluster. Take a hypothetical example of a cluster as depicted in box 2. The scope of the impact assessment will be determined by a number of factors, and needs to be thought through carefully in the design phase of the impact assessment. This will be affected by:

- The extent of the industrial cluster mapped, does it entail fairly short and direct, or long complex backward and forward linkages. In the latter particularly how far should the impact assessment extend (e.g., to include traders, just smaller/micro producers, how far in terms of backward and forward linkages, to include subcontractors, raw material suppliers, collectors etc.).
- Where the key poverty nodes are within the industrial cluster, and which groups the impact assessment should include to sufficiently assess poverty impacts. Which groups should be included as a comparator.
- The requirements of the end user, the goal of the impact assessment, and the resources available to undertake the study.

Units and indicators of assessment

Normally poverty assessments work with households or communities, but it is also possible to carry out impact assessment based on individuals or groups as the basic unit of assessment. In the case of industrial clusters we are dealing with producers and workers as the core groups within the cluster, whose incomes and well-being are directly affected by cluster policy, but the individuals in these groups also live in households. We therefore need to explore the advantages and disadvantages of choosing the group, individual or household as a particular unit of assessment. These are outlined by Bird (2002), and discussed in box 3.

In the case of industrial clusters, mapping the poverty nodes will help us to identify poor sub-groups within those nodes as a possible unit of assessment. These are sets of individuals with common circumstances in terms of their vulnerability or experience of poverty. Box 4

Box 3. Advantages and disadvantages of different units of assessment

Unit of assessment	Advantages	Disadvantages
Individual	• Easily defined and identified • Allows social relations to be explored • Allows inter-household relations to be explored • Can allow more personal and intimate issues to emerge • Permits an exploration of how different people by virtue of their gender, age, social status etc. experience poverty/the effect of the intervention • Permits understanding of political capital	• Most interventions have impacts beyond the lindividual level • Difficulty of attribution through long impact chain • Difficult to aggregate findings
Household	• Relatively easily identified and defined • Permits appreciation of household coping and survival strategies such as income, asset, consumption and labour pooling • Permits appreciation of link between individual household and group/community • Permits understanding of links between household life cycle and well-being	• Exact membership sometimes difficult to assess • The assumption that what is good for household is good for all its members is often flawed
Group	• Relatively easily identified and defined • Permits understanding of political capital • Permits understanding of potential sustainability of impacts • Permits understanding of potential group level transformation	• Exact membership sometimes difficult to assess • Group dynamics often difficult to unravel and understand • Difficult to compare using quantitative data

Source: Adapted from Bird (2002).

identifies possible key poverty groups that could be found within poverty nodes. Careful attention needs to be paid to difference based on gender, religion and ethnicity between poor groups within any poverty node. Subcontractors of one ethnic origin may, for example, receive higher paid work making them less vulnerable to poverty than subcontractors of another ethnic origin. A pilot phase could be essential for finding out and firming up the mapped poverty groups, helping to confirm the unit of assessment.

Box 4. Potential poverty groups identifiable within industrial clusters

Enterprise/Producer Groups	Worker Groups
Small Firms	Wage Labour
Micro-entrepreneurs	Home Workers
Own-account workers	Contract Labour
Small-subcontractors	Family Labour

If groups of workers and producers are selected as the unit of assessment, levels of poverty ultimately depend on the circumstances of the household in which that individual lives. Their engagement in productive activity in the cluster will affect the level of household poverty, but so will other factors, possibly independent of the cluster itself (e.g., earnings from outside activities, state benefits etc.). In addition, most poverty data is collected at a household level, and ultimately this is where "trickle down" is going to have the greatest poverty impact. Systematic household analysis in an impact assessment can be costly, but a comprehensive impact assessment would attempt to examine both groups to assess the reasons for poverty and households to assess overall impact.

The indicators of assessment chosen for industrial cluster impact assessment need to be thought through carefully based on the aims, objectives and scope of the assessment. A set of potential well-being states for relevant to actors within industrial clusters was developed in box 1 above. Based on these, we can then develop a possible set of indicators, which are identified in box 5.

Box 5. Examples of types of indicators or "impact criteria"

Stakeholders	Areas of change: positive poverty reduction impacts	Areas of change: negative poverty reduction impacts
Entrepreneurs	Increasing revenues Enhanced standard of living Reducing dependence on single trader/market Increasing formal training/skill Increasing access to credit Better information and contacts Less discrimination Greater participation in cluster Improved governance	Falling revenues Reduced standard of living Higher dependence on one trader or market No change in training/skill Poorer access to credit Isolation from information and contacts More discrimination Poorer participation in cluster Reduced governance
Workers	Increased wages Enhanced standard of living (e.g. housing) Longer periods/more stable work More skills training/experience Increased employment benefits (pensions, social security)	Falling wages Poorer standard of living (e.g. housing) Shorter periods/less stable work Less skills training/experience Reduced employment benefits (e.g. pensions, social security)

Stakeholders	Areas of change: positive poverty reduction impacts	Areas of change: negative poverty reduction impacts
Workers *(continued)*	Improved conditions of work (e.g. hours, contracts) Better health and safety (e.g. chemicals, machines) Less discrimination (e.g. wages, jobs, training) Gender empowerment (e.g. more female employment) Freedom of Association	Poorer conditions of work (e.g. hours, contracts) Poor health and safety (e.g. chemicals, machines) More discrimination (e.g. wages, jobs, training) Less gender empowerment (women have lost jobs) No freedom of association
Households	Increased and stable income Decent housing Access to childcare Social networks and support Equitable distribution within household (work, income, decision making)	Debt burdens Migration Loss of social capital/support networks; Lack of childcare Unequal household distribution (income/work/decision making)
Local community	Improved services Improved social capital Clean and safe environment	Reduced services Reduced social capital Environmental degradation

Again, the above are only *possible* indicators. Those actually selected for a PSIA are likely to vary, at least to some extent, depending on the status of the poverty group (including based on gender, ethnicity, caste and religion) or specific objective of the PSIA. For example, women often have specific capability constraints that are not experienced by men. It is important therefore that indicators are not mechanically prescribed in a pre-determined fashion by "outsiders" such as researchers. The pilot phase can play an important role in helping to identify indicators, and ranking of indicators in terms of importance, by different groups, using participatory tools that allow poor producers and workers to voice their own concerns, so that only a manageable number of relevant indicators are chosen. It is always better to select a smaller number of indicators that can be thoroughly assessed, than a large number which become unmanageable.

In the selection of indicators careful thought also needs to be given to the design and types of indicator, and how they are to be used (Mayoux, no date). Types of indicator can be:

- *Quantitative indicators*—which are answered in numerical form
- *Qualitative indicators*—which are answered in verbal form
- *Direct indicators*—which result directly from an intervention (e.g. the provision of BDSs)
- *Proxy indicators*—which are assumed to indirectly measure an intervention (e.g. the number of women registering on a training course reflects an increase in women's skill base)

Once indicators have been chosen, careful attention needs to be paid as to how they will be scored for comparison. In the case of quantitative indicators, this is not so problematic (for

example an increase in income is measured by monetary returns or stability of work by the number of days worked in a year). In the case of qualitative indicators, this may be more subjective. Participatory tools can help in developing scoring procedures, such as using matrix rankings or mapping (for example is a service ranked as better now than previously, or does a mapping show greater accessibility to markets or service providers than previously).

