ZEF Bonn
Zentrum für Entwicklungsforschung
Center for Development Research
Universität Bonn

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Nutrition Improvement Projects in Tanzania:

Appropriate Choice of Institutions Matters

Number 12

ZEF Discussion Papers on Development Policy
Bonn, August 1999

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John Msuya, Nutrition Improvement Projects in Tanzania: Appropriate Choice of Institutions Matters, ZEF – Discussion Papers On Development Policy No. 12, Center for Development Research, Bonn, August 1999, pp. 36.

ISSN: 1436-9931

Published by:
Zentrum für Entwicklungsforschung (ZEF)
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Abstract

Nutrition Improvement Projects (NIPs) are sets of planned activities specifically undertaken as interventions to reduce malnutrition and its associated problems in the communities. The study focused on five NIPs of varying nature. The projects included the internationally known Iringa Nutrition Project, and the National Salt Iodation Project. Others include, a locally processed weaning food, and smallholder agricultural-based projects.

The aligning of institutions for delivering primary health services attempted by some nutrition improvement projects in Tanzania seems to be in disharmony with the organisational capacities, and therefore causing high transaction costs. On the other hand, things look promising for the deliverance of non-public good services. The private sector - through the use of market mechanism, and more involvement of the civil society as a way of increasing the participation of beneficiaries, hold the key to success for that matter. Such arrangements are likely to be favoured by the continuing economic changes in the country.

Kurzfassung

Ernährungsverbesserungsprojekte beinhalten ein Bündel von Maßnahmen, die mit dem Ziel durchgeführt werden, Unterernährung und damit verbundene Probleme zu bekämpfen. Der Schwerpunkt der Studie liegt auf fünf Ernährungsverbesserungsprojekten ganz unterschiedlicher Natur, darunter das international bekannte “Iringa Nutrition Project” und das “National Salt Iodation Project”. Die anderen beschäftigen sich mit lokaler Stillkostproduktion und Kleinbauern.

Die Einrichtung von Institutionen für die Bereitstellung von Basisgesundheitsdiensten, wie von einigen Ernährungsverbesserungsprojekten in Tansania versucht, scheinen mit den Organisationskapazitäten nicht übereinzustimmen und verursachen daher hohe Transaktionskosten. Andererseits entwickelt sich die private Bereitstellung ernährungsrelevanter Güter und Dienstleistungen vielversprechend. Die Einbeziehung des privaten Sektors erscheint wegen des Marktmechanismus und der stärkeren Beteiligung der Zivilgesellschaft ein Weg, die Partizipation der Zielgruppen zu erhöhen. Dies ist ein Schlüsselbereich für den Erfolg. Der wirtschaftliche Wandel in Tanzania unterstützt diese Tendenz.

1 Introduction

Malnutrition is still a big problem in developing countries today. Reports show that as many as 60% of children in some of these countries are underweight (ACC/SCN, 1993). While a significant downward trend in underweight children has recently been observed in other parts of the world, the situation in sub-Saharan Africa is of great concern (World Bank, 1995; UNICEF, 1996). A recent compilation of available information in the region revealed even an upward trend in the prevalence of underweight children (ACC/SCN, 1994; 1996) in several countries.

Malnutrition is known to be very much associated with poverty (Berg, 1973; 1987; Garcia and Pinstrup-Andersen, 1987; von Braun et al., 1992). It is therefore not coincidental that the sub-Saharan countries have both characteristics. According to the 1994 World Bank statistics, the 10 poorest countries in the world are all found in the region (World Bank, 1996). With per capita GNP of US$140, Tanzania is the fourth poorest country. Economic growth – if associated with income growth among the poor – can, and has actually been shown to, provide a lasting solution to the problem of undernutrition (ACC/SCN, 1992; 1993). However, in view of the extent of human suffering and the known consequences it would be unacceptable to wait for a solution to come through the course of economic growth in the long run. Indeed, other ways of reducing malnutrition rapidly are necessary. This is the goal of *Nutrition Improvement Projects* (NIPs).

NIPs are sets of planned activities specifically undertaken as interventions to reduce malnutrition and its associated problems in communities, by channelling additional resources, including knowledge, more quickly and specifically to nutritionally needy groups. Typical NIPs include nutritional surveillance, feeding programmes, nutrition education, food production and formulation, nutrient fortification, and caring for special groups most vulnerable to malnutrition. While macro-economic interventions and general policies to reduce poverty and health problems implemented at a national level play important roles in the improvement of the food and nutrition situation, they are not classed as NIPs. Also, this approach for addressing structural and chronic nutrition problems does not apply to emergency situations such as, for example, disasters.

The aim of the current study is to undertake an investigative analysis of NIPs in Tanzania to assess the possibility for further improvement, or at least sustaining, their impacts. The main focus is on institutional arrangements within projects, which tend to be neglected. In the course of the analysis, two research questions will be addressed:

- Do the institutional set-up options employed by the NIPs in Tanzania offer possibilities for low transaction costs on delivering their goods and services given the social and political environment in the country?

- How can the functioning of the NIPs be conceptualised in an operational framework?

Chapter two outlines the profile of the nutrition improvement projects found in Tanzania, and reports on the perception of community leaders concerning NIPs. In order to assess the possibility of sustaining the impact of the projects, chapter three provides an analysis of the arrangement of institutions involved in implementing the activities of the NIPs, and their implications for transaction costs. Chapter four winds up the study by proposing a conceptual framework of the functioning of the NIPs. The chapter also gives the policy implications and recommendations.

2 Profiles of NIPs and Community Leaders Perceptions

2.1 NIP Profiles

According to their nature and activities, nutrition improvement projects operating in Tanzania can be classified into eight categories. The categories are:

(1) Community-based projects of the 80's
(2) Micro-nutrient malnutrition control projects
(3) Agriculture-based food security projects
(4) Information system projects
(5) Primary-health-based projects
(6) Formulated foods
(7) Projects to reduce women's workload
(8) Women's income-generating projects

Each of the eight project categories is explained below and specific examples of such projects provided. It should, however, be noted that the criterion used here for this classification is only for convenience. Other criteria are also possible.

Community-based projects of the 80's: Specifically, two programmes are included here. These are the WHO/UNICEF Joint Nutrition Support Project (JNSP) in the Iringa region and the Child Survival, Protection and Development (CSPD) programmes. The two are closely related. The JNSP was implemented between 1984 and 1988 in a few selected villages in the Iringa region before it was phased out and adapted as CSPD to cover the whole region. It has also been adapted to a number of other regions, since then. Both projects follow the integrated nutrition approach and are community-based so that community participation and empowerment are strongly emphasised.

Micro-nutrient malnutrition control projects: These are narrow focusing projects directed at controlling various specific micro-nutrient deficiencies. The projects focus on deficiencies of the three micro-nutrients which are of national concern. These are: iron deficiency leading to nutritional anaemia, iodine deficiency leading to iodine deficiency disorders (IDD), and vitamin A deficiency. Each of the three is addressed individually in separate projects. Of more importance for this study is the IDD control. The project which started in the 1990s is the national salt iodation project, which aims at iodine fortification of salt consumed in the country. Legal regulations provided under the Tanzania Salt Acts of 1992 and 1994 are used to reinforce

the objectives of this project (Government of the URT, 1994). The measures are directed at salt producers, traders and consumers.

Agriculture-based food security projects: Agricultural extension services in Tanzania, like in many agriculturally dominated economies, have focused more on cash than on food crops. This is probably due to the importance of such crops in earning crucial foreign exchange. The lack of promoting food crops calls for projects which focus on improving food production for household food security. This is particularly true for the remote areas where agricultural commercialisation is hampered by factors such as poor rural infrastructure. Such projects include a Belgian-NGO-funded project in the Mwanga District in northern Tanzania. The project is known as the Mwanga Integrated Farming Improvement Project (MIFIPRO).

Information system projects: These are new type of projects earmarked recently in view of the need and importance of correct and timely nutrition information in development planning and decision-making in the country. Much of the experience has been gained from JNSP-Iringa especially on how communities can generate and make use of such information. However, due to both financial and logistical problems, such projects have not been able to take off fully.

Primary-health-based projects: These are projects which are based on efforts to overcome detrimental nutrition-health linkages. Such efforts include country-wide immunisations of women and children against child killer diseases. Such efforts have become so common that they are now part of the health services provided by the government. They are also included as an important part of other projects such as CSPD. Family planning is another of such projects.

