

Tanzania Cluster Initiative Project: An Evaluation Report from the Eight Cluster Initiatives

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List of Abbreviations and Acronyms

AVDRC	Asian Vegetable Research and Development Centre
CoET	College of Engineering and Technology
CIs	Cluster Initiatives
FGD	Focus Group Discussion
IMS	Institute of Marine Science
IT	Information Technology
MACEMP	Marine and Coastal Environment Management Project
PADEP	Participatory Agricultural Development and Empowerment project
SIDO	Small Industry Development Organization
SUA	Sokoine University of Agriculture
TTC	Technology Transfer Centre
TCCIA -	Tanzania Chamber of Commerce, Industry and Agriculture
TFDA	Tanzania Food and Drug Authority
TOSCI	Tanzania official Seed Certification Institute
TVSP	Tanzania Vegetable Seed Programme

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Acknowledgement

Being quite a novel idea, at least in Tanzania, in the field of science, technology and innovation policy we must admit that it has not been easy thing to do even though in the end it has proven to be very rewarding. In this context therefore the final output of this cluster initiative evaluation exercise is the result of support and contribution from many institutions, organizations, individuals and their groups. Through such collective endeavour it has been possible for evaluation team to learn group dynamics that drive innovative clusters through interviews, discussions, observations or simply listening.

The above notwithstanding the team would like to take this opportunity to offer special thanks to SIDA whose financial support to Cluster Initiative made possible for ATPS-Tanzania to participate in monitoring and evaluation process. Thanks also to ATPS Secretariat in Nairobi for their administrative and technical support to the whole exercise. Cluster Facilitators have been very forthcoming throughout the process and to them we owe so much. Thanks to them all.

Last but not the least, are the cluster members, the 'foot soldiers' of the initiative and to whom success or failure belong. Mere words are not enough to express how much we have appreciated their unconditional support and cooperation without which the exercise was doomed from the start. It is our hope that this brief final report captures all of their views, feelings and concerns about the project. If not then the fault must be ours and for that we say sorry! Otherwise it has been great working with you all. To those who have managed to get into the second phase and to new comers to the project, Good luck!

About ATPS – Tanzania

To those new in the field of science and technology policy perhaps few words ATPS should suffice. It stands for African Technology Policy Studies, a region-wide network bringing together research scientists, engineers, academics and policymakers interested in policy issues related to development and utilization of science and technology in the African context. Headquartered in Nairobi with national membership in more than 20 countries East, Central and West.

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ABOUT THE AFRICAN TECHNOLOGY POLICY STUDIES NETWORK

The African Technology Policy Studies Network (ATPS) is a multi-disciplinary network of researchers, policy makers, actors in the private sector and other end users interested in generating, promoting and strengthening innovative science and technology policies in Africa. With a regional secretariat in Nairobi, the network operates through national chapters in 23 countries, with an expansion plan to cover the entire sub-Saharan Africa.

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ATPS is supported by a growing number of donors including the International Development Research Centre (IDRC), the Carnegie Corporation of New York, the Rockefeller Foundation, the World Bank, the OPEC Fund, Ford Foundation, Coca-Cola Eastern Africa, the African Development Bank, *InfoDev*, European Union and the Royal Dutch Government.

1. Background to the Project

Tanzania's eight cluster initiatives (CI) project was launched in January 2006. The SIDA-funded project is the first such project to have ever been embarked on in Tanzania, and therefore a trial project that was planned to run for 18 months. The mid term evaluation for the project was done in July and August 2006. This final evaluation builds on the previous evaluation, but also includes a brief overview of the mid-term evaluation as part of the background for each cluster initiative. Since the readers of this report might not had chance to read the mid-term report where the project was fully introduced and the framework for evaluation put in place, background information on the project is provided as well as the framework for evaluation. It is important to note that the framework used for the midterm evaluation consist of only those indicators considered necessary for the early stages of clustering, which in this report it is suggested that this be used during the baseline survey for selecting clusters to participate in the initiatives. The suggested table of indicators that should be used for evaluating clusters at different stages is given in Section six. The table, to a large extent, has been informed by this final evaluation.

The Cluster Initiative project is the outcome of the first Conference on Innovation Systems and Innovative Clusters in Africa held in 2004 in Tanzania. The broad objective of the conference was to establish the status of innovation systems and innovative clusters in Africa. Emanating from the conference was the fact that very little is known about the functioning of innovation systems and innovative clusters in Africa. More specifically, the concept of cluster initiative is hardly known, indicating that there are very few, if any, cluster initiatives taking place in the region. A plan of action to address some of these shortcomings was therefore developed. This included the 18 months clusters initiative pilot project consisting of 8 clusters. The first of the project was launched in January 2006 and ended in July 2007. Table 1 shows the names of participating clusters.

Table 1: The eight participating Cluster Initiatives

Cluster	Location
Metalworking and Engineering Cluster	Morogoro
Mushroom Cluster	Dar es Salaam, Coast and Morogoro regions
Vegetable Seed Cluster	Arusha and Kilimanjaro
Seaweed Cluster	Zanzibar
Tourism and Cultural Heritage Cluster	Bagamoyo
Nutraceuticals Cluster	Dar es Salaam
Sisal Cluster	Tanga
Vegetable and Food Cluster	Morogoro

The project started with training of the cluster facilitators on the cluster initiative concept and identification of “low hanging fruits” by the cluster facilitators, that is, identification of the immediate needs with lowest cost possible. It should however be noted that the initiative was not preceded by a baseline survey of the clusters to inform the selection process, but rather designed to combine the process of study and intervention in a kind of learning-by-doing. In other words, the potential clusters were selected on the basis of some limited information about their clustering characteristics, potential for growth and contribution to poverty reduction/alleviation. The midterm evaluation exercise therefore concentrated more on the initial status of the clusters and possible monitoring indicators at the early stages of clustering, which this report is proposing to act as criteria for further identification of clusters for future initiatives. The major objective of the midterm evaluation was, therefore, to find out whether the CIs were on the right track towards establishing innovative clusters, rather than the impact in economic terms.

The rest of the report is structured as follows: the section that follows provides a brief conceptual framework on cluster development and growth. The aim is to identify some appropriate conceptual tools that can be used in the development of indicators for monitoring and evaluation of the cluster initiatives. Section three briefly describes the developed indicators, while section four is devoted to brief methodological framework. Section five describes the 8 clusters, headways made after the inception and potential for further growth using the developed indicators. Section six provides some overall concluding remarks, and finally section seven proposes framework for short, medium and long term evaluation of clusters.