Box 6 highlights some of the indicators identified previously, and examines possible measures that could be used to quantify or score them. For most indicators relating to well-being, it is likely there could be a combination of measures (quantitative, qualitative and participatory). For example, income is one element in a person's standard of living, and could be measured by their quantitative monetary wage or revenue, plus qualitatively by their non-monetary subsistence. But in addition, we would need to gauge the relative importance of income to well-being. Some groups of people or individuals may have a preference for less income but more security. A CDP initiative that increased their income but reduced their security may not therefore be perceived as an enhancement of their well-being and reduction in poverty. This is best assessed through Focus Group Discussion and participatory exercises.

Box 6. Examples of measures of indicators and information sources

Indicator	Possible measures	Potential information sources
Minimum standard of living: Income	Quantitative (revenues, wages) Qualitative (non-monetary income, subsistence) Participatory (income sufficient to cover needs and wants, relative importance of income to well-being, changes in income, reasons for change, future improvements)	Accounts, wage slips, questionnaire Semi-structured interview Focus group discussion and participatory tools (ranking mapping, time lines)
Minimum standard of living: Housing	Quantitative (brick/mud, toilet, running water, electricity, stove, no. of rooms) Qualitative (standard of facilities, overcrowding, Participatory (relative importance of housing standards to well-being, changes in housing, reasons for change, future improvements)	Structured questionnaire Semi-structure interview Focus group discussion Mapping, ranking, time lines Participant observation
Minimum standard of living: Consumables	Quantitative (number of consumer goods—food, clothes, radio—frequency of purchase) Qualitative (quality of goods, levels of nourishment) Participatory (relative importance of consumables to well-being, changes in consumables, reasons for change, future improvements)	Structured questionnaire, receipts Semi-structured interview Focus group discussion Participant observation, ranking, mapping, time lines

Indicator	Possible measures	Potential information sources
Healthy and non-hazardous work	Quantitative (list of chemicals used, type of machine protection, no. of fire exits, PPE available, no. of accidents) Qualitative (H&S procedures, are H&S guidelines followed, are PPEs used) Participatory (perceptions of health hazards for well-being, changes over time, reasons for change, future improvements)	Key informants, H&S records structured questionnaire Semi-structured interview Focus group discussion and participatory tools (e.g. role play, mapping, time lines)
Sustainable enterprise/ security of work	Quantitative (trading contracts, employment contract, regularity/level of trade or work) Qualitative (reliability of buyers/employer, sufficiency of contracts) Participatory (relative importance of secure trade/work, for well-being changes over time, reasons for change, future improvements)	Key informants, documentation, accounts, structured questionnaire Semi-structured interviews Focus group discussion Ranking, time lines
No discrimination	Quantitative (number of traders/ producers/workers by gender, ethnic, religious origin) Qualitative (difficulties of accessing markets, work because of gender ethnicity) Participatory (perceptions of discrimination, causes for discrimination, changes over time, reasons for change, future improvements)	Key informants, documentation, stuctured questionnaire Semi-structure interviews Focus group discussion Role play, ranking, mapping, time lines
Empowerment	Quantitative (nos. in trade associations, trade unions, community organizations) Qualitative (problems of engagement, attendance and participation in , meetings, level of involvement) Participatory (perceptions of empowerment, desire to engage in activities, difficulties and opportunities to engage, ability to influence change, changes over time, reasons for changes, future improvements)	Key informant interviews, documention, questionnaires Semi-structured interviews Focus group discussion Role play, mapping, ranking, time lines

Time frame and collection of baseline data

The time period chosen for the impact assessment has important implications for the type of approach adopted and vice versa. These are also linked up to whether the impact assessment is based on a "proving" or "improving" approach.[6] This can be based on a one-off study in a given time period, a repeat study carried out before and after a CDP is implemented, or a longitudinal study. In box 7 we consider the advantages and disadvantages of these different approaches.

[6]For a more detailed discussion of the above approaches see "Basic Impact Assessment at Project Level" prepared by C Kirkpatrick and D Hulme available on www.enterprise-impact.org.uk.

Box 7. Advantages and disadvantages of different approaches

	Advantages	Disadvantages
One-off study: simple approach	Least resource intensive Does not require counter-factual Does not have "dilemma" of counterfactual Focus on improving	Limits study to those who have experienced programme over time Seen as "less scientific" by some analysts Relies on recall, which may be unreliable
Repeat study: moderate approach	More rigorous than simple approach Does not rely on "recall" Balances pros and cons of simple and complex approaches Combines proving and improving	Lacks "scientific" credentials of complex approach More costly than simple approaches Encounters problematics of "counterfactual" control group
Longitudinal study: complex approach	Seen as more "scientific" Can include respondents who have just entered programme Does not rely on recall Focus on proving	Costly on resources Use of "counterfactual" control group problematic Questioning of "objectivity" of results

Baseline data provide an important benchmark for assessing and measuring impact of a programme over a period of time. In the case of UNIDO's industrial cluster programmes, it is unlikely that any existing baseline data exists. In clusters that are already part of the programme, poverty was not originally a goal of the programme and therefore it is unlikely poverty data has been collected (extensive searches as part of this study have not found any reliable cluster poverty data). In new clusters where UNIDO is beginning to work, baseline data is equally unlikely to pre-exist. The first phase of any impact assessment will therefore need to collect baseline data as a key component of the research activity. How this is done will depend on the specific design and methodology chosen for the impact assessment.

One-off study carried out on a one-off basis, in a given time frame, normally uses "recall" of respondent beneficiaries as the primary method of assessing impact. This is a least cost approach to impact assessments, but the data can be unreliable and requires triangulation.

Repeat (or before and after study)*:* can use different methods for collection of baseline data. These can include carrying out a full baseline study at the beginning of a project and using recall.

Longitudinal study: The longest time period for impact assessment involves carrying out a baseline study, and periodic review assessments, over a prolonged period (e.g., 5 years), using a control group to measure actual impact. This is the most "scientific", but also the most costly form of impact assessment.

The "counterfactual"

One of the most important aspects of impact assessment is the use of counterfactual analysis in the attribution of impacts. This allows us to compare the differential effect of a cluster development programme with a "no-treatment" scenario. Counterfactual analysis helps verify causal relations between outcomes and impacts, and measure impact attributable to specific initiatives.

The extent to which the need for counter-factual is stressed depends in part on the approach to impact assessment taken. An approach based on "proving impact" has greater need of counterfactual analysis to "prove" impact, than an approach based on "improving impact". There are different levels of counterfactual assessment. These range from recall, which explores with respondents the "before" and "after" scenario of a particular programme, but memories can be clouded, and affected by experience of the programme. At the other end of the spectrum is the use of a carefully selected "control group" that has many similarities with, but is not involved in the programme. Roche (1999) has argued that the use of control groups is problematic:

- Finding a control group that is subject to all the same influences *except* the intervention is difficult;
- There are ethics involved in working with a control group, but with holding support from them;
- There could be cross over from the programme which influences the control group.