Formulated foods: Because of the poor weaning foods and practices in specific communities, there have been attempts to provide cheap and affordable formulated weaning foods. Such foods are particularly aimed at reducing protein energy malnutrition which is very common among children of that age. Several projects have embarked on this undertaking. The best known ones are the Morogoro UNICEF-funded soy bean project in the 1970's which was abandoned after a few years of operating. Others include the TFNC and National Milling Corporation (NMC) joint project during the early 1980's to produce a commercial weaning food *Lisha.* This project was also abandoned after only a few years of operation following some financial and logistical problems. The project was supported and highly funded by the USAID (TFNC, 1983). While the two above projects were based on the government or its agencies, the missionary services unit of the Catholic church in Tanzania is now operating small scale projects in several of its centres in the country. One such centre is in Turiani in Morogoro Rural District where a formulated weaning food known as *Totomix*[1] is being produced and marketed.

[1] The name comes from the Kiswahili word for a child which is `*mtoto*'

Projects to reduce women's workload: Women's heavy workload is recognised to be one of the causes of poor nutrition (Engle, Menon and Haddad, 1997). First, for the woman herself for not meeting her body's nutrient requirements, and secondly, for her children, as she is unable to care for them properly. Various projects therefore aim to reduce the workload in different ways, mostly based on introducing improved appropriate technology. The Himo project in northern Tanzania focuses on teaching women how to make and use efficient cooking stoves. The project also promotes tree planting to provide firewood close to homes, at the same time helping to conserve the environment to ensure sustained agriculture production in the area.

Women's income-generating projects: It is recognised in Tanzania (Kavishe, 1993), like in many other poor countries, that incomes owned and controlled by women are more likely to be spent on improving food and nutrition in the household than those controlled by men. Some projects therefore focus on enabling women to generate their own controlled incomes. Several NGOs are involved in Tanzania where they provide loans and supporting logistics such as training. The government of Tanzania, through donors, attempted to set aside a special fund to provide loans to poor women, to help them engage in informal sector activities. However, many complaints have been raised concerning the failure to target and reach those really in need (Lugalla, 1995).

Ultimately, five NIPs which varied in nature and characteristics were selected for this study. The projects are: the Iringa Nutrition Project (JNSP/CSPD), Tanzania National Salt Iodation, MIFIPRO, the Himo project and Totomix. The selection of these projects was based on the non-probability convenience sampling technique (Fink, 1995). Care was taken to ensure that most of the categories of NIPs, mentioned above, were included. Description of each of the projects is given in Msuya (1998).

2.2 Community Leaders Perception

In order to identify general opinions about NIPs in the local communities, community leaders in one region of Tanzania were interviewed. Specifically, a total of 21 community leaders in two districts, 16 in Morogoro Urban and 5 in Morogoro Rural, were interviewed. The results are presented in Table 1 below.

In both districts, the CSPD project, which incorporates maternal and child health (MCH) activities, was well known among the interviewed community leaders. In the urban district, all of them were familiar with the project. The CSPD project was introduced in the Morogoro region in 1988. Other familiar projects include women's loans in both districts, and water wells in the rural district. The popularity of crop production in the urban district is not surprising. Mvena et al. (1991) reported an increase in urban farming within the Morogoro municipal area.

Table 2 presents results of the ranking of development projects as perceived by the interviewed community leaders. Despite of available alternative health services in the urban district, an overwhelming majority of the leaders still ranked the CSPD/MCH as the most beneficial project. However, the situation was different for the rural district leaders where there is no overwhelming preference for the type of development projects although women's loans were slightly superior.

Table 1: Type of development projects reportedly known to the interviewed community leaders

Type of Project	**Morogoro Urban N = 16 (%)**	**Morogoro Rural N = 5 (%)**
Crop production	8 (50)	2 (40)
Livestock production	3 (19)	1 (20)
Women's loans	9 (56)	4 (80)
Pet business	4 (25)	1 (20)
Nutrition (MCH and CSPD)	16 (100)	4 (80)
AIDS prevention	0	1 (20)
Child day-care centres	0	1 (20)
Handicraft	6 (38)	0
Water (underground water wells)	0	3 (60)

Source: Own survey

Table 2: Type of development project ranked number one, among those known and perceived as the most beneficial by the interviewed community leaders

Type of Project	**Morogoro Urban N = 16 (%)**	**Morogoro Rural N = 5 (%)**
Crop production	1 (6)	1 (20)
Women's loans	0	2 (40)
Health/nutrition (MCH and CSPD)	13 (81)	1 (20)
Self-help voluntary construction works	1 (6)	0
Water (underground water wells)	0	1 (20)
Not sure	1 (6)	0

Source: Own survey

Table 3: Perceived nutritional problems and causes as reported by the interviewed community leaders in the different projects

Characteristics	**Project**				
	CSPD Iringa N=9	**CSPD Morogoro N=4**	**Totomix N=4**	**Himo N=2**	**MIFIPRO N=1**
Nutritional problems:					
-Child malnutrition	9	4	4	0	0
-Adult malnutrition	2	0	0	0	0
-General underfeeding	5	2	0	2	1
Main causes:					
-Low agric. production	4	1	1	2	1
-Poor knowledge	7	4	4	0	0
-Low incomes	4	4	4	1	0
-Bad life style	5	2	3	0	0
-Unsafe water & diseases	4	0	0	0	0

Source: Own survey

The perception of the community leaders regarding nutritional problems and their causes in their respective locations were sought (Table 3). Child malnutrition was mentioned by all interviewed leaders in the NIPs dealing with children (CSPD and Totomix). However, general underfeeding was recognised in almost all the project areas. Various causes of the nutritional problems in the various project areas were noted, but low agricultural production was mentioned in all of them.

Using the community leaders as key informants, the survey was able to gather data for the present analysis. Generally, NIPs are well-known in the society. However, their ranking compared to the other known development projects cannot be generalised. Community leaders in the urban area seemed to differ from those in the rural area. Unlike the divided opinion on how NIPs are valued, the majority of leaders felt that they were addressing the main nutritional problems in their areas. Although some aspects regarding NIPs seem to be contradictory, their great popularity and favourable attitude are very encouraging.

3 Arrangement of Institutions Among the NIPs

3.1 Conceptual Basis: Transaction Costs (TCs) and Choice of Institutional Design

The research question to be addressed here is whether the institutional set-ups arranged by the NIPs in implementing their activities are able to attain low TCs and hence ensure effectiveness and sustainability of the projects.

Fundamentally, a project can be conceptualised as a set of contracts linking various actors as principals and agents. The actors include the owners, employees, contractors, consultants, and beneficiaries. The setting of these contracts is what gives rise to the transaction costs (TCs). Though there is no consensus on the precise definition of TCs (Williamson, 1975; 1985; Cheung, 1983; Barzel, 1985; North, 1987; 1990), transaction costs in this study will be based largely on the concepts by North. Accordingly, TCs consist of the costs of measuring the valuable attributes of what is being exchanged and the costs of protecting rights and policing and enforcing agreements. While this definition, like the concept itself, was basically developed for studying corporate economics, it is used to enable the analysis of projects in this study.

As mentioned above, the idea of introducing the concept of TCs in this study is to provide extra tools for investigating project implementation. For this purpose, the concept is expanded here to include what Williamson (1985) refers to as dimensions of transactions which determine the outcome of the contracts. The dimensions are aspects of *asset specificity, uncertainty*, and *frequency*. Of the three dimensions, asset specificity is the most interesting for this study and will therefore be briefly explained. According to Williamson, the traditional cost accounting which distinguishes only fixed (F) and variable (V) costs is not complete. He argues that some components of the cost of the contract are not captured. Williamson have therefore added the notion of asset specificity which is divided into totally specific and non-specific. Four different types of asset specificity can be distinguished. They are briefly summarised by Joskow (1988, p. 106) as follows:

> *''(a) Site specificity: The buyer and seller are in a ''cheek-by-jowl'' relationship with one another, reflecting ex-ante decisions to minimise inventory and transportation costs. Once sited, the assets in place are highly immobile.*
>
> *(b) Physical asset specificity: When one or both parties to the transaction make investments in equipment and machinery that involve design characteristics specific to the transaction and which have lower values in alternative uses.*
>
> *(c) Human asset specificity: Investments in relationship-specific human capital that often arise through a learning-by-doing process.*

(d) Dedicated assets: General investments by a supplier that would not otherwise be made but for the prospect of selling a significant amount of product to a particular customer. If the contract were terminated prematurely it would leave the supplier with significant excess capacity''.