2. Conceptual Framework

2.1 Definition and Role of Clusters

Clusters are group of firms engaged in similar or related economic activities in a national economy. In most cases they have been defined by two important attributes, namely spatial agglomeration and sectoral dimension. According to Rosenfeld (1997), cited in Le Veen, (1998), an industry cluster is a geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications, and that are faced with common opportunities and threats. According to Porter (1990), clusters are basically of two types: horizontal and vertical. Vertical clusters are made up of firms that are linked through buyer-seller relationships. Horizontal clusters include firms that share common market for the end products, use a common technology or labour force skills or require similar natural resources; they are basically competitors.

However, it must be pointed out that the two categories are not mutually exclusive. In most cases clusters are made up of both horizontal and vertical relationships. Recognition and categorization of clusters in terms of vertical and horizontal is especially important during cluster initiative as it is more challenging to embark on cluster initiative for those clusters that are predominantly horizontal, where need for each other as suppliers and buyers is non existent; and where technology management requires careful balancing between which information to share and which not to with counterparts who are viewed as both collaborators and competitors. As observed during the midterm review, these are some of the challenges that were facing the Morogoro-based metalwork and engineering cluster.

Clusters have, in most cases, been associated with dynamism, innovation and competitiveness, basically because of collective efficiency achieved through joint actions, cooperation and externalities that enable enterprises to overcome many constraints in the area of capital, skills, technology and markets. Other by-products are building a relatively educated labour force, gaining government as well as international support for their role in promoting economic growth (Anderson, et al, 2004; Oyeyinka and McCormick, forthcoming).

Generally clusters are able to survive and succeed, mainly because their ability to upgrade their business activities towards more diversified and sophisticated products and services, and reach a certain scale through building up a supply-production-distribution value chain, acquiring knowledge and technology (both domestic and foreign) and their dissemination and adaptation. When a cluster

grows and achieve economies of scale and visibility, many stakeholders including policy makers are attracted to it. Thus one of the indicators of the well performing cluster is its growth in terms of number of firms and other actors, employment opportunities, output, etc.

2.2 Factors Contributing to Cluster Formation in Africa

Apart from defining and describing clusters, of much interest in cluster evaluation is to understand the natural process of cluster formation. Knowledge of natural cluster formation, especially in terms of conducive environment is very important for embarking on the cluster initiative as it tells a lot on the potential for cluster growth. Thus, this section provides an overview of cluster formation in the African context.

According to some limited information on cluster formation and growth in Africa, the following are the most important factors in the natural cluster formation and growth:

- Natural resource endowment
- Proximity to major market
- Local entrepreneurs with tacit knowledge and basic skills in trading, design or manufacturing. Most have started very simple and gradually expanded; e.g., for metal, the business started with trading and repair but gradually evolved into assembling and manufacturing activities
- Market push, that is, there has to be a demanding market for products and services
- Limited government intervention. Although in some of the clusters governments are responsible for their formation, but it is not a formal conscious effort to create clusters, but rather by-product of enforcement of laws and regulations, such as those pertaining to town planning (Oyeyinka and McCormick, forthcoming)

Taking up the last point above, in most cases, the world over, government interventions in cluster formation are manifested in the following areas: defining sectoral policies, regulation and standard and enforcing them; creating a special agency or organization to promote, coordinate and facilitate development of clusters; establishing various public institutions (such as councils, incubator, technology clusters and institutes) to provide technological and technical support, provide incentives such as tax holidays, special funds, duty free imports, cheap lands; promote alliances and partnership among local firms and with foreign firms; provide infrastructure, road, water, power, warehouse, IT facility, etc. (Anderson, et al, 2004). It goes without saying, therefore, that to a large extent factors that lead to cluster formation in Africa are very much similar to those related to cluster formation elsewhere in the world. This fact gives a sure opportunity to learn from best practices in cluster initiatives elsewhere in the world.

2.3 Steps in Cluster Formation

Many clusters evolve spontaneously and take shape gradually over extended period of time. Four main phases can be identified: (i) creating trust, (ii) forming linkages, (iii) vision or strategic direction and (iv) undertaking actions (Anderson, et al, 2004). The cluster initiative can start at any given phase, and in literature there is no one fit approach to trigger the process. There are however three major alternatives in cluster initiative processes (i) the engineered (ii) the organic (iii) and the re-engineered. Each goes through the same general phases explained above, but with different entry points as shown in Figure 1. It is very important to recognize the phase at which a certain cluster is when embarking on initiative, as this gives a rough picture of the “low hanging” fruits to start with.

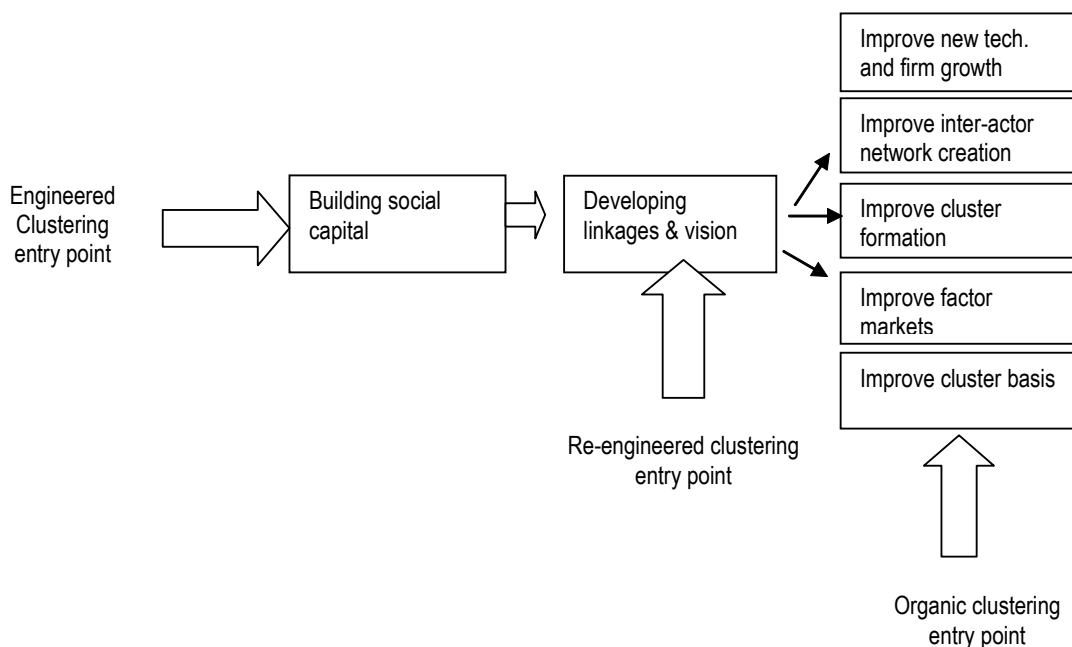


Figure 1: Cluster initiatives different entry points

Source: Adapted from Anderson, T. et al, 2004

The engineered clustering

This is generally a top-down approach cluster initiative and typical for those clusters that are still at the early stage of development. In Europe, policy makers lead and in North America, it is the private individuals who are important. In Africa who leads or rather who can lead? Is it a University? an NGO's? or Development Partners? For the present, and first cluster initiative in Tanzania the University in collaboration with development partners have assumed leadership role. This trend might continue throughout Africa. However, as it can be noted later in this report, government is increasingly becoming interested, and therefore play leading role in the next wave of cluster initiatives.