Selection of the counterfactual is therefore notoriously tricky. Due to the socio economic context in which development interventions take place—it is hard to find "control groups" which experience exactly the same conditions with no "pollution" from the intervention (e.g. due to living and/or working in the same area). Inevitably use has to be made of "best fit" scenarios based on the specific context and the knowledge of the team and local research collaborators. In the end, the counter-factual is likely to be based in part on a process of logical reasoning, which is less daunting in terms of "validity" where learning is at the heart of the impact assessment

In the case of impact assessment for industrial cluster programmes, control groups are most likely to be found amongst similar types of producers in areas not integrated into the cluster programme, or in similar clusters where no such programme exists. But this does not mitigate the problems highlighted above, as the control group may not have the same productive capacities, may produce different types of good, or may be affected by a different regional or social environment which makes it difficult to isolate and differentiate the CDP impact alone. These problems do not necessarily negate the need for a control group, if one can be identified, but in the end a process of reasoned and substantiated logical argument and triangulation also play an important role in assessing the specific impact of the CDP.

Impact as a learning process

This section has examined how a methodology for impact assessment for industrial clusters could be developed, drawing on a combination of value chain and capability approaches. Annex II below explores specific research methods in further detail. An important aspect in

how a PSIA is designed depends on whether it is based on a "proving" or "improving" approach. If an important aim of an assessment of a CDP is to improve the impact of the programme on an ongoing basis, then the emphasis will be on a "flexible" approach in which the acquisition of *both* quantitative and qualitative data will be important, and logical reasoning will play a key role in assessing impact. Income, consumption, employment and other indicators can be assessed quantitatively using a questionnaire survey, but other aspects of well-being are qualitative and based on individual's perceptions of their freedom to lead a full life. PSIA as a learning process thus requires combined quantitative and qualitative approach, supplemented where possible by the use of participatory tools to hear the voices of poor people themselves.

From the perspective of improvement, we then need to think of impact assessment as a learning process, where assessment itself contributes to further improvement. This requires careful thought as to how an impact assessment can be continued, on an ongoing basis, through regular monitoring and evaluation. This can be done within the industrial cluster itself, as the most sustainable learning is by experience of those most engaged and able to effect change at a local level. One possible means of implementing ongoing monitoring and evaluation is to set up a poverty monitoring committee within the industrial cluster that includes representatives of all stakeholders (including the poorer groups that have been identified in the initial impact assessment). Dissemination of the findings of the initial impact assessment in local workshops could stimulate the formation of such a multi-stakeholder committee, which is then responsible for coordination of further activities to ensure learning is carried on, and articulated in terms of recommended initiatives and policies. A committee could also be involved in local reporting, where a follow-up impact assessment acts as external verification, through which longer term impacts can be assessed and broader policy recommendations made.

Developing impact assessment as a learning process involves a "mindset change" by all actors and stakeholders involved, from higher to lower levels. Such a process of change may take time to instil, but thought should be given as to how to take positive steps in this direction. An important aspect of this is to encourage a culture where poverty reduction and capability enhancement is seen to be of benefit of *all* stakeholders within the cluster, and contribute to the more productive functioning of the cluster as a whole. Learning should be by positive examples, documenting where positive improvement has been made, and well-being enhanced, not only in workshops, but through related activities such as videos, photos and publications. Improvement in one industrial cluster can then be used as an example to help stimulate improvement in another, and impact assessment as a process of learning and improvement can help to guide policy and cluster development programmes on a more consciously pro-poor basis in the future.

6. INDUSTRIAL CLUSTERS AND POVERTY: The policy implications

This study set out to assess the relationship between industrial clusters and poverty. As we stated this is a relatively underdeveloped theme in industrial policy research. Our focus on poverty is an obvious one, driven by contemporary concerns on poverty targeting. More significantly, there is an apparently strong case industrial clusters lend themselves to a poverty reduction agenda. Clustering may not only raise employment and incomes for the poor, it can also have implications for wider notions of poverty—addressing issues of risk, vulnerability, empowerment and participation for poor and marginalized groups. This has been the basis for the argument that clusters can offer a "high road" of development, marked by rising incomes and employment. But pro-poor outcomes necessarily emerge from cluster development, and does it require particular forms of policy interventions? We turn to these broader policy concerns in this concluding section.

Cluster development programmes tend to concentrate on the growth and competitiveness of firms. A poverty focused strategy requires stronger attention to people within clusters, namely entrepreneurs and workers, their households and the wider community. Thus, a pro-poor cluster development strategy may require the tweaking of existing cluster development initiatives. It would also need to consider new areas of policy intervention, and forms of policy networks that bring together various civil society and public actors, which can effectively promote wider poverty and social development goals within clusters. Finally, clusters are part of a dynamic process of industrial development. As they evolve winners and losers emerge. Thus, we find that particular types of firms, producers and workers can gain from the dynamics of clustering, while others are at risk of being squeezed. The issue for policy is of course to mitigate the losses for workers and producers, especially if they are found primarily amongst the category of the poor, and to promote cluster growth.

Within the growth and competitiveness focus, cluster policy initiatives centre on promoting joint action within clusters that help firms compete more effectively, support the provision of business development services to clustered producers, help clustered firms make links with external traders and wider global markets, and assist clusters to upgrade their technical capacities by improving their products, their processes and organization of production, and widening the range of functions that clustered firms undertake. Thus, much of the policy initiatives concentrate on managerial, institutional and knowledge-based activities within clusters, on cluster innovators and on business development services (Humphrey and Schmitz, 1996; Altenburg and Meyer-Stamer, 1999; UNIDO, 2000; UNIDO, 2001; Committee of Donor Agencies for Small Enterprise Development, 2001). These point to the need for intervention by external actors, particularly the state, in addressing collective failures and promoting the positive gains that often go undeveloped within clusters. The policy literature argues for promoting network initiatives, and in particular using business development actors and institutions to provide critical support to SMEs and be the levers that allow clustered SMEs to link with markets. The literature also emphasizes the importance of adopting a soft touch that helps local actors develop their capacities rather than swamping their abilities.

Despite the large number of cluster development initiatives, much of it emanating from, or being promoted by, multilateral agencies such as UNIDO, the Asian Development Bank

(ADB) and the ILO, as well as bilateral donors such as the German Technical Assistance Agency (GTZ), the Swiss Agency for Development and Cooperation (SDC) and the Japan International Cooperation Agency (JICA), there is little evidence of explicit attempts to use cluster development to promote a poverty alleviation agenda, beyond of course the desire to see employment growth. Having said that, many such initiatives clearly involve working directly with poor communities. Take for example, some of UNIDO's CDI programmes in India. UNIDO's intervention in support of the Jaipur blockprinting cluster has helped develop a community of largely informal, often homebased, urban artisanal producers of block printed fabrics, many of who lack formal education qualifications, into producers for more demanding national and export markets (UNIDO, 2002). Through intervention, that sought to promote the development of inter-firm collaboration and the provision of BDS services, a number of poor communities, especially women, acquired tools, improved skills and thereby raised their capabilities.

