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Achieving Food and Nutrition Security: Lessons Learned from the Integrated Food Security Programme (IFSP), Mulanje, Malawi

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giz Agricultural Policy and Food Security

On behalf of Federal Ministry for Economic Cooperation and Development

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On The Cover

Children play by a water cistern constructed as part of the IFSP in Jiga village in Mulanje District, Malawi. The nearby water pump is in regular use today.

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EXECUTIVE SUMMARY

1. This report presents findings of a review of an Integrated Food Security Programme (IFSP) implemented by GTZ in Malawi, from 1997 through 2004.[1] The review contributes to the ongoing international search for best practices in programming for food security. It is not an evaluation in the conventional sense, but a broader assessment of lessons learned.

2. The review concludes that the IFSP in Mulanje was successful in most of its aims. Not only were conclusions of the 2004 Final Evaluation Report confirmed, many of the gains identified then have been sustained. This represents an important "proof of concept" of this particular approach to integrated programming. Successes can be identified as helping bring: a) positives changes in food security (measured by outcomes across multiple sectors); b) changed thinking and behaviors at community level (that persist a decade later where "early adopters" have continued to innovate); and c) new approaches to tackling food insecurity that have been adopted by the public sector locally and nationally. The IFSP has influenced government thinking on food and nutrition security more broadly, leading to many of its principles being embedded in current national policies.

3. In terms of specific successes, child nutrition was improved (reaching the target set of a 10% reduction in the prevalence of stunting), and most sectoral targets were also achieved. Gains that can be attributed to varying degrees to the IFSP include enhanced agricultural productivity and output in several staple crops, the cultivation of an enhanced range of crops (as a result of introduction and promotion of new and improved seeds), and reduced losses to crop and livestock diseases—all leading to higher levels of farm output. This in turn contributed to reduced periods when farm households have no food in their stores, higher household incomes, and increased local investments in productive assets, including in the natural resource base.

4. Beyond agriculture, the IFSP promoted non-farm income diversification activities that have since proliferated, allowing for more diversified livelihoods and disposable income. Access to market (for sale of crops, purchase of food, and engagement in cottage industries) was improved through access road and bridge construction—still well maintained in most instances. The supply of clean water has improved significantly, and maintenance of water points has been good, largely supported through village committees. Access to food-for-work represented an important safety net for food-insecure households who could not immediately benefit from enhanced farm productivity and market access. Improved supply of food and income has supported enhanced diet diversity and quality. A wider range of foods is consumed today than prior to the IFSP, and also compared with most other parts of the country. Food preservation activities have enhanced diet choices and reduced post-harvest losses.

5. The process of community engagement was valuable and valued. Community and government training in problem-solving processes are still in use today. Many village committees are still functional, and the promotion of "demand responsive" models of service delivery had durable impact on the way that public servants conduct their business. The IFSP model was widely promoted in Malawi and its lessons have been incorporated into training and policy agendas since the end of the intervention.

6. A number of broad conclusions emerge. The IFSP represents a model of integrated programming, carefully designed around a core conceptual framework, which achieved its targets. But it is not the only possible model, either for achieving such targets or for

[1] In 2011, the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) changed its name to Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) after its merger with the Deutscher Entwicklungsdienst (DED) GmbH, and Inwent - Internationale Weiterbildung und Entwicklung. This report refers to GTZ when discussing the pre-merger era, and to GIZ in relation to January 2011 and later.

approaching integrated programming as a process. The Mulanje example should be carefully analyzed against other potentially viable approaches in seeking to understand how best to leverage actions across multiple sectors to achieve gains in agriculture, nutrition, and health simultaneously. This matters hugely given current global refocusing on food security and nutrition goals, and cross-sectoral actions to achieve them.

7. The IFSP model appears to have been relatively cost-effective. At roughly US$59 (around €40) per household, or US$11 person (€8) per year, the package of IFSP interventions compares well with a range of other integrated programs in Malawi and elsewhere. That said, not every element of the package worked equally well, with home gardens, some health interventions, and some crops performing weakly compared with other components of the programming.