Development projects are organised or designed in various ways although it is not very clear what really determines such designs. Such designs may, to some extent, be subjective depending on the interests and ability of the project owner or implementor. Only few workers have attempted to suggest some criteria for the designs (Kessides, 1993; Picciotto, 1995). It is argued (Picciotto, 1995), that the nature of project goods is fundamental to organisational or institutional design. Accordingly, project goods are grouped into government, public, civil, common pool, market, and toll goods (Table 4). In order to provide a framework for assessing the rationale of project institutional design for the NIPs in this study, this section looks into the nature of project goods and how they suit the various designs.

Table 4: Institutional design parameters

Nature of Project Goods	**Dominant Parameters**	**Institutions**	**Example**
Government	Hierarchy	State agencies	Justice, rules for food quality, police
Toll	Market Hierarchy	Public regulated private corporations	Public utilities
Public	Participation Hierarchy	Hybrid organisations	Policy, community health and nutrition, rural roads
Market	Market	Private corporations, farmers and entrepreneurs	Farming, industry, services (including nutrition)
Civil	Participation Market	NGOs, PVOs	Public advocacy (including nutrition), professional standards, civic action
Common Pool	Participation	Local organisations, co-operatives	Natural resource management

Source: Picciotto (1995) p. 11 with some remarks on nutrition policy and programmes added.

Traditionally, the institutional design of projects was dominated by a sense of public sector orientation (OECD, 1991), but now things have started to change. As government capacity and fiscal constraints came to light, there was greater emphasis on mobilising private resources for development. At the same time, in response to pressing social and environmental problems, voluntary organisations multiplied and attracted substantial development funding. The same societal shifts made the involvement of beneficiaries in achieving project objectives (i.e.

participation) necessary. As the role of the private and voluntary sectors increased, the assumptions governing the design of project organisations had to be reconsidered.

On the other hand, the elements for planning the organisational design have been analysed by institutional economists. This has brought to light the potentials and the limits of government, markets, and organisations. For example, the difficulties of aligning individual incentives to the common good within large and heterogeneous groups have become clear (Olson, 1971). The powerful incentives for ‘‘free ride’’ that are inherent in large groups have been revealed. Similarly, the transaction cost literature has illuminated the contractual enforcement difficulties associated with excessive reliance on hierarchy and control (Williamson, 1994). Whereas, under the traditional public investment planning approach, there was a tendency to favour the command and control organisations, institutional theory suggests that the desirable point of departure for reviewing project design options is the market (Picciotto, 1995). The implication seems to be that where markets can be employed efficiently they should be used. Compared with the alternatives, markets save scarce administrative capacities, avoid the public choice obstacles associated with large organisations, and tend to be responsive to consumer needs. However, not all the activities undertaken by projects, and especially those of the nutrition improvement projects, are amenable to market solutions or private transactions.

Private transactions are effective only for goods which are consumed by one person at a time (*subtractability*) and in circumstances where individual consumers can be excluded without incurring substantial costs (*excludability*). The combination of these characteristics along with competition, providing the conditions of free entry and exit, results in market efficiency. The fundamental implications for institutional design have been dealt with (Kessides, 1993 and Picciotto, 1995).

Williamson (1985, p. 93) illustrated how the ideal choice of types of institutions should be made in a contracting situation. The difference between the bureaucratic cost of internal governance and the corresponding governance costs of the markets, within a given level of asset specificity, should determine whether the transaction will take place in the market or within the firm. If asset specificity is slight, it will not pay to establish a bureaucratic organisation, while if asset specificity is great, hierarchical solution will be more logical. There will also be situations where the choice between markets and firms is a matter of indifference.

3.2 Arrangement of Institutions Among the Study NIPs

A summary of the types of institutions employed by the NIPs in implementing their activities is presented in Table 5. Also included in the table are the types of goods delivered by the projects and their corresponding parameters for the enforcement of the institutions. The activities of the NIPs are dominated by the civil goods. Except for the CSPD project, all the NIPs have included at least one component of market goods among their range of delivered goods. Public and government-type project goods are found among the CSPD and the Salt Iodation

projects only. Common pool goods appear within three NIPs as water for irrigation and salt as a natural resource. It is therefore not surprising that participation was widely employed to enforce the institutions. The various aspects of the participation parameter included charity by NGOs, local organisations and co-operation e.g. the farmer groups and producers associations. The market parameter is dominated by private entrepreneurs. The economic theory recommends the use of market mechanisms whenever possible to reduce the costs of organisation (Picciotto, 1995). The situation in each of the NIPs is described below.

Table 5: Identified institutional design parameters of the study NIPs

Project	**Goods Delivered**	**Type of Good**	**Institutions Involved**	**Dominant Parameters**
Totomix	-Formulated weaning food	-Market; civil	-Private entrepreneurs; NGO (donor)	M P
MIFIPRO	-Mechanisation (ox-plough & cart) -Irrigation -Improved farming technology	-Civil; market -Common pool -Civil	-Small farmers; NGOs;entrepreneurs; -Local organisations; co-operatives; NGOs -Small farmers; NGOs	P M P P
Himo	-Tree seedlings -Efficient stoves -Irrigation	-Civil; market -Civil; market -Common pool	-Local org.; NGOs; entrepreneurs -Local org.; co-operative; NGOs	P M P
National salt iodation	-Healthy salt -Salt law	-Market; public; common pool -Government	-Entrepreneurs; co-operative -Government	M P H
CSPD	-Health education -Primary health care -Health surveillance -Community empowerment	-Public -Public -Government -Public; civil	-Public health; local organisations (LOs) -Public health; local govt.; LOs -Local govt.; LOs -Local govt & LOs	 H, P H, P H, P H, P

Parameters: M = Market; P = Participation; H = Hierarchy
Source: Own survey

Totomix Project:

The market mechanism is applied in several aspects of the Totomix project. A private operator is in charge of production and distribution of the Totomix formulated weaning food. The operator is an entrepreneur who operates commercially but is committed to the project custodian i.e. the Turiani missionary hospital. Investigation indicated that the hospital had previously attempted to manufacture the product on its own but had to abandon the idea because

of logistical difficulties. The failure is, however, not surprising. Based on organisation theory it is the market option that offers low TCs in delivering market-type goods.

Price subsidies offered to the poor families together with the support which the hospital provided to the entrepreneur qualifies the project as a civil-type good. The entrepreneur had received the working capital from the hospital in an interest-free loan. The hospital has also continued to provide support in various ways including the much needed transport facilities. The hospital is itself run by charity from donors of the Roman Catholic church in the Diocese of Morogoro.

MIFIPRO and Himo Projects:

The MIFIPRO project includes the existing local traditions of irrigation, water management and cattle keeping. The project also facilitated the formation of co-operative farmer groups. This is considered an empowering strategy to encourage the common actions and increase the small-farmers voice. Although the project is linked with the district government (authority), the use of hierarchy was completely avoided. The villagers in the area had experienced negative government actions (hierarchy) during the *villagilisation* programme less than three decades ago. During the programme most of the villagers are said to have lost their properties when they were forced to move to areas which they were not willing to go. The Himo project seems to be very similar to the MIFIPRO project except for the stronger local organisations in the Himo area which the project was able to take advantage of. The churches and schools in the Himo area have for many years commanded a very strong influence in the community especially with respect to introducing innovations. Coffee which is the main cash earner[2] and hybrid dairy cows were all introduced in the area through the activities of the church and schools. The Himo project uses the schools to conduct and promote its activities of tree nurseries and efficient stoves. The nurseries have been established in a number of schools where the project has provided the necessary technology and materials. The schools take care of these nurseries and keep the cash resulting from the sales of the seedlings. Similarly, big firewood stoves have been installed in several schools as well as in a few private local breweries and catering agencies. While they use them for cooking, they are indeed intended to help extend and make the community appreciate the technology.

[2] This is mainly in the high altitude parts of Himo where the majority of the population reside. The physical features of Himo area allows to distinguish three zones: the high altitude, the intermediate, and the low lands. Population density follows the same pattern in terms of concentration i.e. highest, high and low, respectively (O'kting'ati and Kessy, 1991; Himo Project Progress Report, 1995; Lema, 1995).