But there are a number of critical gaps within the policy framework on cluster development where a poverty agenda could be more clearly articulated. One is with respect to the need to distinguish between clusters for policy intervention. A key finding from our review is the need to consider more carefully the distinctions between incipient and mature clusters. There is a potential policy trade-off with regards to poverty concerns between a cluster development policy that promotes mature clusters and one that focuses on incipient, survivalist clusters. The latter have a greater incidence of poor households, are located in poor rural and urban informal sites, tend to produce goods for local consumption, often by poor communities. In contrast, mature clusters can be "engines of growth", dynamic and competitive, displaying signs of upgrading as they target both local and global markets. The policy agenda to date, in the drive to promote competitiveness and entrepreneurship within clusters, has tended to show a greater willingness to engage with growth clusters. Growth engine clusters do matter for poverty concerns, both directly and indirectly. But there also needs to be a more direct focus on the more incipient clusters, those that provide a survival strategy for poor households, but do not yet display the characteristics of their more successful cluster cousins. More work clearly needs to be done to assess the direct and indirect impacts on poverty of the two distinct types of clusters. Moreover, these distinct sets of clusters will require quite distinct types of policy interventions. Existing cluster initiatives that tend to concentrate on growth clusters may need to be tweaked or developed if they are to address poverty concerns more directly. Cluster development programmes aimed at incipient cluster are unlikely to be sustainable unless there are real growth prospects for such clusters.

A pro-poor cluster development strategy thus needs to consider the following points. These are far from exhaustive, but give an indicative sense of the core themes for a pro-poor agenda:

- Poverty Targeting—namely identifying clusters that have a high incidence of poor households. This could be on the basis of location (focusing on clusters in the informal economy, or in rural or peri-urban settings). It could be on the nature of employment (preponderance of unskilled workers, or the presence of homeworkers, women and family labour). Or, it could be on the nature of the sector—with a concentration on those sectors that are relatively labour intensive, employ artisanal skills but have some barriers to entry to ensure that price competition does not become acute. It will also involve targeting policies where a pro-poor impact can be explicitly identified, particularly with regards to empowering the poorest clustered groups (women, ethnic and religious minorities).

- Clustering Advantages—Promoting activities that raise local external economies which have a direct effect on poverty considerations. Promoting activities where local joint action is lacking or where attempts to foster such local cooperation could have more direct impacts on poverty. Thus, using business development services to help promote the employment of poor communities.
- Poverty strategic support—this may involve distinguishing between the kinds of support needed for poorer workers and entrepreneurs and for those in the cluster that are better off. Thus, poorer entrepreneurs may have an acute shortage of financial resources which requires micro-credit assistance. Or, such producers may be excluded by the nature of their community. This would require a more considered set of interventions that helps such producers access markets, a links them effectively to trade networks.
- Training—Training of poor, especially unskilled, workers can be a critical aspect of raising productivity and skills as well as enhancing the competitive abilities of the cluster. Training can also serve to raise the capabilities and well-being of workers, improving their incomes and providing them with a greater sense of empowerment through work.
- Recognizing Cluster Differences—between firms, as well as between firms and workers and amongst workers. Clusters produce winners and losers. Some of this may be natural, in other cases losers are more marginalized segments of the labour force (such as women workers or homeworkers) or particular types of firms (such as microenterprises). It is important to ensure, where feasible, that marginal groups are not weakened through this process. This may require more explicit policy targeting of such firms and workers.
- Cluster Impact Assessment—as a means of assessing and improving the pro-poor effect of cluster development policies. This involves using cluster actors to identify their own notions of poverty—in terms of capabilities and well-being. Furthermore, it also involves using locally ongoing poverty monitoring and evaluation within clusters.
- Pro-Poor Partnerships—using cluster mapping to identify the key stakeholders (individuals and institutions) which can be most effective in supporting pro-poor policy interventions. Encouraging partnerships between stakeholders (private firms, civil society and government) aimed at enhancing pro-poor policy interventions within clusters

It is clear that many of these aspects of policy interventions are areas where cluster development initiatives are already actively engaged—such as in training, or business development services. Others are areas where other forms of pro-poor programmes, outside of the cluster development milieu, have made significant headway. This, for example, would apply to the extensive work that has already been achieved in the area of micro credit strategies. Or there may be areas where policy interventions have to concentrate more sharply on social policy issues (such as healthcare or education) that fall well outside the traditional purview of cluster development programmes. Clearly, there need to be some boundaries for cluster development strategies. But what is also necessary is the imperative to build synergies between existing cluster development initiatives and other types of anti-poverty programmes. Thus, cluster programmes need to draw on the work being done within broader anti-poverty and social development policy agendas. In some measure, this is already occurring. Take, for example, the growing interest within cluster programmes to promote women's employment and entrepreneurship (UNIDO, 2001 and UNIDO, 2003 on UNIDO's work on women's entrepreneurship). Or the emphasis now being placed within cluster initiatives to draw on lessons observed from micro-credit extension programmes to small and marginal entrepreneurs (see, for example, UNIDO, 1999).

What these recent moves in cluster development programmes indicate is the need to pay greater attention to issues that more directly address poverty concerns, in particular with regards to labour and work practices. Thus, important new agendas for cluster development include labour standards, health and safety matters, and working conditions. These concerns are tied into the current debates within globalization on international trade, global standards and corporate social responsibility. While globalization has opened up new opportunities for clustered SMEs in the developing world, it has also thrown up new challenges. One particularly significant challenge that has emerged is around pressures to comply with global standards especially relating to environmental impact, quality management and labour and social concerns.[7] The drivers behind such pressures include national and international regulatory bodies as well as global buyers who are concerned by conditions within their supply chains and are under pressure from ethically and environmentally aware consumers as well as the campaigning activities of leading international NGOs (Zadek et. al., 2003). Consequently, in many industries and for many leading global markets, clustered producers from the South must comply with such global standards or risk losing market access (Nadvi, 2003). In certain sectors, compliance with environmental standards may be important—such as textiles and horticulture, in others labour standards are key—garments, toys and footwear for example, and in others still it is a combination of environmental and social standards that must be met—as in horticulture. In addition to the requirements of specific national and international standards, local clustered producers often need to meet the specific codes of conduct of their individual buyers.

Global standards can imply significant costs to SMEs, and thereby threaten the viability of many small firms (Nadvi, 2003). At the same time, with respect to poverty, the global standards agenda underlines the significance of labour standards and working conditions within clusters. In many clusters, especially incipient clusters and those located in poor rural and urban informal localities, working conditions are poor. Work is undertaken in congested, poorly ventilated and inappropriate spaces, while many workers lack protective clothing and safety equipment. This leaves workers vulnerable to industrial accidents, to risks from fires, and longer-term health risks. Moreover, many workers in such types of clusters lack access to basic labour standards, as defined by the ILO labour conventions. An inability to meet labour standards and health and safety norms not only risk small firm clusters losing access to global markets, it also puts the lives and well-being of workers and producers at risk.

Clusters offer an important potential opportunity for SMEs to meet standards. As noted earlier in this paper, there is evidence that local joint action especially through business associations has helped clustered producers meet environmental and quality standards (see Kennedy, 1999; Nadvi, 1999c). But cluster institutions also provide arenas for local firms to address issues relating to social responsibility and labour standards. This is through the array of local actors that are often present within clusters, from firms to business associations, trade unions and local community groups, which together can help clusters meet ethical norms. It is also through the ways in which local social capital can help strengthen collective initiatives aimed at improving ethical and labour standards. Thus Zadek et. al. (2003) make a strong case for what they describe as corporate responsibility clusters, particularly "partnership clusters", where standards compliance becomes a key element of a cluster's competitive advantage.