8. The successful (versus weak) aspects of this activity shone a spotlight on the importance of cultivating leadership for change; that is, engagement of community leaders as stakeholders and the intensive training of villagers in leadership roles and committee processes was critical. So too was establishing appropriate incentives and buy-in across district- and national-level ministries so that "ownership of leadership" was cultivated and service delivery and program implementation all benefitted. And identification and support for early adopters (leaders in innovation) mattered immensely to "start-up" activities in the realm of livelihood diversification. Attention to this process aspect of programming was critical.

9. Questions raised by the review that should frame debate on future integrated programming include: i) Could the same outcomes have been achieved for less cost? ii) If so, what is the minimum versus desirable menu of interventions that would (together) generate the best possible outcomes for least cost? iii) Would the unit cost of the package introduced in Mulanje rise or fall if taken up at scale across the country? iv) Should such packaged interventions seek to promote absolute change or accelerate relative change (to bring "lagging" regions or communities up to par with the rest of their country)? v) Can integrated programs be designed to buffer future shocks, not just resolve pre-existing vulnerability to food insecurity, and what would that add to the cost of a package of integrated services and inputs? Many such questions can only be answered through operations research on a next generation of multisectoral integrated programs—which this review concludes is a reasonable development policy priority.

1. INTRODUCTION

> *"We know what works. The challenge is integrating the delivery of these interventions."*
>
> —Fanzo and Pronyk (2010, p. 1)

The Integrated Food Security Programme (IFSP) in Malawi was a complex, multisector activity that sought to improve food security and nutrition in one of the country's most vulnerable, least-performing regions. Implemented by GTZ (now GIZ) on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ) between 1996 and 2003 (with a 12-month extension supported by the European Union), the IFSP's end-line evaluation reported that the intervention had achieved its objectives. It was noted that "the programme made a significant contribution to the food security of the people in the impact area," and that "the approach taken…was good" (DeGabriele 2004a, p. 4).

That being the case, why revisit it now? In part, because it is useful to consider whether gains made in the past have been sustained. But more broadly it is because there are lessons to be drawn from this example that may contribute to new thinking on models of integrated, multisectoral programming updated for the twenty-first century. This review comes at a time of renewed attention to food security and nutrition as priority development challenges, on the one hand, and to the potential for integrated programming (that links agriculture, nutrition, and health), on the other hand. A heightened focus on food security, particularly since the upward pressures on food prices globally since 2007, has led to a flurry of responses, including group commitments like those made by G-20 leaders at the 2009 L'Aquila Summit (US$22 billion over three years to agriculture and nutrition), as well as other contributions to food security trust funds like the European Union's Food Faculty and the World Bank-managed Global Food Crisis Response Facility. It also resulted in a reorientation of priorities among some individual donors, such as the US Feed the Future initiative (USG 2010), which puts a premium on tackling low productivity in agriculture *and* low productivity in people due to malnutrition and ill health. Similarly, the British government recently acknowledged nutrition as an integral element of any actions taken to tackle food insecurity (DFID 2010).

But how best to "integrate" actions across sectors? Recent efforts to collate empirical evidence of programmatic and policy effectiveness have included the 2008 *Lancet* series on maternal and child undernutrition, the World Bank's costing exercises on how to scale up nutrition actions (Horton et. al. 2010), and related nutrition landscaping exercises by WHO, the Bill and Melinda Gates Foundation, and the *Scaling Up Nutrition* alliance (SCN 2010). Additional reviews have focused on agricultural effectiveness (Timmer 2009; IFPRI 2009), the quality and role of food aid programming (Webb et al. 2011), and the potential for leveraging agriculture to support gains in health and nutrition (Fan and Brzeska 2011).

Each of these increasingly convergent agendas has recognized two core principles: food security can only be effectively achieved through joint, coordinated action that addresses agricultural productivity, nutrition, health, and natural resource management simultaneously; and country ownership and local capacity have to be enhanced if any gains in agriculture or nutrition are to be sustained. As argued by the UN Standing Committee on Nutrition (UN/SCN 2009, p. 1), "food security approaches to nutrition require systemic, multidisciplinary and inter-sectoral approaches."[2]

[2] Many countries now echo that sentiment, such as Nepal, whose government has called for "integrated delivery models [to tackle undernutrition] established at the community level through understanding and developing the capacity of existing structures, and through testing of different models for counseling, addressing food availability and affordability, and strengthening existing efforts" (GoN 2009, p. 2).