The National Salt Iodation Project:

The National Salt Iodation project deals with a good that is of multiple nature. Salt as a consumer commodity is a market good involving a number of dealers. When salt is used as a vehicle for supplying the dietary iodine to promote public health then it is a public good. However, if the product is considered from the production point of view, it is a common pool. It is produced by mining (as a mineral) or extraction from the sea. Furthermore, the universal consumption of iodated salt requires a well-established government machinery to control the production and distribution of salt. The latter nature of salt makes it a government good. Therefore various institutions and enforcement mechanisms are employed in the implementation of this project. Private traders are used for the distribution of salt to consumers through the market mechanism. The mechanism comprises well established wholesalers and retailers. The traders required no assistance from the project except for the dissemination of information related to the country's salt law. Due to the economic difficulties of producing iodated salt, the salt producers were assisted by the project to form an association to solve their conflicts and safeguard their welfare. The association is known as the Tanzania Salt Producers Association or TSPA. The task of checking whether salt sold or produced for human consumption to ensure that it contains the recommended levels of iodine has been bestowed on the government commission, the Tanzania Food Control Commission (TFCC). The commission collaborates with the health workers in the districts. This became possible after the Salt Law was passed by the parliament. The law was initiated and facilitated by the project.

The CSPD Project:

The CSPD project which attempts to combat a very complex problem of poor child growth and mortality deals with public and government goods. The project is implemented through the local government organisation structure. The organisation starts from the regional level down to the village through the district and ward. The project makes use of the public health facilities to provide primary health care and health education to the community. The project initiated the formation of health committees (HCs) at all levels of the local government organisation. The committees are responsible for making decisions and for taking relevant measures to improve health and nutrition. The project was also able to create the post of a village health attendant (VHA) for individuals appointed from their villages. Each of the appointed VHAs was trained by the project before being put in charge of village health. A similar post was also created for a traditional birth attendant (TBA). Both the VHAs and the TBAs are members of the village HC. The present analysis treats the HCs as the local organisations facilitating participation.

Another interesting attempt in improving child growth and lowering child mortality provided by the CSPD project is health surveillance. Under-five-year-olds are weighed every month on the *village health day* (VHD). The weight-for-age records are kept for the purpose of nutrition and health surveillance. Initially these records were used for the project-support

purposes i.e. monitoring and evaluation. However, they have proved to generate useful information for development planning since other data is not available. The VHAs conduct the weighing and compilation of the records. Another crucial responsibility of the VHAs is to report to the village leadership all the households which seem to suffer from chronic cases of child malnutrition. The village leadership will then take the necessary action. While health surveillance can be considered a government good by its nature, two different institutions are involved in implementing the exercise. These are the local government and the local organisations (VHAs and HCs). The corresponding parameters are therefore hierarchy and participation, respectively (Table 5).

While the use of participation in delivering a public type of project good may seem to be ideal, the ability to sustain the local organisations used by the CSPD project i.e. the VHAs and HCs is questionable. For most of the individuals working as the VHAs, this was an opportunity to gain employment and earn an income. The project paid them an allowance during the pilot phase of the project anticipating that their respective village governments would eventually take the full responsibility. However, an investigation in the areas where the project was implemented has shown that the village governments are not able to pay them regularly (Table 6). The attendance of frequent seminars and training programmes was another opportunity for the VHAs and the other members of the HCs to earn money. Training and seminars almost ceased after the donor support stopped. The table also provides some evidence of this.

Table 6: The current work situation of the interviewed Village Health Attendants (VHAs) in two districts, Iringa Rural and Morogoro Urban

	Iringa Rural % (N = 8)	**Morogoro Urban % (N = 30)**
Remuneration:		
-Paid allowance regularly	85.7	6.7
-Paid allowance irregularly	14.3	93.3
Attended any training in 1994 and 1995:		
-Yes	25.0	23.3
-No	75.0	76.7
Opinion on the adequacy of working facilities:		
-Quite sufficient	12.5	3.3
-Insufficient	75.0	96.7
-Cannot comment	12.5	0

Source: Own survey

The experience of the World Bank-funded community development projects (Picciotto, 1995) also points out the difficulties of poor communities to contribute sufficient resources to support the public good projects. The situation seems to imply that it is perhaps wrong to expect poor communities to take over the costs of providing public services.

All the above-mentioned measures in relation to the implementation of primary health care, education, and surveillance result in empowering the community. For this reason, community empowerment has been classified as a public good. The project was also involved in efforts to empower a special group of individuals in the population, women. This was done by initiating the formation of women groups to undertake the income-generating activities and by providing them with credit and the relevant training. For this reason, community empowerment is also considered a civil type of project good undertaken by the local organisations (women groups).

3.3 Asset Specificity

The various aspects of *asset specificity* identified in the NIPs studied are summarised in Table 7. An attempt is made in this section to point out the main features for each individual project and their probable implications.

Totomix Project

The equipment, the workers and all the ingredients required for producing the formulated weaning food are non-specific which implies that they have a low degree of *boundedness*. A high degree of *boundedness* is associated with high risk and therefore implies high TCs (Williamson, 1985). Most of the equipment used is simple household utensils which can easily find other uses. The project workers do not need complicated and specialised training, actually all of them learned the skills by just working in the project. All the ingredients used (maize grains, groundnuts and cowpeas) are available in the local market. The product is distributed by the existing consumer shop[3] while milling is performed by commercial private millers in the area. The use of these facilities saved the project from establishing its own which would have resulted in a high degree of asset specificity. The specialised learning which the project manager ad to undergo can be considered a form of human asset specificity. Such an expensive venture would not have been possible without charity from the church.

The table indicates that the Totomix product (the formulated weaning food) is a *dedicated asset* to a certain degree. More than half of the amount produced either goes to the hospital for feeding the admitted patients (not only children) or is bought by customers by prescription from the paediatricians in the hospital. It is estimated[4] that during the year 1994 an average of 300 kg of the formula was consumed monthly, of which 25% was used by the hospital, 12% was sold at the hospital's Maternal and Child Health (MCH) clinic, and 63% was sold by the shop in which a large part was actually by the prescriptions. In other words, the project depends, to a great extent, on the hospital. Dedicated assets tend to have higher risks and offer less opportunities for

[3] The entrepreneur, who is contracted to produce the weaning formula, owns a consumer shop which is situated in a very strategic position, just opposite the Hospital.
[4] This is according to the records kept by the project manager as well as those of the hospital.

free market competition (Williamson, 1985). The high business risk aspect is off set by the existing mutual trust between the entrepreneur and the hospital. The entrepreneur enjoys the monopoly guaranteed by the hospital. On the other hand, the hospital is very happy about a single producer whom it can manipulate. This symbiosis between the two parties seems to be well understood and appreciated by both of them and neither will want to do without.

Table 7: Various types of asset specificity, identified and considered relevant, from activities of the five study projects

Project	**Asset/Goods**	**Type and Level of *Asset Specificity****			
		Site	**Physical**	**Human**	**Dedicated**
Totomix					
	Weaning food	0	0	+	+
	Ingredients	0	0	0	0
	Workers	-	-	0	0
	Equipment	0	0	0	-
MIFIPRO					
	Use of ox-plough	0	++	0	-
	Use of ox-cart	0	0	0	-
	Irrigation	+	0	0	-
	Improved farming	0	+	0	-
	Workshop	++	0	++	-
Himo					
	Tree nursery	+	+	0	-
	Efficient firewood	0	+	0	-
	stoves	+	0	0	-
	Irrigation				
National Salt Iodation					
	Iodation plants	++	++	0	+
	Salt distribution	0	0	0	-
	Salt quality control	0	+	0	-
CSPD					
	Growth monitoring	+	++	0	0
	Health education	0	0	++	0
	Village Health Workers	+	++	0	+
	Equipment	0	+	0	-
	Women credits	0	+	0	+

*Key: totally specific (++); specific to some extent (+); non-specific (0); not applicable (-).
Source: Own survey

MIFIPRO Project

Several cases of asset specificity were identified among the activities of the MIFIPRO project. The use of an ox-plough, one of the new technologies promoted by the project, can be used for land ploughing only. Therefore the ox-plough suffers from the *physical asset specificity*. Ox-ploughing also requires great skills and strength both of the operator and the traction animal. Unfortunately, both are greatly lacking in the area. Women, children and elderly men contribute most of the farm labour but they are probably not strong enough to handle an ox-plough properly. The small body size of the oxen coupled with poor health and nutrition is another obstacle. The area is dominated by heavy clay soils which require a lot of traction power to be able to till the land. In contrast, the ox-cart which is another prime mechanisation technology introduced by the project, requires less skill and power. The carts, like the ploughs are easily obtained at a reasonable price through the project workshop where they are assembled. The ox-carts are easily managed by women and children and can serve several purposes in the household. They are popularly used as means of transport for fetching firewood, water, crop harvests and construction materials. The carts are also hired for transportation purposes and hence generate income in the households. Another difficulty for the adoption of ox-ploughing is likely to be the tradition of cultivating several small plots in different places. The practice does not seem to encourage the use of mechanisation. Cultivating small plots in varied places, which is common in many parts of Tanzania (Dercon, 1996), is considered a risk aversion strategy by small farmers given the high uncertainty involved in crop farming. Ox-cart mechanisation is therefore expected to be more wide-spread than the ox-ploughing. An evaluation study conducted in 1991 supports the above predictions. Among the surveyed farmers in the area, 84% were already using ox-carts as compared to only 47% who were using ox-ploughs (COOPIBO, 1991).