[7]For an overview on the leading global standards, see Nadvi and Waltring, 2003.

For policy purposes, compliance with standards can require complex policy networks that bring together a diverse range of public and private stakeholders. This can influence the organization and functioning of cluster development programmes. UNIDO already has some experience of operating in a multi-stakeholder environment, in cluster and non-cluster settings, where different partners bring together specific competencies to the policy agenda. UNIDO (2002) outline a number of partnerships that UNIDO has entered into with private sector bodies to promote innovation and industrial development in specific sectors. What these programmes also underline are the challenges and opportunities that lie with such partnership arrangements

A pro-poor cluster development policy programmes requires both a stronger poverty focus within existing cluster development initiatives, as well as engagement with a new set of concerns. However, to effectively address the wider poverty agenda, cluster development programmes need to bring together a complex array of public and private, local and global actors. It is through such multi-stakeholder initiatives that bring local communities together with local firms and trade unions, that wider agendas of poverty reduction can be more effectively combined with the goals of enhancing cluster competitiveness. This can lead to a virtuous, as opposed to a vicious, cycle of cluster development where firms and workers are able to progress along a high road of development.

This study set out to address an important policy and research agenda, one that constitutes a substantial gap within the cluster literature, on the links between clusters and poverty reduction. We have made significant headway in addressing this gap by pointing to how poverty debates are evolving, and their consequences for clusters, reviewing the cluster evidence from a poverty-led perspective, and formulating the first steps towards a methodology for conducting an impact assessment of clusters on poverty concerns. This is clearly an area where further research is essential. One important aspect of this further research to undertake a series of comparative case studies that provide a focused review of how clustering impacts on poverty—distinguishing between mature clusters (such as the leading cluster case studies from India of the Ludhiana and Tirippur knitwear garment clusters), urban informal clusters (such as the garment clusters of Nairobi) and finally rural clusters (such as the furniture clusters of rural Java). To what extent do the direct and indirect impacts on poverty differ according to these distinct types of clusters? How do cluster institutions operate differently in meeting anti-poverty goals between mature and incipient clusters? What are the implications for policy actors—at the level of the state, of international bodies such as UNIDO, and civil society actors—such as NGOs and trade unions? Another area of further research is to incorporate the poverty and social impact assessment framework into new cluster development programmes, and to use this as a tool to improve cluster development initiatives as part of pro-poor policy. The cluster-poverty nexus is an area where policy intervention can play a significant role, promoting cluster growth and enhancing capabilities and functioning of clustered entrepreneurs and workers.

ANNEX I.
The Italian counterfactual evidence

Table A.1. Growth in employment inside and outside industrial districts by sectors in Italy, 1991-1996

Manufacturing sector	Outside ID			Inside ID		
	1996	1991	Growth (per cent)	1996	1991	Growth (per cent)
Food industry	295 631	318 778	–7.3	150 883	155 278	–2.8
Textiles, clothing	257 170	311 919	–17.6	434 555	510 858	–14.9
Leather and tanning industries	77 928	82 540	–5.6	152 615	161 002	–5.2
Woodworking and wood products	99 538	110 857	–10.2	70 756	75 241	–6.0
Paper, printing, publishing	176 038	196 588	–10.5	84 398	87 255	–3.3
Coke, oil, fuels	22 112	27 053	–18.3	2 035	2 004	1.5
Chemicals and man-made fibres	153 037	182 123	–16.0	56 205	55 255	1.7
Rubber and plastics	104 717	99 097	5.7	93 684	80 340	16.6
Processing of non-metallic minerals	136 975	160 100	–14.4	113 849	116 243	–2.1
Metalworking and metal products	402 805	444 363	–9.4	354 960	340 604	4.2
Mechanical appliances and machinery	284 782	282 473	0.8	269 323	256 467	5.0
Electrical and optical appliances and machinery	307 434	350 500	–12.3	149 581	138 809	7.8
Means of transport	230 956	289 154	–20.1	55 572	60 991	–8.9
Other manufacturing industries	134 163	133 709	0.3	184 075	180 886	1.8
TOTAL	2 683 286	2 989 254	–10.2	2 172 491	2 221 233	–2.2

Table A.2. Growth in salaries inside and outside industrial districts, by sectors and labour type in Italy, 1994-1998
(thousands of Euros and by index numbers)

	Machinery—metal products			Leather—shoes—textiles—garment			Rubber and plastics			Woodworking		
	1994	1996	1998	1994	1996	1998	1994	1996	1998	1994	1996	1998
						(thousands of Euros)						
Blue Collars												
Inside ID	15.736	16.972	18.287	12.765	13.781	14.640	15.123	16.170	17.444	13.389	14.450	15.411
Outside ID	14.981	16.025	16.944	12.578	13.387	14.160	14.795	15.702	16.833	13.204	14.164	14.909
Total	15.140	16.225	17.227	12.641	13.520	14.322	14.812	15.727	16.865	13.235	14.212	14.993
White Collars												
Inside ID	20.936	23.073	24.915	17.522	19.023	20.570	20.722	22.716	24.328	16.903	18.154	19.586
Outside ID	18.864	20.205	21.452	16.112	16.792	17.394	19.244	20.550	22.080	15.693	16.901	18.077
Total	19.300	20.809	22.181	16.763	18.115	19.489	19.322	20.664	22.198	15.897	17.112	18.331
						Indexed, 1994 = 100						
Blue Collars												
Inside ID	100.0	107.9	116.2	100.0	108.0	114.6	100.0	106.9	115.4	100.0	107.9	115.1
Outside ID	100.0	107.0	113.1	100.0	106.8	113.2	100.0	106.2	113.9	100.0	107.3	113.0
Total	100.0	107.1	113.8	100.0	107.2	113.7	100.0	106.2	114.0	100.0	107.4	113.3
White Collars												
Inside ID	100.0	110.2	119.0	100.0	108.8	118.1	100.0	109.6	117.4	100.0	107.4	115.8
Outside ID	100.0	107.1	113.8	100.0	105.0	109.9	100.0	107.0	115.3	100.0	107.7	115.3
Total	100.0	107.8	114.9	100.0	107.5	116.5	100.0	107.2	115.4	100.0	107.7	115.4

Source: INPS—Istituto Nazionale di Previdenza Sociale, Osservatorio sulle imprese: http://www.inps.it/doc/sas_stat/imprese/imprese.html and ISTAT—Istituto Nazionale di Statistica, Censimento Intermedio dell'Industria e dei Servizi: http://cens.istat.it/

ANNEX II.
Impact assessment guidelines

The following are guidelines designed to aid the carrying out of poverty and social impact assessment (IA) within a cluster, once it has been selected for an IA. These guidelines can only give a broad indication of approach and potential methods, as the final design will need to be appropriate to the specific cluster and agreed objectives of the IA.

These guidelines have been developed on the basis that the primary aim of the IA is to be one of "improving" rather than "proving". To be sustainable, IA can only facilitate improving if it becomes embedded within the cluster as part of a learning process. Therefore, from the beginning the approach should be to encourage the participation of poor groups within the cluster. At the same time the research needs to be of sufficient rigour that demonstrable findings are possible, and learning can be generalized from IA across different clusters. There is likely to be an inherent tension between the dual aims of research rigour and local participation and learning. Management of this tension requires sensitivity and patience, as experienced researchers coming from "outside" engage with and gain the confidence of local groups in order that they themselves carry the process forward within the cluster.