However, the empirical evidence remains limited of what actually works on the ground where attempts are made to introduce packages of interventions that address multiple sectors at once. Since the mid-1990s, there has been a move toward dealing with nutrition more comprehensively rather than piecemeal, and the concept of "essential" or minimum packages of inputs and services has been gaining traction (SUN 2010).[3] This typically involves various combinations of enhanced food products for therapeutic and/or supplementary feeding, immunizations, micronutrient supplementation, nutrition and health education, antenatal and postnatal care, deworming, growth monitoring and promotion, and, where possible, provision of access to clean water and sanitation (Iannotti et al. 2009). Yet, while this kind of approach does represent integration of multiple activities, it is not strictly multisectoral. Are there equivalent "essential actions" in agriculture or livelihood enhancement that can be matched with packages in nutrition and health? How best to integrate and sequence them?

BMZ and GTZ sought to address such questions during the 1990s with a series of integrated programs around the world. Country experiences varied, with programs more or less successful depending on local conditions (GTZ 2002); but in every case valuable lessons were recorded. In this sense, the German government was ahead of the international policy curve in its support for carefully conceived, intricately designed intersectoral programming—the rest of the world is only now taking on this thinking as a priority.[4]

The current review of a single case study from the 1990s cannot answer all the important questions that are now raised about what to do, how to do it, and where; however, it can contribute insights to such discussions, and make broad recommendations about key problems that need to be addressed in the design of any future integrated programming approaches.

1.1 Approach Taken by the Review

This review was conducted over a period of five months (November 2010 through March 2011) by a team consisting of Patrick Webb (mission leader), Christa Roth (team member), and John Mwanja'ani (research assistant and field facilitator). There were two field trips: a first (exploratory) period of 10 days during November 2010, during which Christa Roth and John Mwanja'ani made preliminary contact with key stakeholders, identified data sources and relevant reports, and planned for site visits to villages. That was followed by two weeks in the field by the full team during December 2010.

The findings presented here rest on three kinds of information: first, documented evidence (project, consultant, and published reports); second, insights shared by various experts and stakeholders; and third, direct (firsthand) experience from the village visits. Documented evidence derived from a number of sources, including: GTZ internal reports, consultancy reports, government of Malawi publications and unpublished data, and information gained from many donor, NGO, and other agency sources. Documentary evidence was complemented by interviews with multiple stakeholders in Mulanje, as well as in Blantyre and Lilongwe (see Appendix 1, which lays out the itinerary and key people met). The field visits included interviews with ministry personnel at district level, as well as extensive focus group and one-on-one interviews in villages across Mulanje and also Phalombe District. Villages were visited based on the following criteria:

- Early adopters versus later adopters (villages included from the outset of the IFSP in 1997 versus those included later)

[3] This has been happening in emergency programming as well as in development setting. For example, in 1999 East Timor requested emergency appeal funds "to improve nutritional status…through renewed agricultural production," and a decade later, many countries in Africa sought resources through the Consolidated Appeals Process to promote nutrition via diversified crop production, training on crop diversification, and supporting private seed voucher redemption outlets, etc. (Webb 2009).

[4] See BMZ (2011) for its most recent strategy position regarding rural development and food security.

- Villages that recorded positive nutrition gains over the course of the IFSP versus those that were less positive
- Villages that served as "controls" in Phalombe District (prior to that district's separation from Mulanje)
- Villages with specific examples of "success stories" versus "failures"

Efforts were made to consult widely with village elders and local authorities (including formal traditional authorities), village committees where they are still functioning, and local experts in various sectors (including merchants, health providers, and business people). Visits were made to commercial enterprises involved in the retail of agricultural inputs or with interests in the food value chain (to gain understanding of changes in demand for seeds, fertilizer, and food). A trip was also made to the Millennium Development Villages near Zomba (Mwandama), to examine another model of integrated food security programming. Additional interviews were conducted by the mission leader with experts outside the country who have Malawi-specific experiences or relevant understanding of approaches to integrated policies and programs.