The initial catalyst of an engineered clustering process could be a given investment opportunity, a dynamic leader, or a regional/national economic crisis (poverty for Africa). Then general steps are as follows: Form or develop existing social capital to anchor the cluster idea; maintain or establish new mechanisms for building trust, formulate a vision and strategy and then undertake action.

The organic clustering

Essentially this is a bottom-up approach whereby clusters initially display spontaneous development towards the establishment of linkages and joint strategy. From this platform of continuous or recurring instance of cooperatives, an innovative cluster appears. Intervention or cluster initiative is targeted at tightening of networks and collaboration, introduction of supportive framework, the acquisition of things such as such new technology, and removal of rigidities or other constraining factors.

The re-engineered clustering

The cluster is said to be re-engineered when an existing cluster (engineered or organically developed) is viewed as having specific competitive significance or potential, but is hindered from progress for some critical reasons. Key linkages might be broken or never formed, or there are other crucial delimiting factors within the cluster itself or its surroundings that are blocking its dynamism. For such reasons the process is started (or re-started) through corrective actions such as establishing, or re-establishing key linkages, dismantling or breaking of adverse rigidities or through the communication of new vision and strategy.

3. Identification and Monitoring Indicators

On the basis of the conceptual framework above, the identification and monitoring indicators are therefore proposed. To a large extent the indicators highlight the potential for cluster initiative development, rather than cluster growth in economic terms, that is, potential for contributing to economic development. Perhaps, this is what is important at this early stage of cluster initiatives.

3.1 Environmental Factors

Geographical proximity – at least two firms collaborating in close proximity; in the same production chain; close to research or higher learning institution; effective or potential demand for the products; proximity to market; natural resource endowment; presence of highly educated entrepreneurs; potential for beneficial externalities. Such environmental factors are especially important to note for cluster initiative at early phase of the cluster formation, that is, the engineered cluster initiative type.

3.2 Cluster Type and Phase at the Point of Intervention

When a certain cluster spontaneously develops to later stages, there is a great potential for initiative to succeed. In addition, it is also much easier to establish linkage to co-located firms, especially if they are in the same production chain (users and suppliers). However, for engineered cluster initiative, especially if the cluster is predominantly horizontal, i.e., competitors, much more efforts are needed for it to succeed.

3.3 Social Capital and Trust

This is measured in terms of awareness of potential mutual benefit among the key cluster actors, common vision, open communication and transparency between the key actors. In addition, broader scope for information sharing which is measured in terms of number of committed actors to the cluster and openness with which common issues are addressed. The existence of associations and clubs of cluster members also signifies a degree of trust and social capital needed to sustain cluster.

3.4 Already Established Linkages

Geographical proximity coupled with involvement in related activities necessitate formation of mutually reinforcing and/or beneficial linkages both back and forward linkages. Development and growth of clusters depends on established linkages not only between members but also with supporting institutions. Therefore, their existence, strengths and weaknesses can be a good indicator for cluster potential. This can be measured in terms of extent of collaborative activities between cluster firms and support organizations.

3.5 Active Participation from the Private Sector

In the context of industry, cluster is economic entity and as such cluster formation is a private endeavor. The experience has shown that if the initiative is strongly supported by the entrepreneurs themselves there is much greater chance for success than if the need for it is felt only by the government and academic officials. Thus, knowing how cluster came into being should provide indication of future prospects, that is, potential for its sustainability.

4. Cluster Identification, Selection and Monitoring

The major objective of cluster initiatives is to instill dynamism in those areas and sectors where the country believes will be of strategic importance for wider socio-economic development and competitiveness. However, since the CIs are only new in an African setting, any clusters that show signs of being organic in nature are likely to be selected to provide lessons, irrespective of whether or not the selection is strategic in terms of socio-economic development and competitiveness. However, the best way to start the process is to conduct formal cluster identification exercise. Unfortunately, it is time consuming and expensive exercise. Procedures for this exercise have been developed for more developed countries, and there is a possibility to learn from this and adapt to conditions obtainable in our own situation. Therefore, for the time being, the following simple and inexpensive, but not necessarily the best method is proposed.

First, is call for proposals by advertising the intent for cluster initiatives development in the media, where the criteria for application are fully described in very simple language and let the facilitators of potential clusters submit fundable proposals. Second; a very quick baseline survey is conducted to establish the initial conditions of clusters that have submitted proposals using the developed indicators, and selecting the best on the basis of quality and number required. This effort can be supplemented by picking those clusters known by the CIs development organ in the country.

However, it must be realized that some of the indicators are more important than others. The modality then is to give maximum differentiated scores to indicators. The scores are then summed up, and the top X number of clusters are selected; where X is the number required for initiative development. Table 2 below further clarifies this point.

Table 2: Proposed Potential Clusters Identification Chart

Cluster name	Cluster phase at the point of intervention	Level of social capital and trust	Level of linkages
Level of private sector participation for growth	Level of environmental factors	Total scores and potential	
weak	Engineered, organic or re-engineered High or low	High, medium or low	Strong or
	Strong or weak	High or low	

5. Final Cluster Evaluation

5.1 Introduction

As earlier mentioned, this final evaluation is further to the mid-term evaluation. The major objective of the final evaluation has been to determine the extent to which the project had desired impact on the performance of the clusters. To a large extent the exercise also used the indicators developed above, but was carried out with open mind to capture any other emerging factor to be used as an indicator. As it can be noted later, two more indicators are added to the list of indicators developed earlier. These are leadership and visibility of clusters. Thus, in addition to discussing methodological framework the section provides detailed description and analysis for each cluster and how it has fared vis-à-vis the indicators. Concluding remarks for each also draw on the mid-term review.

5.2 Methodology

Two major approaches were used to collect information: Survey and Focus Group Discussions (FGD). For those clusters with few members survey was used with visits to all members and talked to them individually. However, for those clusters with many members, random representative sample was developed. Most survey questions revolved around the impact the project had on individual business in regard to the above identified indicators. The choice ranged from no impact at all to great impact. In conducting FGD guiding questions were very general and on the difference the project had made on the performance on participating individual businesses. The above indicators guided the questions, but were also open to note anything extra. Questions on what could have been done differently in the cluster initiative process to achieve maximum impact were also asked. The following questions were asked to engage the group into discussion:

1. What is your shared vision as a cluster?
2. What activities have you undertaken as a cluster ever since January 2006 when the program started?
3. How relevant are these cluster-based activities to your individual business, and your collective vision?
4. What can you say about the impact of the program in regard to the following major indicators of innovative cluster
 - linkage and collaboration among yourselves, and other important organizations
 - trust among your selves.