The guidelines should be used in association with:

- B. Mikkelsen (1995) Methods for Development Work and Research, A Guide for Practitioners (Sage), which provides detailed exploration of specific research methods.
- Thomas, A., Chataway, J., Wuyts, M. (eds) (1998) Finding Out Fast, Investigative Skills for Policy and Development, Sage.
- Additional sources on tools for impact assessment located on the Enterprise Development Impact Assessment Information Service website (www.enterprise-impact.org.uk)

Research methodology

Deciding the balance of the different research methods is important. Where the emphasis is on the collection of quantitative data then structured interviews based on a questionnaire survey will form the core of the research methods. If the emphasis is on a mix of quantitative and qualitative data, then semi-structured interviews (SSIs) can be used, which contain both closed and open questions. A more qualitative assessment of well-being, would also involve a greater emphasis on the use of Focus Group Discussions (FGDs) with selected poverty groups, to collect and assess more qualitative information. In order to enhance the voice of poorer groups, and integrate their views on their well-being, participatory exercises should also be used in the FGDs. The combination of research methods needs to be balanced in terms of time, resources, and collection of appropriate data and information for analysis, and the skills of the research team undertaking the impact assessment. Box A1 examines the possible roles of different methodologies at different stages of an impact assessment. The ultimate design of the research methods used needs to be done in close consultation with the research team.

Box A.1. Integrated methodologies

Quantitative methods are crucial to ensure credibility, but should be only for relevant (useful) data. Qualitative methods should be used for planning participatory and quantitative parts, such as stakeholder analysis, and key informant interviews. Also essential for cross-checking and further exploration of issues raised by other methods.

Stage of IA	Participatory	Quantitative	Qualitative
Initial	E.g., Identify criteria and indicators; analysis/exploration of hypotheses . . .	E.g., Piloting survey questionnaires	E.g., Planning participatory processes
During	E.g., Cross-checking/ further exploration of issues raised by other methods	Assessment of reliability and representativeness of info gained by other methods	Cross-checking/further exploration of issues raised by other methods
Towards end	E.g., Identify and test possible recommendations	Quantitative indicators integrated into ongoing M&E	Qualitative procedures integrated into M&E

Source: Mayoux, L. (2001/2) Impact Assessment of Fair Trade.

Research phases

The IA will be carried out in phases with each phase linked into the other. Below we outline the key phases, and the research methods that could be drawn on in each of them:

Phase one

From the beginning there should be an overall plan which clarifies the conceptual parameters, aims and objectives of the impact assessment. It should state the time frame, resources available, scope of the study, and expected outputs. The IA Plan for each cluster should be agreed with the commissioning organization (UNIDO). An important part of drawing up an IA plan will be an initial mapping visit to the cluster, to identify what is feasible in its particular context.

Research design and methods:

1. Consultation of background and secondary literature
2. Key informant interviews
3. Consultation meetings/workshop

Phase two

The second phase is to develop a preliminary mapping of potential impact based on existing data and information, which allow a mapping of different types of clusters Such a mapping should help to identify the key poverty nodes and begin to unpack where the poverty groups within the cluster are likely to be found, who the key institutional actors are, identify the likely control group, and collect data and information that will facilitate further development of the research methods for the IA. Box A.2 describes the information such a mapping will be looking for. This complements and helps fill out the simplified Value Chain Map in box 2 of the main text.

Box A.2. Mapping clusters and poverty using a value chain framework

To develop a cluster map, as much secondary data and information as possibly available on the cluster is required. When visiting the cluster, questions need to be posed to various key informants (for example, the secretary or president of the trade association if there is one within the cluster, or a small number of individual firm owners, and/or well informed local residents—such as a journalist, or the government's district officials, etc.) In addition, the researcher/investigator's own perceptions and observations from within the cluster are extremely important, and should be incorporated into the mapping exercises.

The cluster mapping should try to provide the following types of information, from which a simplified map of the cluster can be drawn (similar to the left side of box 2):

Cluster mapping

- How many firms are there in the cluster?
- How are these firms differentiated (for example by size; by types of markets, by range of products)?
- How many subcontractors in the cluster that undertake specific tasks in the cluster?
- How many input suppliers (by types of inputs) within the cluster that address the cluster's demand for inputs, raw materials and machinery?
- Are there traders in the cluster that market the cluster's products? If yes, how many?
- What are the linkages between the firms at different levels of the cluster value chain?
- What information is there on employment for each of the categories of firms, suppliers and subcontractors etc. (size, type, composition of workers)?

Institutional mapping

From this information an institutional map can be drawn, similar to the right side of box 2, with the linkages through to producers and workers indicated.

- What are the main public sector institutions that provide support services (including business services) to the cluster? What types of services are these and how important are they to the cluster's firms?
- What are the main private sector institutions that provide support services (including business services) to the cluster? What types of services are these and how important are they to the cluster's firms?
- Are there trade or business associations within the cluster that represent the interests of the cluster's firms? What types of tasks do these trade associations undertake? How important or effective are such trade bodies felt to be by those in the cluster?

Poverty mapping

When carrying out the cluster mapping, the exercise should seek to gauge what the relative poverty levels are in relation to different groups of producers, entrepreneurs and workers. From this information the nodes on the value chain mapping where poverty is likely to be prevalent can be highlighted, similar to box 5. To do this, obtain as much preliminary information as possible in relation to:

- Levels of profits and revenues of different enterprises
- Levels of income retained by producers and entrepreneurs
- Levels of incomes and wages of own-account workers, wage workers
- Locations in value chain where women, religious and ethnic minorities groups work
- Security of production and/or work
- Personal well-being of entrepreneurs and workers (health, education, literacy)
- Levels of basic needs and goods (housing conditions, access to consumption goods)
- Access to social and information networks
- Access to social protection

Research design and methods

1. Secondary literature and data (academic, official, unofficial, grey material, press cuttings) is particularly important in identifying the institutional, social and economic context of a cluster, and in carrying out the initial mapping. It is also important in acquiring data on certain indicators to verify impact and for triangulation of findings.

2. Observation and "Transept walk" i.e. visiting cluster, meeting and talking to different actors, important for assessing cluster context and mapping. Walk around and visually assess the physical and social environment.

3. Key Informant Interviews—key cluster actors (traders, producers, labour), key cluster institutions (marketing associations, civil society and NGOs engaged in cluster, BDSs); related institutions (government, NGOs, UNIDO/multilateral institutions, academics/researchers). These interviews can be fairly in depth and free flowing, but should be based on a short semi-structured interview schedule (SSI) to ensure certain key questions are asked of all relevant interviewees, and the acquisition of some quantitative data.

4. An "informant tree" can be developed by asking all key informants for other contacts (and if you can use their name). The informant tree should replicate and help build the cluster value chain mapping, the mapping of the actors and institutions, and especially the mapping of the poverty nodes within the cluster.