It is important to emphasize that this review takes a broad view of the IFSP Mulanje experience; it does not represent a formal evaluation, nor can it be seen as a cost-benefit study. There are limits on our ability to attribute findings in any statistically significant manner. On the one hand, the IFSP could not maintain "pure" control groups due to: i) administrative re-districting in the late 1990s that removed original control villages from Mulanje District; and ii) the near-ubiquitous presence of other agents of change both across Mulanje and beyond. For example, the Millennium Development Villages have faced the problem of being unable to prevent "leakage" of ideas, let alone inputs/services, to non-target villages,[5] and it has been noted for other parts of Malawi that it is impossible to prevent "leakage of project intervention into control communities" (Kerr et al. 2010, p. 6). On the other hand, important policy initiatives were implemented by the government of Malawi during and after the period of IFSP implementation, leading to significant improvements in agricultural output growth since 2006 (described later). This makes understanding the contribution of the IFSP many years after program completion challenging. Some integrated food and nutrition security programs in Malawi have not bothered with control villages, relying instead on beneficiary evaluation (feedback) on the benefits and drawbacks of the intervention (FAO 2007; Venton and Siedenburg 2010). Like the Millennium Villages, such interventions do not account for secular change, and this inevitably impacts the credibility of their findings (Clemens and Demombynes 2010).[6]

While this review makes no claim to being able to ascribe causality to the IFSP versus any other influences, an attempt is made to draw inferences about the role of the intervention where expected outcomes were achieved (as documented in the end-line evaluation) by means of careful post-hoc interviews with those directly involved (beneficiaries as well as implementers), an assessment of the plausible links between inputs and outcomes, and triangulation across multiple sources of data dealing not only with Mulanje but with its neighboring districts as well. Considering an integrated agriculture-nutrition program in northern Malawi, Kerr et al. (2010, p. 6) concluded that, "although it is impossible to separate the secular trends from project effects, there appears to have been an improvement over initial conditions." This review sought to understand if the same could be said for Mulanje, and if so, to explore the means by which it was achieved and how replicable those might be for other contexts in the future.

[5] Personal communication with the Millennium Villages project coordinator for Malawi, December 2010.

[6] For example, food security impacts in north western Malawi were attributed to an integrated program by Venton and Siedenburg (2010), because that intervention was claimed to be the only significant development initiative in the target zone.

2: DESIGN AND IMPLEMENTATION OF IFSP IN MULANJE

The Mulanje activity of the mid-1990s did not stand alone. The various multisectoral programs supported by BMZ around the world were framed by the still-evolving concept of food security as an integrated problem requiring mutually-reinforcing solutions; in other words, the goal was not just to support higher levels of food production but also to promote a more diverse range of foods produced, processed and stored, and consumed as part of an enhanced diet—all framed by actions that supported market integration, employment opportunities, and improved health.

The 1996 World Food Summit formalized a widely-adopted definition and conceptual framework for "food security" that was framed by three main pillars: "food availability," "food accessibility," and "food utilization"—where access included both physical and economic dimensions, and utilization included health as well as nutrition parameters (FAO 1996). That same year, BMZ and GTZ initiated the IFSP in southern Malawi based on this integrated concept (Figure 1). Activities were designed to address each of the three pillars of food security aimed at supporting more food consumption per person in the affected district, and better use of food that was available. Thus, while the overall objective was to enable the local population to "meet its basic needs with regard to food and nutrition," interventions were planned across multiple sectors, including health services, clean water delivery, family planning, income generation, enhanced food preparation, and more.