5. Generally, what can you say about the impact of the program on your individual business- Just anything positive
6. How do you think in future the cluster initiatives can be approached for maximum positive impact?

5.3 Metalwork and Engineering Cluster

Background

The cluster is located in Morogoro municipality, comprising of 14 firms working in the metalwork and engineering sector, and 27 other micro enterprises working on mostly charcoal stoves. In terms of spatial proximity, i.e. distance from one firm to the other, the metal working firms exhibit typical characteristics of any other township in Tanzania, where the firms are scattered in different parts of the town. The charcoal stove enterprises, however, exhibit unique characteristics in the sense that they are very close together, concentrating along the main road and close to the major market in Morogoro. The cluster lack long term involvement of the research or higher learning institution, but most of the members, especially the metal work group, have relatively higher education level compared to other clusters. This is a very important strength of this cluster.

The midterm evaluation indicated that this is an engineered type of cluster initiative. There was very little cooperation, linkage and trust among cluster members, especially between the larger firms and the smaller ones. There was very little understanding of the concept of cluster initiatives, and what benefit it can offer to individual businesses.

In addition, while the number of entrepreneurs increased in charcoal stove sub-cluster, it was not easy to predict the direction of growth of the metal work sub-cluster; whether it will be in terms of growth of individual firms or number of firms in the cluster. This is still pending issue even with this final evaluation. The direction of growth of this cluster and how it is going to be different from the same sector in other towns and cities in Tanzania is not known, and difficult to predict.

Evaluation Findings

Positive Impacts

The survey result indicated that the project had moderate impact on all of the identified indicators. According to FGD the following are some of the positive impacts of the project:

Linkage

There has been an improved cooperation between the cluster members, especially between the small and larger firms. "Before the project it was unthinkable to approach the larger firms for help", explained one of the smaller entrepreneurs. Generally the incidence of cooperation such as joint purchases of inputs and job sharing in the cases where orders go beyond individual capacity has increased among cluster members. There has also been some technology transfer, in terms of training as a result of the project, and sharing of information among the cluster members.

Visibility

The cluster project has attracted the attention of the government, especially local, to their business. Others thought being in the cluster has made the individual businesses being known more in the community. The visibility has been facilitated by the media. In addition according to others, the project has made the registration of business much easier.

Shortcomings

The group, however, mentioned the following shortcomings that need to be addressed:

- Some of the very useful machinery in metal products production such as the forging machine, electroplating and heat treatment facilities are absent in all cluster firms.
- Raw materials are very expensive.
- Traveling back and forth among cluster members is costly as firms are not located in close proximity.
- Interest rate for SIDO's loan is very high.
- Most members would like to go for in-service further technical training but can not afford.

Suggestions from cluster members

The group made the following suggestions to alleviate some of the above-mentioned problems:

- The government should quickly allocate appropriate common areas for the cluster members.
- Credit facilities should be made easy and available. For example, the cluster has to find a way to be a guarantor of loans to cluster members.
- SIDO should re-asses their priorities according to the reasons it was established in the first place.
- The export of scrap iron should be banned to avail raw materials for domestic firms at a cheaper price.

Concluding Remarks

Taking into account the state of this cluster before the project, the above findings surely are very positive steps towards success. During the midterm review it was found out that cluster members had very little trust among themselves. The concept of cluster had not yet sunk in the minds of the members; and there was very little indication of linkage among the cluster members, especially between the larger and smaller entrepreneurs. The current positive outcome seems to be the result of the committed cluster leaders, who constantly sought for modalities to improve the trust and cooperation among cluster members.

5.4 Eastern Region Mushroom Cluster**Background**

The cluster covers the whole regions of Morogoro, Dare salaam and Coast. It consists of mushroom farmers, spawn makers, wild mushroom pickers and processors. The activities are not yet located in any special area, but done in a household setting as backyard initiatives. Important environmental factors are huge natural resource endowment, potential market, both internal and export, presence

of stakeholders association, and close involvement of the higher learning institutions such as the University of Dar es Salaam and Sokoine University of Agriculture (SUA).

The midterm evaluation clearly indicated that members see the benefits of collective efficiency as against individual effort. This quality is so much demonstrated in this cluster more than any other. There could be two major reasons for this. First mushroom production is so much knowledge intensive. Somebody has to know the right spawns the right substrates, right temperature, etc. A small mistake ruins everything; people therefore need each other for good practices. Another possible reason as explained by the farmers is that individual farmers can only produce a small amount of mushrooms, while the major customers require mushrooms in bulk. There is therefore a need for several farmers to join forces to serve a certain common market. Another important contribution to the high level of social capital might have come from the existence of mushroom growers association. These people have been meeting and discussing issues of common interest long before the cluster initiative.

Evaluation Findings

Positive Impacts

This cluster has very visible achievements in the 18 months of the pilot project. Following are some of the positive impacts as mentioned by FGDs.

Visibility

The project made mushroom producers known and hence easy access to both financial and material support. Example is the mushroom collection center accessed from the local government, and funds for training and production of the mushroom growers' manual provided by the SME Competitiveness facility.

Improved Trust and Linkage

Farmers got to know more about each other; not only in mushroom business, but even in social life. In regard to this, one of the cluster members had the following to say: "Not only has our business relations improved, but also our social life. It was not common for me to talk to some of the cluster members, not even to exchange greetings; but now we are buddies, and I feel free to confront them with whatsoever problem I have, whether social or business". The project also improved flow of information and cooperation among cluster members as result members has gained knowledge on better methodologies on mushroom farming and collection of wild mushroom. Through linkage and learning, the banana farmers have also gained more income by discovering that banana leaves are used in mushroom farming.

Product Diversification

The cluster has lead to an increased diversification in mushroom products. Examples are mushroom cakes and other snacks. This has been possible as a result of training and information sharing among cluster members.

Increased Number of mushroom farmers

The Cluster has motivated more people to go into mushroom business. More importantly, according to FGD, youths have been kept busy with mushroom farming and away from social evils.

Shortcomings

This cluster had very little to say when it came to shortcomings. They complained of two major things: the wide area covered by the cluster, which made communication and meetings to be very expensive. The complaint was made by the cluster leaders. The second thing they complained about is very expensive technology from the Technology Transfer Center of the University of Dar es Salaam, which according to the members, was supposed to be affordable as University is part of the cluster. They complained that the technology is more expensive and not necessarily of higher quality compared to prices and quality of the same technology from other sources within the country.