The irrigation component suffers from *site* as well as *physical* asset specificity. Site specificity because the irrigation water can only reach some plots but not all of them. The irrigation water depends on the gravitational flow which can only reach farm plots located in low areas. Water pumping facilities are not available. Also, because of the small volume of available water, only a limited area can be covered. It should be noted that not everyone in the area owns a plot of irrigated land, which implies that irrigation benefits only a portion of the population. Because of these characteristics of site asset specificity, the villagers are not expected to fully support irrigation. Irrigation has a great potential to support improved farming especially the use of high-yield-varieties (HYVs) and fertilisers. However, as pointed out, irrigation covers only a limited area and therefore the full potential of improved farming cannot be appreciated. Improved farming also requires learning and skills. All these factors make it bounded with *physical asset specificity*. On the other hand, practising improved farming can expose the small farmers to higher risks because of the higher investment requirements. The high TCs involved in undertaking improved farming may hinder its adoption in the area, and unfortunately some of the factors are beyond the project's reach.

Attention is now turned to the workshop owned by the MIFIPRO project. Even though it has a greater capacity, the workshop can only serve a limited number of customers because of its poor location[5]. This makes its economic viability questionable. The workshop therefore suffers greatly from site asset specificity. On the other hand, the long-run existence of the workshop depends very much on the trained technicians operating and running the activities. Given the limited economic opportunities in the area (Maghimbi, 1992; Mvungi, 1995), the technicians are unlikely to receive enough incentives to stay and continue practising in the area. This is something to worry about. The workshop faces a high degree of *human asset specificity*.

Himo Project

The tree nursery which forms an important component of the Himo project is limited by the *site* as well as *physical* asset specificity. The nursery is located in Himo but it serves a much wider area. It is difficult to transport the seedlings over a long distance because they are very delicate, and would therefore require special handling. The project has tried to take care of this site asset specificity by supporting various institutions to establish nurseries in their localities to cater to the existing demand. Until August 1995 the project had already established 37 private tree nurseries, and a total of 150,000 tree seedlings had already been sold. Although environmental conservation, which is the major benefit of planting trees, is a public good and hence generates a very small incentive for individuals to undertake it, the Wachagga people have a tradition of practising agro-forestry within their main farming system (Moore, 1978; O'kting'ati and Kessy, 1991; Lema, 1995). This is a great advantage for the project.

The efficient stoves, on the other hand, seem to be less specific except for the fact that these stoves need special skills for making and using them. Hence they possess some degree of physical asset specificity. The trouble of learning how to use them coupled with the cost of buying would likely make their adoption less wide-spread. The interviewed women in the area indicated that they felt very uneasy cooking with the new type of stoves which they are not familiar with. This can probably be considered more a problem of institutional rigidity at the individual level, the subject to be dealt with in the next section. Specificity related to irrigation in the Himo project is of similar situation to the one discussed above for the MIFIPRO project.

[5] The workshop is located at Kigonigoni, in the middle of the project intended area. But because of the remoteness of the area, the demand for the workshop is not expected to be high enough to justify its economic viability. The area is sparsely populated and lacks other potential economic undertakings. The workshop has been established by the project to serve the ox-mechanisation activities in the area with an anticipation that demand will increase as other economic activities arise. Oil extraction (from sunflowers, simsim seeds and groundnuts) is being attempted but production of these crops is still too low to be of economic importance.

National Salt Iodation Project

Much of the problem of asset specificity is found within the iodation plants. First, these plants are located in specific sites[6] which makes it necessary for the salt producers who are scattered along the coast and some inland areas to incur transportation cost. Second, the iodation plants are very specific i.e. they can be used for iodating the salt only. The investors in the salt iodation business have to think twice before embarking on such a venture. If, for example, the salt iodation business becomes unprofitable, the plants cannot be converted to another use. The risk is even higher if the government machinery fails to control the use of uniodated salt, which is much cheaper and therefore more appealing to consumers. The preference for cheap but uniodated salt was reported in a recent study commissioned by UNICEF and the Ministry of Water, Energy & Minerals (Bazil and Ashraf-ul-Alam, 1995). The study covered a large portion of the country. Also related to physical specificity is the need for the iodating chemical, *potassium iodate*. This reagent is imported into the country. UNICEF assisted in the importation of this important chemical reagent through the project. It remains a challenge for the government to provide an enabling environment to attract the private sector.

Technical know-how is required in maintaining the iodation plants. This further physical specificity increases the risk of failure. The project has taken steps to reduce this by providing training to both large and small-scale salt producers in the country. The relevance of the iodation plants depends to a great extent on the ability of the government to prohibit the use of uniodated salt. This dependence turns the iodation plants into *dedicated* assets and makes them vulnerable to high transaction costs.

Salt distribution seems to be free from the restrictions of asset specificity because of the free market involved. The special equipment for salt testing, as part of quality control, is a limitation because of physical specificity involved. The project was keen to supply the test kits but the future situation, when UNICEF support ends, just like that of the potassium iodate reagent, is unclear.

The CSPD project

The CSPD project consists of varying aspects of asset specificity. For growth monitoring, mothers have to bring their children to a particular weighing centre, normally at a nearby public building such as a dispensary, school, or a village government office. It is therefore site-specific and implies all the related difficulties. For example, mothers have to walk a distance to reach the place. The exercise is also totally specific in terms of physical asset specificity because it

[6] Eight iodation plants have been installed in various locations in Bagamoyo, Dar es Salaam, Tanga and Uvinza (Kigoma). The total minimum capacity is 106,000 tonnes per annum. There are also 25 mini-iodation plants: 6 units in Dar es Salaam/Coastal regions, 3 in Tanga, 6 each in Lindi and Mtwara regions, and 4 in Kilwa district. The mini-iodation plants are estimated to have a capacity of 37,500 tonnes.

requires special weighing equipment and must be conducted by trained individuals. Some villages failed to maintain consistent records because their VHAs quit the job and no replacement was available. The provision of health and nutrition education which is another focus of the project requires the services of well-trained personnel. The exercise therefore suffers from *human asset specificity*. The village health workers (the VHAs, TBAs and members of the HCs) are considered site-restricted because they are recognised in their respective villages only. The personnel is required to work very close with the members of community and therefore he/she should also come from same communities. Furthermore, the workers are specifically recruited to work for the project, which does not qualify them to work anywhere else. In other words, they are not very useful outside the project. This has brought some disappointment to young men and women, who were willing to be recruited in anticipating an increased opportunity for jobs elsewhere. The characteristics seem to suggest that village health workers are *bounded* by the site, physical, as well as the dedicated type of asset specificity. The implied high TCs do not favour the continued existence of these workers unless the project or the government is willing to intervene to rescue the situation.

Some of the technical equipment provided by the project is difficult to replace or maintain without the assistance of donors. Such equipment includes computers, printers, vehicles and medical facilities. These are in this sense suffering from physical asset specificity in which they are bound. To obtain a loan from the CSPD project, women had to be organised in groups. As such, many groups were formed just for convenience without really considering their common interests. The credit programme was therefore turned into dedicated assets. The theory of groups (Olson, 1971) does not recommend such a process. The consequences are therefore obvious. Most of the group projects failed and the groups did not repay the loans. Problems of physical asset specificity might have also played a role in the failure due to poor knowledge of operating such activities, both by the project workers as well as the group members.