The intervention encompassed 185 villages (roughly 40,000 households). Mulanje District was selected because it represented "an area which has chronically suffered the greatest food deficit over the last 10 years, compared to other areas in Malawi" (Immink et al. 1995, p. 11). An obvious manifestation of the severity of local problems showed up in the causes of pediatric mortality in Mulanje District Hospital—which in 1993 were reported as i) malnutrition (21% of cases), ii) malaria (19%), and iii) anemia (11%) (Immink et al. 1995). In 1997, malnutrition and anemia were still among the top three causes of death locally (at 18% and 14%, respectively), with HIV/AIDS having taken over first place (GoM 1999).

Figure 1: Conceptual Framework Used to Design the IFSP

<table>
<tr><td>GOAL</td><td colspan="6">FOOD SECURITY IS STABILIZED (STUNTING RATE)</td></tr>
<tr><td>Benefits</td><td colspan="3">More food per household member</td><td colspan="3">Make better use of food</td></tr>
<tr><td></td><td colspan="2">AVAILABILITY</td><td colspan="2">ACCESSIBILITY</td><td colspan="2">UTILIZATION</td></tr>
<tr><td></td><td colspan="2">More food from own production</td><td colspan="2">More food through markets and transfers</td><td>Less disease pressure (food used to build up a healthy body)</td><td>Better food preparation (not to lose nutrients)</td></tr>
<tr><td>Areas of intervention</td><td>Agriculture</td><td>Family planning</td><td>Income generation</td><td>Food-for-Work to overcome acute food gaps</td><td>Health (including AIDS)</td><td>Water</td><td>Food preparation (including household energy technologies)</td></tr>
<tr><td></td><td colspan="6">Capacity to plan and implement food security measures</td></tr>
<tr><td></td><td colspan="6">Village security management to improve security of food production</td></tr>
</table>

Source: IFSP project documents

The initial roll-out villages were chosen largely because at that time they had "no interventions by other donor agencies" (Schultink 1996, p. 4)—in other words, they were seen as "pristine" and more likely to demonstrate changes more clearly in the absence of other donor activities.

Importantly, the program's concept and approach were consistent with national priorities. The country's Poverty Alleviation Programme (PAP), launched in 1995, was a multisectoral activity involving many development partners, including the World Bank, IFAD, and German Technical Cooperation (GTZ). Another key food security policy instrument of 1995 was the government's *National Plan of Action for Nutrition*, which identified priority intervention areas including: a) improved household food security; b) measures to address micronutrient deficiencies; c) targeted assistance for nutritionally vulnerable groups; d) improved child feeding practices; and e) the incorporation of nutritional objectives into all national food security programming (WFP 2001). In other words, at the time of IFSP's conceptualization and early implementation, there was a growing recognition in Malawi's government, and among its development partners, of the need for a combined focus on food security *and* nutrition, and that carefully coordinated multisectoral actions were needed to address both.

The feasibility study for what was originally called an "integrated *nutrition* security project" was carried out in 1995. From the outset, the IFSP's approach included key cross-cutting process elements such as community participation, institutional capacity-building, and multisectoral actions "to exploit synergistic effects on nutritional status" (Immink et al. 1995, p. 3). A baseline was conducted (Schultink 1996), and operations began shortly thereafter (Table 1).

After the end of BMZ support (September 2003), the EC funded an extension for additional 12 months. The EC funding broadened the IFSP's scope to include the active promotion of regional and national mainstreaming of the IFSP's concepts and approaches. Then, when funding focused on food-security ceased to flow in September 2004, the Program for Biomass Energy Conservation (ProBEC), funded by the German and Netherlands governments (but still implemented by GTZ), converted the IFSP offices into a training center and shifted the focus of local activities. The IFSP acronym was re-interpreted as "Information Centre for Food & Fuel Security Promotion."