5. Informal interviews and meetings with poor producers and workers. This will help to identify and disaggregate the poorest groups within each poverty node, and to hear the voices of the poor. The problem is that it will be easier to identify and interview key informants reflecting the "better off" within clusters and poverty nodes, but not so easy to identify and interview the poorest. Ask to talk to some poorer actors e.g. small/micro

enterprises, family labourers, casual workers. Interviews should be fairly free flowing, allowing them to express their concerns. Use local research collaborators (being sensitive to gender, caste and ethnicity) to access and interview them (they are likely to be timid and unforthcoming talking to an "outsider"). Take advice from local collaborators—some questions may be sensitive in one setting, but not in another.

Phase three

The third phase would involve initial design of the IA for that specific cluster. This will include sampling, selection of indicators, decision on baseline, questionnaire and FGD design, choice of participatory tools. An important part of this will be the assembly and training of the core fieldwork team. A core part of the activity in this phase would be piloting and testing out of the methodology and tools, reflection on their suitability and applicability, and finalizing the design of the methods and tools to be used. If it is a one off study, careful attention needs to be given to how the baseline and "recall" is being used as a means of assessing impact. If it is a two stage study a rolling baseline could be used or the first stage could provide the base line data. Careful thought needs to be given to how data collected in the later stage will be measured against it.

Research design and methods

1. *Fieldworker recruitment and training*—this is key to successful implementation of research methods, but complex given you are having to juggle different criteria—knowledge of locality, sector, culture and language; impartiality (actual and perceived); sensitivity; research ability; experience of using qualitative, quantitative and participatory tools. The team needs to reflect these different abilities.

2. *Sampling*—Representative sampling is deemed more rigorous, but is less likely to be feasible in the case of industrial clusters unless there are: *(a)* a robust sampling frame and *(b)* sufficient resources. Purposive sampling can be used based on the poverty mapping, ensuring a spread from each poverty node identified in the mapping, with sufficient disaggregation by gender, caste, religion etc. Sample size will also depend on resources, whether it is a representative or purposive sample, and the type of statistical analysis to be undertaken subsequently.

3. *Selection of control group*—should take place from within the Cluster, or a comparable cluster in the same region, drawing on the mapping described above, but outside the ambit of the CDP. Research methods used with the target group should be the same with the control group. The size of the control group relative to target group needs to be decided, and account should be taken of the fact that there is likely to be a greater rejection rate in terms of participants within the control group.

4. *Focus Group Discussions* (representing each poverty group, 5-8 people per FGD). The initial purpose of FGDs is to select indicators and pilot which participatory tools and which approach works best. In order to select indicators: FGDs should be fairly free flowing and use participatory tools to identify through discussion, mapping and role play which indicators of well-being are important to them. Once indicators have been chosen, they need to be ranked and scored through the use of participatory tools involving

ranking and scoring exercises (e.g. matrix ranking and wheel diagrams). This allows different groups to assess the relative importance of different indicators to them, and to assess impacts on them. To be manageable, the number of indicators assessed needs to be kept narrow. Assessing less indicators will allow more in depth gathering of information and data, and more effective analysis. Different groups (by gender, religion, ethnicity) are likely to select or prioritize different indicators, the study must be flexible enough to accommodate this diversity to show the relative impacts on specific groups. FGDs will also play an important role in the collection of qualitative data in the main part of the IA.

5. *Participatory exercises* (such as matrix rankings, wheel diagrams, venn diagrams, role play). These can play an important role in FGDs, especially when ensuring that the voices of poorer groups are incorporated into the impact assessment. These may be people with lower confidence and literacy who are timid talking in a formal interview setting, but may have more confidence when with their peers. Participatory tools also provide means of ranking and scoring that can be important for qualitative measurement of impact. Box A.3 examines the roles of different possible participatory tools. For more information on participatory approaches and exercises see www.ids.ac.uk/ids/particip/

Box A.3. Different types of participatory tools useful for impact assessment

Tool	Use
Maps	To show the location and types of changes that have occurred within the industrial cluster
Venn diagrams	To show changes in relationships between groups, institutions and actors within cluster
Flow diagrams	To show direct and indicate impacts of changes, and relate them to causes
Diaries	To describe changes in the lives of individuals or groups
Matrix scoring	To compare people's preferences for a set of options or outcomes
Network diagrams	To show changes in the type and degree of contact between actors, services and markets etc.
Photograph	To capture physical changes, e.g. New infrastructure or equipment

Source: Gulijt and Gaventa 1998.

6. *Semi-structured interviews (SSIs),* using an interview schedule comprised of structured and unstructured questions will be a primary means of collecting quantitative data from respondents and will contribute to collection of qualitative information (particularly important in follow-up questions allowing respondents to explain their answers to structured questions). SSI design should be as short and focused as possible. Careful thought needs to be given to the relationship between SSI and FGD schedules (what data should be collected from which). Link the design of both to the final framework that will be used for analysis (i.e. by key indicator selected).

7. *In-depth interviews* with individual respondents (and key informants) can provide a more exploratory means of acquiring individual in-depth information. These can be useful where additional information is required, but can be time consuming. If you choose poverty groups as the key unit of assessment, you will still need to trace the poverty trickle down via individuals in these groups to their households. In order to do this, in addition to producer/worker interviews in FGDs and SSIs, it is possible to carry out additional in depth interviews in the households of a selected sub-sample of individuals (household interviews should include that individual and at least one other member of their household). If required, additional in depth interviews can be carried out within local communities.

The pilot phase will play an important role in exploring whether the right groups for poverty assessment have been selected, how to handle the units of assessment, developing and testing out indicators of assessment, developing and training fieldworkers in the specific research methods to be used. The research methods used can also vary, for example whether to use qualitative or quantitative methods or participatory tools, and in what combination. The pilot phase will play an important role in assessing which works, given the goals and indicators to be assessed in the research, and the experience of the researchers involved. All field workers need training in the research methods being applied, and the pilot phase can play a crucial part in that training. SSIs and FGD schedules should also be piloted and revised as necessary. Investment in training field workers and piloting will pay off later on.

Phase four

This is the central phase, when the full impact assessment will be carried out. It is comprised of two parts *(a)* the fieldwork and *(b)* processing of fieldwork data. The fieldwork will be comprised of carrying out the final sampling, requesting participation of respondents, carrying out interviews and FGDs using participatory tools. Preliminary assessment and processing of the data and information should be carried out as the fieldwork progresses. This will allow reflection and refinement (especially of FGDs, probes, and participatory tools used). Fieldwork notes and reports will also play an important role in later analysis.

Research methods

All research methods and tools tested in the pilot phase and found to be effective will be used in the main fieldwork. But they will now have been crafted to suit the specific IA for this cluster. These are discussed above, and will not be repeated here.

Triangulation—Given the emphasis is on qualitative data collection and analysis, triangulation of information is essential. At the same time it is important to remember that different groups and actors will have different perceptions of their well-being, as well as of others. The fact that there are differences of opinion between, for example women growers and male processors, does not invalidate the perceptions of either group. Triangulation is therefore important as a means of verification that the views expressed reflect those of that particular group (not just one or two dominant individuals within it), but will still allow for and help to understand differences between groups.

Phase five

Full analysis of the data and information can be undertaken once the fieldwork is completed. This is likely to be the role of the core research team. This will include translation and transcribing of interviews or FGDs, entry of data using relevant spreadsheets or software packages, preliminary analysis of data, summary reports and final reports. As a rough estimate it is said that every one day of field work requires two days of processing and analysis.