Suggestions from cluster members

The members of the cluster had a number of suggestions on how cluster initiative can be approached so as to attain maximum positive impact. These are as follows;

- The Technology Transfer Centre at the University of Dar es Salaam should lower the prices of the machines they produce so that they can be affordable.
- The Government should put in place policies that can improve the environment for cluster's initiative.
- The Cluster should get a sustainable source of funding; example is loans with reduced interest rates, and subsidies.
- Cluster members can also initiate a revolving fund

Concluding Remarks

This cluster was found to be in the right track even during the midterm survey. It is doing even better now, especially if they can work on the problem of funding and spatial proximity, i.e. dividing the cluster into 3 sub-clusters, with leadership put in place for each of the three sub-clusters.

5.5 Morogoro Food Processing Cluster**Background**

Morogoro region is famed for its weather conducive for agricultural production supplying markets such as Dar es Salaam with plenty of vegetables and fruits. The cluster initiative deals with processing of such vegetables and fruits into forms easier for preservation and/or into new and more valuable products. It brings together individuals and groups involved in the processing of vegetables and fruits. These also include drying and packaging and production of such products as beer and wine from agricultural products such as banana. In essence it is a natural resource based cluster.

The midterm-evaluation survey indicated that the cluster has developed linkage with a number of actors; indeed more than any other cluster initiative in the project. These are Sokoine University of Agriculture; College of Engineering and Technology, University of Dar es Salaam; Small Industries

Development Organization (SIDO); Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA) and government authorities both local and central including Tanzania Food and Drug Authority (TDFA). In addition, the cluster had also developed a common market outlet.

Evaluation Findings

Positive Impacts

Through FGD and interviews with stakeholders the following positive results has been identified:

Visibility

The cluster is now better known to both the customers and government officials. As a result there is more sale and assistance from the local government. The example is the premise for joint market outlet which had already been attained even before the midterm evaluation.

Linkage and Information Sharing

The project has created forum for exchanging of ideas, as a result, according to FGD, there is improvement in product quality for most members. As earlier noted, the cluster has also established a joint market outlet, which according to most members, has enhanced their sales. They also organize a joint exhibition when ever the chance presents itself.

Collective Efficiency

The cluster has initiated joint purchase of raw materials, which according to cluster members, has radically reduced cost for purchase of inputs.

Shortcomings

- There is a problem on the quality control and differentiated trademark. In regard to this, the practice has been that SIDO makes labels for all small food processors. However, in most cases, the products from some producers do not parallel the nice labels prepared by SIDO. These sub-standard products had tended to ruin the market for all the products, including those from entrepreneurs who have invested in quality improvement. In this regard the cluster needs different labels and trademark that is unique to the cluster. The members are currently working on this.
- Lack of capital: Just like other clusters, this has been a major stumbling block.
- There is the problem of destructive competition-too many small entrepreneurs producing the same products for the same market.
- The members also complained that entrepreneurial courses offered to them are not helpful-they are not enriched with adequate skills.

Suggestion from cluster members

- Individual members should improve their products' quality so as to immediately improve the image of the cluster and a strong industry later
- The members also suggested for the cluster to have a joint center/facility for processing the products

- The members proposed the cluster to have its own brand

Concluding Remarks

This cluster has shown very little improvement ever since midterm evaluation. This could be because the cluster had already made great headways by the midterm evaluation time. However given the appropriate environmental factors, spirits of the members and current plans, there is little doubt that the cluster will continue to grow in a sustainable manner.

5.6 Tourism and Cultural Heritage Cluster

Background

The Bagamoyo-based Tourism and Cultural Heritage cluster has historically evolved over time and in the process a number of activities have emerged to cater for the fast growing industry. Organizationally, the cluster is comprised of the following sub-clusters: Hotels; Transport operators; Tour guide operators; Restaurant and bars; Traditional healers and herbalists; Guest houses and Lodges; Food vendors and processors; Handcrafts producers and sellers; and Theatre and sculpture

From its inception this Cluster had trappings of becoming a successful initiative in terms of its potential for development and growth. Geographical proximity, interrelated chain of activities, both horizontal and vertical, motivated membership and able leadership have been its strong points.

The midterm evaluation indicated that the social capital is very high and so is mutual trust among cluster members. As expressed by one of the hoteliers, "We have to also be engaged on tourism advertisement to do good business, but thanks to cluster initiative, because this role can now be left to it". In general, all members were over motivated and this raises the possibility of demoralization if the existing social capital and trust is not properly directed and/or exploited.

The cluster also can potentially enjoy the beneficial externalities because of the co-existence of the sub-clusters. For instance an improvement of the tourist sites means inflow of more tourists; meaning it is good business for the hoteliers and other sub-clusters. As a result, there is huge interest in sharing of tourist information among sub-clusters, especially information regarding services and tourist sites. The existence of Bagamoyo College of Arts and its representation in the cluster is another strong point. This final evaluation of the cluster reveals the following developments.

Positive Impacts

The cluster initiative has produced some visible positive impacts, mostly in short term, which can be the basis for future development and growth. They include the following:

Visibility

Even though tangible economic gains from the observed linkage and trust are less visible at this point in time, social and political capital cultivated so far promises to be of great value in the near future.

Solidarity and commitment

Cluster members demonstrate high degree of solidarity and commitment towards its development. This is reflected in their participation in cluster activities such as meetings, exhibitions and cash contributions to open a bank account. In long run such 'social capital' is critical to cluster sustainability.

Conservation awareness

Sustainability of the cluster depends on continued flow of local and foreign tourists which in turn is the function of sustained preservation of beaches, historical sites and cultural heritage. Cluster formation has been very instrumental in bringing conservation and preservation issues to the fore of the tourist industry.

Shortcomings

The cluster is experiencing a number of problems that are likely to undermine achievements already made. These are as follows:

Missed goals/targets

Some important goals/targets the cluster set to achieve have been missed. Finding premise is one of them. So far cluster and sub-clusters' activities are scattered all over often unknown to both local residents and visiting tourists. Thus finding a permanent premise to conduct business was a top priority. Efforts to acquire premise for displays, shops and office accommodation has proven elusive target. At one point the cluster was accommodated at TCCIA's building but has since been forced to vacate for failure to pay rent. To raise public awareness of cluster existence and functions it was envisaged that promotional campaigns would be undertaken using Bagamoyo-based Cultural College through songs and cultural performances. This is still pending issue that need to be addressed by stakeholders.

Markets and marketing

Perhaps emerging from above, some sub-clusters are finding it difficult to find markets for their products especially handicrafts and traditional foodstuffs. Sub-clusters belonging to women members are most impacted by this problem.

Facilitation

From focus group discussion with cluster members it became clear that facilitation process has emerged as a serious problem requiring appropriate intervention. The issue at stake is the domineering role of the Facilitator and undermining of cluster leadership. As a result decision making has become more complicated especially as far as financial matters are concerned.