Table 1: Major Milestones of the IFSP Mulanje Activity

Date(s)	Key activity or report
1995	Feasibility study – Immink et al. (1995)
1996	Baseline study – Schultink (1996)
1997	Initiation of activities in six core villages
1998	Mulanje District halved in size with loss of control villages
1998-2002	Proliferation and scale-up of activities across the District
2002	Follow-up (end-line) survey of child nutrition—Weingaertner (2002)
2003	End of BMZ support/EC bridge funding provided
2004	Wind-up of IFSP activity as originally conceived
2004	End-line evaluation—DeGabriele (2004a)
2010/11	Lessons learned review—Webb (2011—this report)

3. PERFORMANCE OF THE IFSP IN MULANJE

While the IFSP was declared a success in 2002 (measured against its own objectives), it has to be understood that improvements in food security and nutrition are not the same as a resolution of food insecurity or malnutrition. Malawi is still food insecure, ranking 160th out of 181 countries on the Human Development Index (2009), with 40% of its population living on less than US$1/day (GoM 2009a). As of October 2010, roughly 508,000 people (42,000 of them in Mulanje District) were facing "food shortages during the current agricultural consumption year," and "all districts in the Southern Region had some population at risk [of] food insecurity" (MVAC 2010, p. 4). Nevertheless, the situation today is significantly better than it was when the IFSP was being planned.

3.1 The National Picture

In the mid-1990s, a United Nations report noted that "many of Malawi's small and marginal farmers are becoming steadily poorer and progressively more at risk because of drought and crop failure, hence increasingly food-insecure" (WFP 1997, p. 1). Another report, by the Food and Agriculture Organization, projected that national food deficits would increase substantially towards the end of the 1990s, due to falling investment in agriculture and prevailing policy changes that removed subsidies on farm inputs as part of a structural adjustment program, continued erosion of agricultural extension capacity, a slow uptake of higher-yielding varieties of maize seeds that were available, and the growing toll of HIV/AIDS (WFP 1997, p. 3).[7] In other words, the future looked grim.

Yet, conditions have improved, gainsaying the worst of the predictions. Cereal yields nation-wide climbed from a mean of one metric ton (MT) per hectare (ha) in 1997 to almost 2.5 MT/ha in 2007 (World Bank Databank).[8] Annual growth in GDP per capita hovered around 0% in 1997/98, compared with 6% a decade later, and reaching 7.7% in 2009 (World Bank Databank). Many factors contributed to this improvement. First, rainfall improved from the late 1990s onwards (despite some individual years when conditions were extremely difficult). Second, conflict was resolved in several neighboring countries, which allowed for repatriation of large numbers of refugees, many of whom had been concentrated in the Southern Region, including in Mulanje. Third, the government introduced important initiatives to boost farm output nationwide.

For example, an Agricultural Productivity Investment Programme was launched in 1996 to increase productivity among smallholders through the provision of credit, as well as a "Universal Starter Pack" (1998) activity and a "Targeted Input Programme" (2002), which were replaced in 2005 by a targeted "Input Subsidy Programme." According to Levy (2005), the Starter Packs added on average 100 kg to 150 kg of maize to farmers' harvests and up to 400,000 metric tons to the national harvest, thereby cutting the national food deficit. The Targeted Input Programme added 3% to 4% to smallholder maize output in 2002 compared to the 16% attributed to the Starter Pack in 1999 (Devereux 2010). The Agricultural Productivity Investment Programme ended in 2005, replaced by the government's Input Subsidy Scheme in 2006, which has provided farmers with fertilizers and seeds at substantially subsidized prices. This initiative has been credited with raising yields and output to such a degree that Malawi has been dubbed "the cradle of Africa's green revolution" (ScienceDaily 2010, p. 1).

While the relative contribution of rainfall versus subsidy remains an open question, maize output did increase from 855,000 MT (total output) in the mid-1990s to more than six million MT in 2007 (FAO 2008a; Devereux 2008; Ricker-

[7] Out of 17 trained agricultural extension workers in Mulanje District who collaborated with the IFSP during 2000, only five were still available in 2003. Of the other 12, one had retired, one moved to another district, and 10 were dead of HIV/AIDS. Personal communication, Mulanje District agricultural service, December 2010.

[8] World Bank Databank. **http://databank.worldbank.org/**. Last accessed January 16, 2011.

Gilbert et al. 2010). Some of the increase can be attributed to new area brought under cultivation; area harvested in Malawi roughly doubled from 157,000 ha in the mid-1990s to 361,000 ha in 2007 (FAO 2009). But productivity has also increased such that the agricultural GDP of people engaged in agriculture rose from US$47 per capita in 1994-96 (in constant 2000 dollars) to US$59 in 2007 (FAO 2009).