3.4 Rigidity of Institutions Against Changes

While the NIPs tried to bring changes intended to improve the nutrition situation, there are still some tendencies at the individual and community levels which are not in harmony with such efforts. This section attempts to reveal the identified sources of institutional rigidity which are of concern to the efforts made by the projects. Table 8 summarises the results.

Table 8: Identified sources of institutional rigidity at individual and community levels which are likely to hinder the efforts made by the NIPs

Project	**Source of Rigidity**
Totomix	-Tradition of receiving hospital foods free of charge -Traditional customs related to child and infant feeding practices
MIFIPRO	-Long tradition of using hand hoe for cultivation -Tradition of owning small plots in varied places -Cattle ownership tradition and values
Himo	-Traditional use of firewood stove
National Salt Iodation	-Small-scale salt producers (and their customers)
CSPD	-Customary labour division according to gender -Traditional customs which deny women rights to resource ownership and decision- making in the household -Traditional customs related to child and infant feeding practices

Source: Own survey

Totomix Project

The users of the church missionary health services customarily received the formulated weaning formulas free of charge from donor charities. This applied equally to the Turiani Hospital, the owner of the Totomix project. Because of this old tradition, many people still feel uneasy to pay for 'hospital food', as most of the formulated foods are still called. This attitude coupled with the traditional customs of child feeding is likely to prevent for a while the widespread use of the Totomix formula. Changing health policies which oblige the individual to contribute to his/her costs of health services may probably help to eradicate the attitude. But obviously it will take sometime before that is achieved.

MIFIPRO Project

For generations, the farmers in the low lands of the Mwanga District adopted a number of farming strategies to cope with the conditions facing them. The low-yield-varieties of crops and breeds of livestock which are more tolerant to the harsh conditions in the area were adopted after years of experience (Mvungi, 1995). Farmers in the area do cultivate several small plots located in various places to reduce the risks of crop failure. This meant a low productivity of agriculture plus lacking investment incentives. The hand hoe thus became the traditional tool for cultivating the land. Attempts by the project to introduce ox-ploughing mechanisation and improved

farming practices, all of which require more investments, may therefore face rigidity. Unless the factors which lead to the high risks in agriculture are successfully dealt with, farmers may not be able to adopt the new ideas. The adoption of ox-ploughing is further hindered by traditional cattle ownership and values which people in the area have regarding the animals. Unfortunately, the young farmers who are most likely to adopt the new ideas don't own the cattle. The animals are mostly owned by the old men who have acquired them through the years. Investigation has also shown that the Wapare people who dominate the area feel it is unfair to use an ox for working (COOPIBO, 1991). They also believe that the meat from such an animal has a poor taste and texture.

Himo Project

The adoption of the improved stoves is likely to be affected by the old tradition of using a three-stone stove, which is very common in the area. The new stoves require chopping or cutting firewood pieces into much smaller and uniform pieces. This is certainly more labour-intensive. Unfortunately, according to the Wachagga tribe a kitchen is a woman's place and in many households elderly women still preside over the kitchens following the migration of younger people to urban centres (Lema, 1995). Elderly women may not only be rigid towards new ideas, but may also find it too difficult to work with the new stoves. The stoves are more likely to be accepted for large-scale cooking such as in schools and in catering businesses. Until the end of 1995, there was already a total of 85 installations in schools, local breweries and hotels (Himo Project Progress Report, 1995). About 80 women were trained in stove making during the same period but the women's adoption is doubtful.

National Salt Iodation Project

The old habit of consuming uniodated salt produced by the small-scale traditional salt producers can be a big hindrance to success of the National Salt Iodation project. While it is possible for the government to control the salt which goes through the formal market channels, it is difficult to control the portion which goes through the informal channels. A typical example is a situation where people produce and consume their own salt, and where the salt reaches the households by other means than trading. It is estimated that about 13 million people in the country have access to foot-hill salt[7] which is just one type of salt produced by small-scale traditional dealers (Bazil and Ashraf-ul-Alam, 1995). Unless the public is made aware of the advantages of using iodated salt and hence refrain from the cheap uniodated salts, it may be difficult to beat the generation-old tradition of producing and consuming uniodated salt.

[7] There are four major salt sources in the country. These are categorised as: (1.) Seawater along the coast, (2.) underground brine (at Uvinza), (3.) rock salt (at Kilwa), and (4.) evaporite in the soil foot-hill along the system of the Great Rift Valley.

The CSPD Project

The CSPD efforts are in conflict with a number of customary traditions among members of the communities. Such traditions include those which govern the distribution of labour among members of a household which leave women with heavy workloads. Others include the denial of rights for women to own resources, and some feeding practices which put children and infants at a disadvantage. Project implementors are very much aware of the existence of such customs. Strong mobilisation campaigns and the mass media were used to create awareness in the community of women's mistreatment and the importance of child nutrition. However, traditions are hard to die and therefore the project efforts are likely to have suffered. The provision of loans to women for income-generating activities was considered a means of encouraging women's ownership of resources. It is, however, difficult to assess the exact effect of such customs on project efforts, or the exact impact of the project on the people's attitude to the mentioned customs.

3.5 Some Preliminary Conclusions

To have a more lasting impact, the NIPs used the existing potential institutions in implementing their activities. Where it was felt that such institutions were either lacking or inappropriate, new ones were created. Both types of institutions have been identified in all the five projects studied.

Projects are dominated by civil-type goods. But the other types of project goods i.e. public, government, common pool, and market are also present. Even where the narrow focusing approach was used, several types of goods were still involved. It is therefore not surprising that the use of participation (including charity) is very common. The market mechanism was used whenever possible. Guided by the concepts of New Institutional Economics (NIE) and the assumption that the institutional arrangement which results in a more harmonised situation has relatively low TCs, the following can be said: Project activities dealing with either market, civil or common pool-type goods, except where *asset specificity* is very high, appear to be more promising. However, there is some concern for those activities dealing with the public and government-type goods. The health aspects of the CSPD and the National Salt Iodation projects are typical of the public good, while the salt law and health surveillance aspects are examples of government goods.

4 Proposed Conceptual Framework, Policy Implications and the Main Conclusion

Given the expected potential of the Nutrition Improvement Projects (NIPs) to reduce the problem of malnutrition in poor countries, the present study intended to investigate how such projects are implemented in Tanzania with the aim of assessing the possibility for further improvement, and to answer the general research question of how nutrition interventions should be undertaken for a successful outcome.

4.1 Proposed Conceptual Framework for the Functioning of NIPs

As mentioned earlier, a clear conceptualisation of how various factors interact to influence the outcome of implementing NIP has been lacking. This chapter intends to piece together the evidence gathered from the various analyses in the present study to suggest part of such a conceptual framework. Four main issues surround, and dominate, the process of NIP project implementation and outcome in this study. The four issues are:

1. Importance of the *type of goods* addressed by the project – which gives rise to a range of incentives to various actors, i.e., individuals, households or specific groups in the community. The types of project goods encountered in this study are: public (child health improvement), market (commodities), common pool (natural resources, namely, salt resources), civil (voluntary donations to support specific development action), or government (salt laws and regulations, nutrition surveillance). The type of good will influence both the approach to use for implementing the project activities as well as the degree of support required from donors and/or the government to implement such activities.