Suggestions by cluster members

The future sustainability of the cluster is the function of a number of developments to address some of observed challenges/problems. According to members they include the following:

Resource mobilization

Shortage of financial resources is a serious constraint to cluster's sustainable development and growth. Indeed, some of the shortcomings such as premise and office space can be attributed to it. Additional funding from alternative sources such as local authorities, financial/banking institutions will be needed to sustain cluster's activities. The cluster leadership has been in contact with some banks to explore the possibility of financial support in the form of soft loans. The situation calls for sustained lobbying and advocacy drive.

Enhanced autonomy

There is urgent need to rethink the role of Facilitator in cluster development and growth. More autonomy is needed to allow cluster members to make own decisions and live up to them. Autonomy is needed in resource mobilization and deployment to help lessen friction between Facilitator(s) and members.

Concluding remarks

The cluster has made little headway ever since midterm evaluation; this is probably because of the above constraints; especially the facilitation process. However, the evaluation team holds a strong view that despite the above problems the cluster has a very huge potential for growth if well facilitated.

5.7 Seaweed Cluster**Background**

Seaweed farming is a resource-based venture whereby the ocean is a major resource. The farming was introduced in Zanzibar during the late 1980s after researches had indicated its potential as cash crop. Since then the number of farmers has increased from a handful in the early 1990s to about 100 to date. It is a collection of small scale farmers, majority of them being women, engaged in common activities of seaweed farming and soap making, and traders who buy and export sea weeds. At the moment the cluster activities are centered in two villages: Bulelwo and Kidoti both in Unguja Island. Just like the mushroom cluster most important environmental factors for this cluster is huge natural resource endowment, potential for value adding activities and product diversification. With proper marketing there is also huge market potential, both local and export. Another important strength of the cluster is close involvement of the higher learning institution, the Zanzibar-based Institute of Marine Sciences, University of Dar es Salaam.

The midterm evaluation indicated that there are strong established linkages between farmers, researchers at the IMS and trading firms. The traders also supply farmers with inputs on credits. However, these positive developments notwithstanding, the relationship between traders and farmers could be of the subordinate nature, as farmers depend so much on traders for inputs; and to a large extent the traders determine the price. Otherwise and most importantly, the review noted that crucial assets for cluster growth such as trust and linkage, to a large extent are in place, and that what remains is sustained development of the cluster in terms of value adding activities and diversification. The following are some of the positive impacts Seaweed Cluster:

Positive impacts

Enhanced Visibility

Activities of the Seaweed Cluster have attracted attention of the government and other institutions/agencies dealing with agricultural development and environmental conservation. Participatory Agricultural Development and Empowerment Project (PADEP), SUCCESS project and Marine and Coastal Environment Management Project (MACEMP) have all promised to provide support in terms of finances and/or equipment. Such support is very crucial to cluster sustainability.

Development of New Techniques

Even though seaweed farming has been in existence since the late 1980s some of the most valued species have proven difficult to farm and disappeared in some places. Seaweed Cluster has facilitated development of new farming techniques, floating rafts ("vichanja") that have allowed for the re-introduction of such species hence enhanced earnings for participating cluster members.

Product diversification

Traditionally, seaweeds are farmed, harvested, dried and sold to traders ready for export. One of positive achievements of the cluster is ongoing efforts to add value by diversifying its local use. Though still work-in-progress, the proposed products include seaweed herbal soap products and seaweed snacks. This has the potential of raising the income of seaweed farmers, and therefore further contributes to poverty reduction.

Quality improvement

There is evidence of improved quality of seaweed. It stems from the introduction of appropriate drying techniques. Before the initiative farmers used to dry seaweeds by spreading them on the ground to be sun-dried and in the process collected dirt. Through the cluster farmers have now been introduced to new drying techniques whereby seaweed contamination with dirt is avoided. This has potential of raising prices. Floating raft techniques is also contributing to quality improvement.

Environmental conservation

Floating raft technique is considered as being more environment-friendly compared to traditional farming techniques undertaken in shallow waters close to shore. Out of environmental concerns emanating from seaweed farming, MACEMP is considering popularizing this technique to other seaweed farming areas as part of environment conservation measures.

Women empowerment

There is evidence of women being empowered as the result of the cluster development. For example, in one sub-cluster women owns premise, run a nursery/kindergarten and operate a bank account. However, with introduction of deep-water rafting technique and farming of more valued species men are being 'recruited' to render support.

Shortcomings

Discussion with cluster members revealed some inherent difficulties likely to impact the future development and/sustainability. The following are some of the emerging issues:

Working capital

Seaweed farming, especially of floating-raft type, is resource intensive process that requires substantive investment in equipment and supplies. In the past traders used to supply farmers with inputs on the condition that the produce is sold to them. However, with deep water farming costs are relatively high and traders are unwilling to invest.

Technology transfer

The envisaged product diversification is faced with lack of appropriate technological knowledge/skills. This is likely to hold back the development process despite ongoing support from research and higher learning institutions.

Suggestions by cluster members*Resource mobilization*

Engaging other stakeholders to get them to support their activities is paramount to its sustainability. As noted above PADEP, MACEMP and SUCCESS projects have already promised support including finance and equipment. However, more efforts will be needed to ensure adequate working capital to sustain operations.

Technology transfer

Contact has already established with research institutions to provide technical assistance on development of appropriate machines/equipment and processing technologies including seaweed dryers. In addition, training should be provided to members to operate new machines/technologies.

Market development

Though development of new markets for new products is crucial to development and growth of the cluster there is no immediate solution to the problem. Therefore, resources will be needed for more aggressive marketing of the current and envisaged products.

5.6 Nutraceuticals and Functional Food Cluster**Background**

The cluster initiative deals with production and processing of food products known to provide nutrition (supplements) and have some medicinal values. The raw materials include soybeans, moringa, aloe vera and mushrooms. The main objective of the cluster is to raise public awareness on functional foods and facilitate production of quality and safe products.

This cluster could not be included in the midterm evaluation as it was not possible to hold discussion with members because it was not clear then who will be included in the cluster. However, the cluster

has made a good progress since mid-term evaluation exercise. Cluster leadership is already in place and the launching accomplished. Initially the cluster had identified more than 60 potential members but so far there are about 35 active members. The following are some specific positive impacts:

Positive impact

Women empowerment

Over 90 percent of cluster members are women entrepreneurs engaged in small-scale food processing. There is no doubt that the cluster is empowering women in their respective households and communities.

Public awareness

Cluster members through their participation in trade shows have popularized their products and as the result the general public is becoming increasingly aware of the nutritional values of their products.

Linkage and learning

Food processing is knowledge-intensive and most cluster members have acquired skills through learning-by-doing as participation in the cluster meetings have provided opportunity for the members to share knowledge and production techniques.

Shortcomings

Working capital

As with other clusters, financing appear to be stumbling block towards cluster's development and growth. So far most members are engaged in kitchen-type, small-scale processing that put constraints on the amount that can be produced. Capital shortage is affecting acquisition of technology and processing facilities.