Research methods and analysis

It could be useful to structure both the SSI/FGD schedules and the final analysis and reporting around the indicators selected and prioritised in the Pilot phase. This would facilitate systematic collection, analysis and reporting of data, and where the data is being collected as a baseline study, provide a blueprint for comparison in later stages of the impact assessment.

Data analysis can be carried out using different computer software packages. For example:

- Qualitative data can be analysed using either Microsoft Word or QSR N5.
- Quantitative data can be carried out using either Excel or SPSS.

Whichever packages are used, both qualitative and quantitative data should be collected and structured in advance in a way that facilitates ease of combined qualitative and quantitative analysis, assessment of impact and presentation of findings. FGD schedules and SSI schedules need to be designed so that the core data collected can be cross analysed (e.g. by designing sections in each that obtain complementary information which can be cross-analysed). At the same time, they must not be too rigid, and must allow for flexible collection of data, and reflect differences between poverty groups participating in the impact assessment.

Fieldwork notes and reports, as well as flip charts from FGDs and other visual tools (e.g. photographs) will play and important part in helping to analyse qualitative data, especially that gathered through the use of participatory tools. Scoring and ranking exercises are particularly important, as they will help to compare the perceptions of well-being amongst different groups.

Summary reports based on processing and initial analysis should be produced according to specific poverty group. Final analysis should compare summary reports from groups, to assess which groups have experienced what positive and negative impacts.

Phase six

The sixth phase is also a crucial part of impact assessment as a learning and improving process. It involves feedback of preliminary results to participants in the research, and other key stakeholders through workshops and feedback sessions. This helps to triangulate findings, but crucially to involve participants in helping to analyse and interpret findings in ways that are relevant to their own experiences, and can contribute to their own learning. This phase also involves the establishment of mechanisms for ongoing monitoring and evaluation, such as the setting up of a local monitoring multi-stakeholder poverty monitoring committee as the basis for ongoing improvement.

Research methods

1. *Workshop Feedback sessions*—with participants in the impact assessment study (for example one person per FGD attending a workshop), brings participants from all poverty groups and nodes being assessed together to participate in final assessment of baseline or overall impact.

2. *Stakeholder Workshops*—with cluster stakeholders provide basis for triangulating findings, and assessing policy proposals for improving impact.

3. *Poverty Monitoring Committees*—could be established from the above workshops to oversee poverty impact improvements on an ongoing basis. These committees would play an important role in informing follow up studies that are part of the impact assessment.

Finally, this phase involves dissemination of the findings to a wider audience, providing the basis for learning across the cluster development programme. This can be done through the publication of final reports and summaries, seminars, videos, and visual displays. If the IA is a one-off Simple Study, the formal project will end at this point. Although hopefully the mechanisms will have been put in place for continued internal poverty monitoring within the cluster.

Phase seven

If the impact assessment is a one-off plus follow-up study, then the second phase will need to be planned drawing on the above research guidelines. If resources are limited this could take the form of an external evaluation of the poverty monitoring procedures put in place in the first phase (based on a limited number following KIs, FGDs and workshops). Here recall will play an important role, and it is likely only limited data form the two phases will be formally comparable. If resources are sufficient, a repeat exercise will be carried out with the target and control group using the same research methodology and analysis as in the first phase. This will provide the basis for more rigorous measurement and comparison of data. Whichever approach is used, it must be remembered that as an improving approach, the key is to enhance the learning process of all stake holders involved, in order to maximize the positive poverty impacts and minimize the negative poverty impacts of the Cluster Development Programme.

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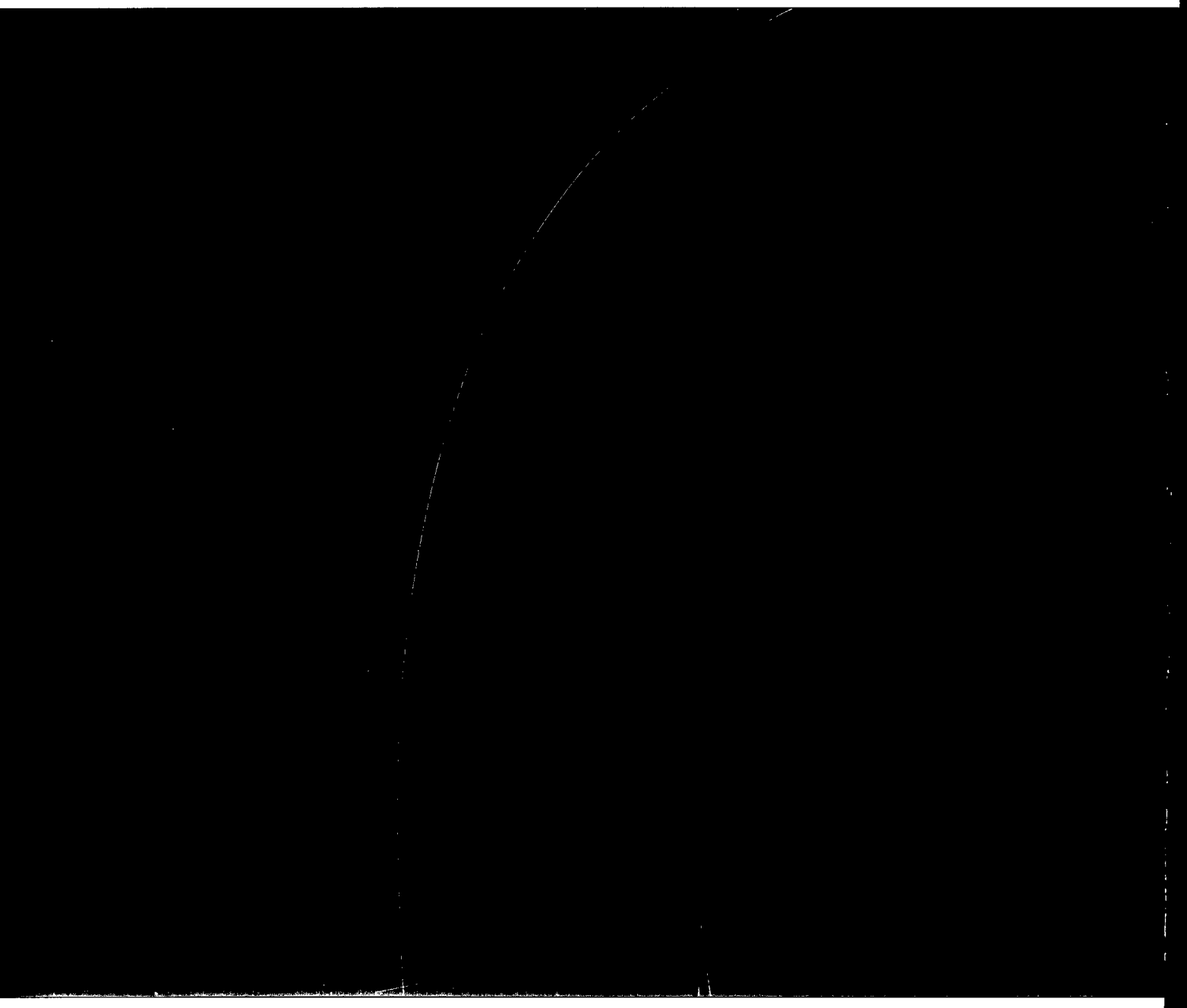

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