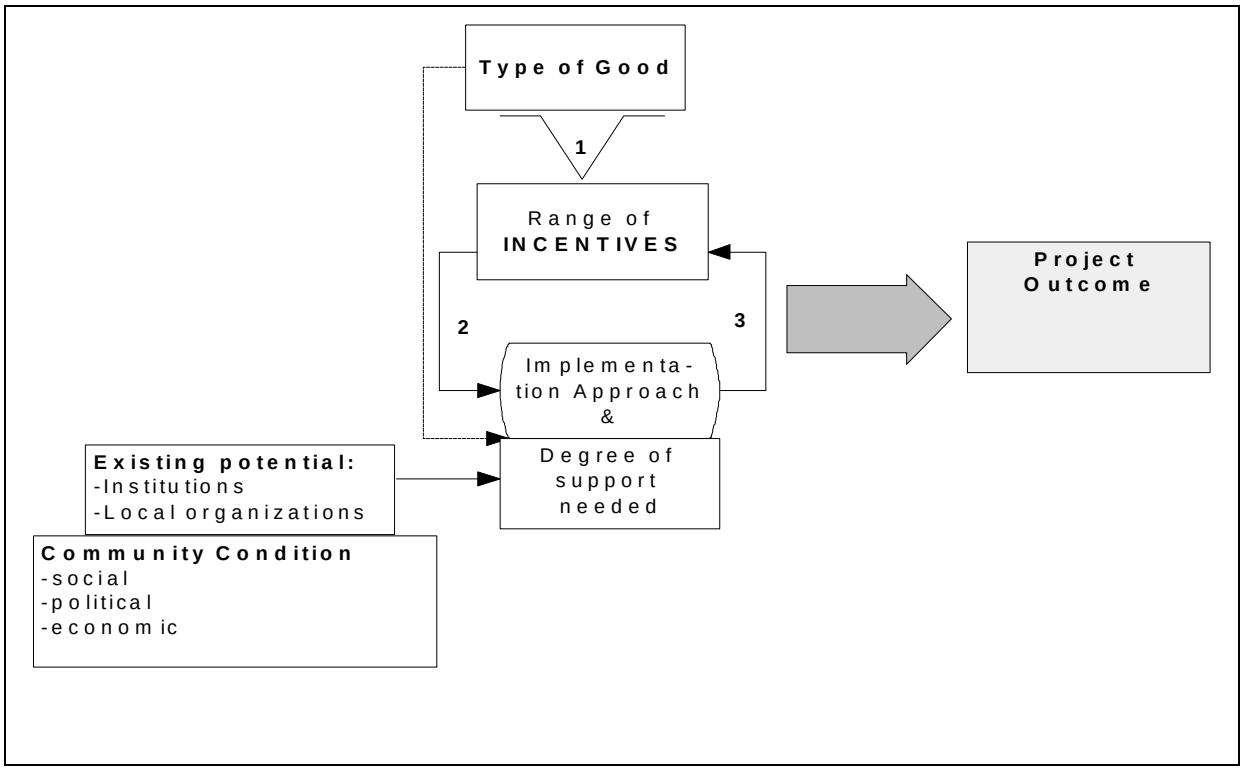
2. *Community capabilities* – reflected by the potential existing institutions and local organisations. Though not directly measurable, the existence of apparently strong institutions and local organisations can greatly reduce the amount of support required from donors or from the central government. This is part of what is commonly referred to in the literature as the institutional capabilities of the communities.

3. *Support needed* from donors and the central government. All the NIPs addressed in this study, like many other development projects, have donor support. This also addresses the question of how long the support should continue before it is phased out.

4. *Implementation approach* – this depends very much on the type of good included in the components of the project and on the degree of support required and actually available.

The four issues, and their interactions to determine the NIP project outcome, are conceptually presented in figure 2 below. Accordingly, at step 1, the good delivered by the project will generate a range of incentives for various actors, including the recipients, either at the individual, household or group level, other community members and groups, and project workers and leaders. Other actors may include the local political and power base. The incentives from the NIPs can be categorised as intended (or direct) and non-intended, i.e. externalities. Income transfers to individuals and households provided by NIPs such as savings from the health services which otherwise the beneficiaries were to purchase, is an example of direct incentives resulting from project goods. Other incentives of the same nature include subsidised prices for various commodities promoted by project and credits/loans offered.

Figure 1: Proposed framework of interactions involved in implementing NIP to determine the project outcome.



Unfortunately, some project goods may not attract the intended beneficiaries despite their potential benefits. Nutrition and health education is such a project good. However, health or nutrition education may attract the related government ministry or agencies, especially when their goals seem to overlap. While direct incentives mainly involve the intended beneficiaries, the externalities accrue mostly to the non-intended beneficiaries. Examples encountered in this study include employment and training opportunities for members of the community in the

CSPD project and other material gains such as transport facilities (e.g. bikes) for the project workers and few individuals who hold certain positions in the community. The project goods and activities may also attract the interest of private traders and business in the project area who may seize the opportunity to supply certain commodities for which the project creates the demand.

Local politicians may also find a project attractive for strengthening their political support in their constituency. Pinstrup-Andersen (1993b) noted that it is essential to design the implementation in such a way that the benefits are shared among the various groups to ensure political sustainability of a project. That is, NIPs should try to include a two-pronged targeting approach aimed at including as many as possible of the most needy but at the same time including the groups (actors) who must provide the necessary support. Each actor will then try to take advantage of the benefits generated (loop or step 2). It is important to note that the various goals and actions of the main players may come into conflict with one another or with the project goal. For example, a health promoting NIP may provide a subsidised formulated weaning food to a family with a severely malnourished child so that the food be used to feed the child. However, given the priorities of the decision-makers in the family the food may be used to feed the others who are less in need. Similarly, the project workers and community leaders may use the facilities meant for project activities for their own other activities. The project workers may also be motivated rather by the material gain than by their commitment to achieve project goals. Driven by short-term profit-making objectives, traders and businessmen may supply poor-quality products to the project, if left unchecked.

The implementation process then becomes an act of trying, first of all, to harmonise the incentive-driven actions of the various actors, especially where it is suspected that access of a few can override that of the others, to guide them to achieve the intended goals of the project. Secondly, implementation is seen here as an act of trying to extend the incentives, especially to the most nutritional needy, who may still lack access or motivation to take part in the project. A typical case is where a certain portion of the population lacks information and knowledge of the importance of good nutrition and the project's opportunities for improving nutrition. This can result in poor motivation to participate in the project and fewer incentives for that particular portion of the population. This is presented in the illustration as step 3.

The success of a project, which, in most cases, is meant to assist the poor and socially disadvantaged, will depend on how effectively the two steps (loops 2 and 3) are accomplished. If, for example, the project fails to institutionalise a mechanism to check the mentioned incentive-driven actions of the various groups or actors and, as a result, the disadvantaged are left out, such a project will fail to achieve the goal. On the other hand, if the project fails to stimulate increased demand for its goods and services in the intended beneficiaries, for example by not providing the needed information, the intended beneficiaries will not be motivated to take part in the project, and the project will fail. A variety of measures can be employed to enhance the success of the two steps. Measures of targeting by restricting the benefits to the intended beneficiaries can be used as one way of regulating the incentive-driven actions of the various

consumers of the project benefits in order to protect those most in need, who may be exclude if entry is not restricted. However, the dangers involved in trying to restrict the benefits to the poor only must be taken into consideration. The dangers include lack of strong political support and therefore poor sustainability of the project (Pinstrup-Andersen, 1993a;b). The empowerment of the special groups considered to be at greater risk can also be used to extend the incentives to such groups. Very often, poor people, and in this case the group most at risk, tend to refrain from taking part in the so-called development projects because they are voice-less and many projects are initiated and implemented without their involvement (Pinstrup-Andersen, 1993a;b). Therefore an approach allowing the involvement of such groups in NIP decision-making, coupled with the provision of knowledge, may help to empower them and therefore motivate them to take part in the project.

The implementation approach will both determine and be determined by the degree of support needed for the project, be it from donors or from the local or central government. If a certain approach, for a given project good, requires the use of some technical equipment which is not locally available, such an approach would then require a higher degree of support from a donor or government, and vice versa. However, the approach may need to be changed if the necessary support cannot be obtained or solicited. The type of project good can also influence both the approach of implementation and the degree of support needed. This is represented by the dotted line in the diagram.

The institutions and local organisations which are potential and present in the community can, to a greater extent, influence the degree of support needed from donors or the government. Where such potential institutions and organisations are present, and are relatively strong, a smaller degree of support will be required. But where such important components are lacking or are rather weak, a high degree of support must be provided. The strength of the existing institutions and local organisations are deeply rooted in the community's social, political and economic conditions. Since the support provided by donors or government has to inevitably stop or be phased out at some point, it is these institutions and the local organisations that have to take over providing for the intended achievements. Projects should therefore work to build such institutions and organisations. Actually, it is suggested that the achievement and sustainability of NIPs should be measured by their ability to nurture such institutions and organisations (Greiner, 1989).

The incentive pattern which determines the outcome of project implementation, that is loop 3, can be influenced very much by the amount of support provided by the donor or government. In other words, even if the incentives generated by a particular project good are very limited, strong donor support can help to compensate by stimulating a different pattern of incentives which may still bring about a seemingly positive project outcome. However, it should be noted that such incentives generated by donor-support will not have a sustained impact. It is emphasised here that while donor support is crucial for NIPs, its ability to compensate for limited incentives generated by project goods is artificial and may be misleading in assessing the

impact of a project. Efforts by the government and project owners should therefore be directed at facilitating the expansion and distribution of incentives from project goods, and at building capable local institutions and organisations.