Standards/quality assurance

It is a serious problem with far-reaching consequences on market penetration and product acceptability by consumers. Processing techniques are as varied as packaging of the products with no known common standards.

Markets and marketing

Potential market for the emerging industry is huge indeed even though underdeveloped. There are no common outlets for most products. Concerted efforts are needed to further cultivate and sustain markets for products being developed and produced.

Competition

Even though the industry is young and growing fast, it is also characterized by varying levels of capital investments and experience. There are those few with substantial investment, long experience and name recognition in the market. However, most cluster members are new with small capital investment hence are faced with competition from large and more experienced producers.

Suggestions by cluster members

Common processing facilities

To address the problem of working capital and standards/quality of products, members are engaged in resource mobilization to raise funds. They have already approached municipal authorities for subsidized loan so that they can be invested in acquisition of machinery/equipment that can be used by all members. The funds will also be used to acquire or rent premise for common use and also for collective acquisition of packaging materials.

Rationalization through training

To address the problem of standards and quality attributed to lack of appropriate processing knowledge and skills cluster leadership has embarked on training programme for members. In such training, members are introduced to 'advanced' processing techniques and variety of products.

Common market outlets

Cluster members are envisaging common market outlets as way of not only popularizing their products, but also facing competition from large producers who are yet to join the cluster.

Concluding remarks

Potential market for this industry is huge; and as such it is one of the sure ways of empowering women economically. Major challenges are skill development in advanced processing, quality control and finance. Once these problems are addressed, the cluster can sustain ably and gradually develop to capture even the export markets.

5.9 Sisal Cluster

Background

This cluster is basically made up of small scale sisal farmers and sisal processors, mainly one private company named Katani Limited, which has a monopoly of buying sisal from the farmers following special arrangements. Although there is no active communication, both the farmers and Katani limited are connected to research institutions. Where farmers are linked to nearby Mlingano Agricultural R&D Institute, Katani limited has some linkage with the University of Dar es Salaam, College of Engineering and Technology (CoET) in the development of new and value adding activities to sisal. Currently sisal is processed mainly to produce fiber. Other potential products include acids, sugar, alcohol and bio-fuels.

The major idea behind this cluster initiative, according to the facilitator, is to embark on research, development and commercialization of new products from sisal, which will expand market and income of small sisal farmers. Accordingly, the diversification of products from sisal and entrance of new processors is expected to alleviate the problem emanating from the monopolistic behaviour of Katani Limited.

Midterm evaluation indicated that there is serious lack of social capital and trust, first among farmers themselves and second, between farmers and Katani Limited. This is evident from the fact that farmers could not trust any one of them to represent them to witness the field test to establish price for their produce at the Katani Limited's site. It was also noted that there exist strong linkages between farmers and Katani Limited as a sole buyer of sisal. The linkage is however full of subordination and suspicion, and therefore not healthy. The final evaluation indicates the following positive impacts and shortcomings:

Positive Impacts

Public awareness

The cluster has been able to raise public awareness on the potential benefits obtainable from sisal growers in the event diversification into new products obtainable from sisal is embarked on. Stakeholders are now better informed about the possibilities of diversifying from the traditional products that are increasingly less paying.

Technology dissemination

Through the cluster it has been possible to disseminate knowledge on the available technologies that can be exploited as the way of adding value to sisal sector. However, their application is subject to further investments in research and development and subsequent commercialization.

Shortcomings

Funding

Survival of the cluster is the function of availability of funds to take ideas from the design stage to implementation. This is in line with the long-term goal of setting up industrial plant needed to transform sisal by-products, currently being discarded, into something of value. At this point in time such funding is not forthcoming. This is serious constraint to its sustainability.

Social capital

The current arrangement is such that there are three main actors: sisal growers responsible for cultivating; Katani Ltd, responsible for facilitating production, buying and processing of sisal into fiber; and R&D institutions including University of Dar es Salaam. On the one hand, growers view cluster as purely academic exercise with little possibility of goals being realized. On the other hand, there exist mistrust between growers and the company. The company has control not only over financial resources but also key decision making process including deciding how much to pay for the sisal. Under such circumstances sustaining cooperation can be very difficult.

Suggestions by cluster members

Investments in R&D

This is knowledge-intensive enterprise and as such more investment in research and development is needed to make product diversification to be more attractive to current and potential investors. Concerted efforts are needed to diversify funding sources, public and private, internal and external.

However, this is only possible if government and development partners are committed to the idea of diversification of products from sisal crop.

Concluding remarks

The idea behind this cluster initiative and its potential for growth hinges on the investment in value adding activities that include expensive process of R&D and commercialization. Unless adequate financial resource are mobilized to conduct R&D and commercialization of these novel products from sisal, potential for growth and success of this cluster is very much doubtful.

5.10 Vegetable Seed Cluster

Background

The cluster initiative, according to the Facilitators, incorporates Arusha and Kilimanjaro regions, covering the districts of Arumeru (Arusha), Hai and Moshi rural (Kilimanjaro). The region is blessed with agro ecological zone well suited for agricultural production. It has equitable climate virtually throughout the year. The region is also a home for more than 90 percent of Tanzania's seed companies (both local and foreign). The region is also blessed with world class vegetable seeds research institutes, including World Center for Vegetable seeds, Regional Center for Africa.

It must also be born in mind that over 80 percent of the vegetable seeds in the country are imported. In this regard, the following questions are worth being asked: can't Tanzania produce its own seeds, given the available infrastructure? What does it take to do so? Could cluster initiative be an answer? The questions to a large extent motivated the inclusion of the Arusha vegetable seed cluster as part of the pilot project. Following is a description of the vegetable seed cluster actors/stakeholders.

Training and Research Organizations

1. AVRDC: This is part of the world vegetable seed center. It is a regional centre for Africa that was established in 1992. It is mandated to conduct vegetable research, training, and information services for the benefit of national research programmes in Africa. The center trains farmers in vegetable growing and produces foundation seeds for the seed companies. The center is very close to Tengeru and seed companies. The center is some of the rare location advantage for the Arusha seed cluster initiative.
2. HORT – TENGERU: Tengeru Horticultural Research Institute, a public institution for horticultural research, farmers training, producer of vegetable foundation seed for seed companies for multiplication. The institute work very closely with the private company, Alpha Seed Company. The relationship between Alpha Seed and Hort-Tengeru is, in Tanzania, regarded as good example of public private partnership (PPP)
3. TVSP: Tanzania Vegetable Seed Program, a private initiative which is funded by Multiflowers, Royal Sluis vegetable trade mark, involved in testing and introduction of improved vegetable varieties to help raise farmers' incomes through high yielding and quality economic produce.

Seed Companies

1. Alpha Seed Company Ltd.: An indigenous seed company involved in vegetable seed production and marketing. The Company has been successful in organizing women groups who hire land and produce for Alpha Seed quality vegetable seed. Alpha Seed works in Public Private Partnership (PPP) spirit with Horticultural Tengeru by using its seed processing facilities for cleaning and packing the seed. Also work in close collaboration with AVRDC by obtaining screened or fresh basic seed for multiplication on researched materials.