Now the framework has been suggested, the next section will provide some evidence based on the analyses of the present study.

4.2 Evidence From the Study to Support the Framework

a) Type of project good

As mentioned above, the nature of the project good included in the intervention is crucial for generating the necessary incentives to make various individuals and groups take part in the project. Generally, public and government-type project goods have a very low incentive-generating ability. Because of this characteristic, these two types of project goods require rather continuos support from the donor or the government. If it is not possible to command such support, there is good reason to doubt what can be achieved, in other words, poor performance is likely.

The CSPD (Child, Survival, Protection and Development) and the National Salt Iodation projects are the two projects that included public and government-type project goods. The inclusion of primary health care within the CSPD project, and the health improvement aspect of iodated salt make them public-good projects. The inclusion of growth monitoring in CSPD for surveillance purposes, and the need for salt control by National Salt Iodation, and their enforcement procedures, are all government-type project goods. Because of the cost involved in taking part in the project, in terms of time required for individuals to attend child-weighing sessions (CSPD) or the relatively higher prices paid by consumers for iodated salt (National Salt Iodation), the two generate few participation incentives. The importance of weighing children and that of consuming iodated salt was stressed by the educational components of these two projects but they are not sufficiently convincing to many intended beneficiaries. Attending child-weighing or consuming iodated salt appears to result rather from the ability of the government to impose enforcement rather than from the individual's motivation.

Based on the household economic theory, it is clear that decisions by individuals and households to take part, or not to take part in a nutrition programme depend very much on how the project affects the constraints faced by the households, including resources, time and information (Pinstrup-Andersen, 1993a). A project can only generate incentives to take part, if it is able to reduce those constraints. Because of the weak incentives of public and government-type project goods, the outcomes of the two projects depended, to a greater extent, on the 'push' exalted by key project workers. The key project workers in the CSPD project were the Village Health Attendants (VHAs), while National Salt Iodation had the Health Officers in the districts.

The push which these workers can exalt depends on how motivated they are, again an issue of incentives. The two projects created various incentives for these workers. The VHAs were recruited and paid by the CSPD project, before they were handed over to their communities. For most of them it was a great chance to receive the training and job opportunity, being primary school drop-outs. Frequent training and seminars were a good opportunity to earn an income. This is equally true of the Health Officers working for the National Salt Iodation project. The donor, in this case UNICEF for both projects, also provided the working facilities, including the means of transport in the field. The results of the VHA survey have shown that these workers are probably becoming less motivated, following the phasing out of donor support. It seems that the incentives resulting from the goods themselves, that is loop 2, were weak and therefore loop 3 was dominated by the effect of donor support. However, as mentioned earlier, the completion of loop 3 using the thrust from donor or government support, cannot bring about lasting (sustained) impact.

Contrary to the public or government-type project goods, which generate fewer positive tangible externalities for the intended beneficiaries and other actors, market-type goods have a lot more positive externalities and therefore attract more actors to take part in such projects. An example of such a good is the formulated weaning food by the Totomix project. The product is produced and distributed by a private entrepreneur using the market mechanism. Apart from yielding profit for the entrepreneur, the hospital, which uses the product, also benefits from not having to buy expensive substitutes and not having to painstakingly produce the product on its own. Consumers are also attracted by the rather low price, as compared, for example, to imported substitute products. The product is easy to handle in terms of production processing, which is an added incentive for the producer. He does not need to hire special skills. For the customers, cooking preparations are simple and the ingredients are familiar to them. Other actors, who also take part, include traders and producers of the needed ingredients and owners of milling machines in the area. Because of the strong incentives generated by the Totomix product, less support from the donor seems to be necessary. The donor support was only necessary for training the entrepreneur, at the beginning. In this case, both loop 2 and 3 are strong and the more important thing is that loop 3 is not dominated by the incentives of the donor-support. Actually, the need for donor support is minimal. The existing institutions or organisations within the Totomix project are the consumer shop, which is an outlet for the product, the reputable hospital which creates large demand for the product, the agricultural system which provides the ingredients in the market, and the presence of private commercial millers.

An important policy implication can be derived here, how long should a project be supported by a donor or the government? In other words, how long should be considered sufficient for an NIP to continue receiving such support. It has become common for the various donor agencies to provide project support for up to five years, after which they phase out the support. For the agencies concerned, this strategy is taken in anticipation that after this period the communities will be able to support the activities on their own. However, this study implies a different perspective. It is suggested here that the length of providing the support before phasing

out should be adapted to the type of good delivered by the project. Although it is not possible, based on the present study, to suggest an exact appropriate length of time, projects that deal with public and/or government-type project goods should be supported longer, while those dealing with market goods require support for only a minimum length of time. Between the two extremes above, the time required for the civil and/or common pool type of goods can be found, depending on the actual situation presented by the local institutions and organisations. This question of how long is sufficient for providing project support needs to be investigated further making use of the suggestions provided here, that is by considering the nature of the good delivered by the project.

b) Ability of existing local institutions and organisations to reduce the degree of support needed for a project

All the five NIPs in the present study made use of existing institutions and organisations by varying degrees. Although it was not possible to estimate the actual saving resulting from using such institutions and organisations, the savings have enabled the projects to expand or strengthen their activities. By incorporating its activities within the existing government administration structure, the CSPD project was able to use the government personnel to work for the project without having to remunerate them. Starting at the village and ward levels, the respective leaders automatically became project leaders in their locations, and similarly for the executives at the district and regional levels. It is obvious that the project would have required a huge, and probably unmanageable, budget to be able to pay all the staff involved. The only cost which the project incurred regarding this personnel was the training they needed to instruct them of the project needs.

Contrary to the above arrangement of using existing institutions, the CSPD project purposely created two posts within the health institution set up in Tanzania. The two posts were the Village Health Attendant (VHA) and the Traditional Birth Attendant (TBA). VHAs proved to be crucial for carrying out project activities at the village level, particularly those of weighing the under-five children for growth monitoring. However, the problem was that these workers were to be paid by the project, and therefore added costs. When the project stopped supporting them, requiring the communities to pay them, difficulties resulted, leading to a low motivation for their work. It seems that communities are finding it difficult to maintain this project-created local organisation which does not create enough incentives for the members of the community to pay for it.

Examples of how the other projects were able to use the existing local institutions and organisations to cut the extent of support required from the donor will briefly be mentioned here. The Himo project co-operated with the local schools in the area to grow tree-nurseries and distribute the seedlings to the community. Certainly, it would have been costly for the project to establish, by its own, all the tree nurseries necessary. In carrying out the irrigation components of the MIFIPRO and Himo projects, the two projects made use of the existing local water

management traditions in the respective areas. Thus the projects did not have to think about establishing mechanisms for managing and distributing the water. The cattle-keeping tradition within the MIFIPRO area was taken advantage of, when the project introduced ox-mechanisation. The project did not have to start teaching community members how to raise cattle. As mentioned earlier, the Totomix project made use of the already present consumer shop, reputable hospital, relevant agricultural system, and commercial millers. For the National Salt Iodation project, the use of the existing salt dealers was a good choice.

4.3 Concluding Remarks – Is there Room for NIPs Improvement?

The aligning of institutions for delivering primary health services attempted by some nutrition improvement projects in Tanzania, including the internationally recognised Iringa Nutrition Project, seems to be in disharmony with organisational capacities, and therefore causing high transaction costs. For such projects to be able to maintain their impacts, continued support from the donors and/or the central government is necessary. In other words, it is becoming apparent that delivering primary health services requires a much broarder framework than the nutrition improvement projects are able to provide. The implication here is that, it is still a long way before the government can excuse itself from involvement in providing and facilitating primary health services in Tanzania.

On the contrary, arrangement of institutions for the projects which are not dealing directly with primary health care seems to allow for harmony with organisational capacities and functioning of institutions. However, it should be mentioned here that, the key to such harmonisation, and therefore low transaction costs, will depend very much on how such combination of institutions are selected. The private sector - through the use of market mechanism, and more involvement of the civil society as a way of increasing participation of the beneficiaries, hold the key to success for that matter. The changing economic climate in Tanzania, which was triggered by changes in the macro-economic policies, is most likely to favour such arrangements.

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