2. East Africa Seed Company, Multiflower, Suba Agro-tech Company Ltd, and Kibo Seed Company Ltd.: These are seed companies which imports and also produce and pack locally produced vegetable seed. They use various small holder farmers to produce the seed. They get their planting materials from Horti- Tengeru and AVDRDC

3. Arusha Foundation Seed Farm, This is a public organization that deals with obtaining breeder seed from research station, multiplies it to foundation seed. Then sell these to seed companies who use it for multiplication again to get Certified Seed which is packed and sold to farmers.

4. Vegetable companies and fruit processing companies

Other organizations

1. Tanzania Official Seed Certification Institute (TOSCI), that deals with certification of seeds through field inspections and laboratory testings. All seed must be checked by them before marketing. There are 3 stations – Morogoro, as Headquarters and branches in Tengeru and Njombe.

2. Tanzania Seed Trade Association (TASTA). This is basically an association for the seed companies.

The midterm-evaluation cum baseline survey indicated that cluster exhibit an appreciable degree of linkages among companies and strong linkage between companies and research institutes, and it is within “re-engineered cluster initiative”. The cluster contains all the good characteristics of a regional, potentially innovative cluster.

Evaluation Findings

It was not possible to do a formal evaluation because up to now the number of the cluster members is not known; and very little has been done in relation to planned activities. Only one meeting, which one of the writers of this report attended, was so far held. The major objective of the meeting was to popularize the concept of cluster initiative to potential members-actual members were to be known later!

Since the leadership did not had names of the cluster members, and very little was done to implement the action plan, even the midterm evaluation was done following the naturally existing linkages and cooperation among actors in sector. The findings were that this is an organically evolving innovative regional cluster. We would therefore wish to suggest, a renewed effort to re-initiate this cluster be considered with carefully selected facilitator.

6. Summary and Overall Concluding Remarks

The report has categorized cluster initiatives into three major categories: the organic, engineered and re-engineered cluster initiatives. Being in the early stages of development, most of the clusters have been categorized as engineered. One of the very potential organic clusters is the Arusha Vegetable Seed Cluster. This cluster has all the elements of organically evolving cluster, which, to a large extent only needed strengthening of existing linkages and trust. However, very unfortunately, the cluster has made very little headway during the 18 months of the project. This problem to a large extent can be asserted to weak facilitation.

Another cluster with weak facilitation is the Bagamoyo Tourism and Cultural Heritage cluster. The role of the facilitator in the development of the cluster initiatives is further evidenced by the Morogoro metalwork and engineering cluster. During mid-term review the cluster showed all the signs of mistrust and lack of cooperation. The findings of this final evaluation however, indicated a total reversal of this behaviour. This to a large extent can be asserted to the effort made by the facilitator to popularize the concept of a cluster, and how it can help individual entrepreneurs. As a result, we have included *facilitation and leadership* in the list of the indicators earlier identified. Another important indicator added to the list is *visibility* of a cluster.

Generally we can say that during the 18 months of implementation clusters have shown positive development, especially as far as the early indicators are concerned. In the longer time perspective however, the issues regarding financing and opening up of new markets could be a major stumbling block if it is not be addressed earliest possible. The financial problem is acute for those R&D intensive cluster initiatives such as sisal. It is the opinion of the writers of this report that given the fact that these clusters are coordinated from a center of excellence in research, such as the University, one would expect such R&D intensive clusters would have been given an upper hand. Unfortunately this is currently not the case, largely because of the financial constraints. But for how long would we be running away from the commercialization of research outputs? How do we justify then spending on R&D?

7. Framework for Performance Measurement

In Table 3 below we are introducing a framework that can be used to measure performance at distinct stages of cluster development. The development of this framework, to a large extent has been informed by the current evaluation process, and some information from the literature, especially at the later stages of cluster development.

Table 3: Performance Indicators

Kenya	Time Frame	Performance Indicators	Measurement Approaches
Strength and acceptability of cluster Facilitators by the cluster members	6	Number of cluster meetings organized; implementation of planned activities, extent of sharing of cluster vision, and views of members.	Discussion with key cluster members, focus group
1.Visibility ¹	2 years	Further Support from government and other development partners	Interview with cluster
2.Established Linkages and	2-3 years	Joint activities	Survey and Focus Group Discussion
3.Innovation	2-5 years	Increased number of innovating firms in a cluster, and number of innovations within a firm ⁴	Survey
4.Export orientation	5 years and above	Increased number of exporting firms	Survey
5.Employment generation	Increased number of firms in a cluster and/or number of	Number of firms and total number of employment generated.	Survey

¹ We assume that visibility is an outward manifestation of the positive factors that are intrinsic to the cluster

² It is important to note initial conditions in terms of status of technology in use for each individual firm in a cluster. This can be done during the first round of monitoring and evaluation.

Perhaps it is important, at this juncture to reiterate the point that cluster evaluation is still at its infancy even for those regions where cluster initiatives have been in place for quite some time now. The best way, according to the existing literature is to base evaluation on the clustering processes and trajectory rather than on static measures (Anderson, et al, 2004). In the absence of clear indicators of the desired end result of clusters, i.e. indicators of competitiveness, it is important to focus on one of the very important stages towards competitiveness, which is innovativeness. This is even more important for African countries that are still at the early stages of building a firm base for competitiveness, i.e. innovative activities.

The ultimate goal of this framework is to measure the impact of innovativeness, which to a large extent leads towards competitiveness. The framework is a draft starting point, and therefore should be used as a guide towards putting in place a more reliable framework as issues unfold during evaluations. This is necessary as the process has to be informed by practice. Perhaps in future more investments will be needed in undertaking background and/or theoretical studies to inform and guide the process as “low hanging fruits” are exhausted and forced to move into a more complex systems of innovative clusters.

Epilogue

As we note in this report, 18 months of first phase of cluster initiative ended in July/August 2007. This final evaluation started in August 2007 and ended in January 2008. It is also worth noting that out of eight pilot clusters, four clusters have been selected to participate in the second phase of the initiative. They are: Bagamoyo Tourism and Cultural Heritage Cluster; Eastern Region Mushroom Cluster; Morogoro Metalwork and Engineering Cluster and Zanzibar Seaweed Cluster. In addition, 11 new clusters have been launched and we do hope that lessons learnt during the first batch of clusters, especially the constraining factors that have contributed to poor performances in many of the clusters, including those selected for the second phase will be taken into account.

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training workshops and exhibitions. The recent work carried under auspices of ATPS-Tanzania is: "*Trends in R&D activities in Tanzania: funding sources, institutional arrangements and relevance*"; IDRC Publication (forthcoming).

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