Increased output brought food prices down (despite the hikes in world food prices since 2007), and enhanced accessibility even in remoter areas. As a result, the volume of food aid received by Malawi has declined. From 1990 to 1997 (the start of the IFSP), not a year passed when Malawi was not receiving at least 120,000 MT of food aid, peaking at 538,000 MT in 1993, and averaging 267,000 MT/year over that period (WFP 2011).[9] By contrast, the average for the last three years of the 2000s amounted to only 86,000 MT/year, and much of that was destined to support school feeding activities rather than emergency interventions.

Higher yields, greater area under cultivation, increased agricultural output, and reduced food aid needs have all contributed to a rapidly-improving food balance sheet during the 2000s, and a fall in the prevalence of chronic undernourishment from 36% in 1995–97 (at the start of the IFSP) to 28% a decade later (2005-07) (FAO 2010). This performance led FAO to note that Malawi was one of the countries "that have achieved the steepest reductions in the proportion of undernourished" during the first decade of the twenty-first century (FAO 2008b, p. 13). In other words, while still a cause for concern, food security has demonstrably improved across the country since the period of IFSP implementation. The three key questions to be addressed here are: i) Were these gains also manifest in Mulanje District (which during the mid-1990s had been identified as having some of the deepest food insecurity problems in the country)? ii) Were gains attributable to the IFSP, and did they lay the ground for sustained improvements since the end of the program? and iii) If so, how?

3.2 The Mulanje Setting and Program Impact

At the time of IFSP inception, GTZ documents reported that Mulanje District was characterized by deep poverty and widespread vulnerability, even by Malawian standards. The region around Mulanje had one of among the highest population densities of this densely-populated nation.[10] The percent of adult women in Mulanje during the 1990s with a low body mass index (BMI <18.5), reflecting chronic problems impacting female nutrition, was the highest in the whole country (MMJ 2006). And it was reported by GTZ that "smallholders in Malawi's Mulanje District were not able to produce sufficient food to feed their households for more than six months and were seriously threatened by hunger. The proportion of children younger than five who were too small for their age was almost 60 percent, far above the national average" (GTZ report, undated, p. 1). In other words, human needs were huge, but this was not, *prima facie*, a setting well-suited to making rapid gains in agricultural productivity, livelihoods, and nutrition.

Yet it did. Substantial progress was made in each of these areas during the implementation of the IFSP, its major goals were achieved, and many of the successes *have* been sustained. The following sections describe these gains; they are presented as clusters of issues organized according to the core pillars of the IFSP (as presented in Figure 1 above). That is, discussion of Availability is followed by Accessibility and Utilization, with additional cross-cutting issues (village security, planning capacity, etc.) dealt with at the end. Particular attention is paid to the main intervention components which were seen as the vehicles for program impacts; namely, agricultural and agroforestry activities, clean

[9] A large part of the food aid during the early 1990s was destined for refugees. Mulanje District's own resources were strained by large numbers of Mozambican refugees until around 1993, many of whom were located in camps in Phalombe District, next to Mulanje. In later years, food aid also arrived to meet emergency needs of local households, including food-for-work that was conducted as one early component of the IFSP.

[10] Census data for 1997/98 showed that Mulanje District had an average of 208 people per square kilometer—almost double the national average (GoM 1998).

water provision, promotion of changes in food preparation, and income-generating activities.

3.3 Availability (of food)

Mulanje District was still food insecure during 2011 (MVAC 2010); but nowhere near as food insecure as during the mid-1990s. Improvements in productivity and output are: a) widely reported by farm households; and b) documented by Ministry of Agriculture and Food Security data; while c) the agricultural economy is manifestly vibrant, with retailers reporting increased demand for quality seeds and fertilizers, and not only those covered by government subsidy.

3.3.1 Crop yields have increased.

There has been strong uptake of improved technologies and management practices across Mulanje, even prior to the support given to farmers through fertilizer and seed subsidies. As shown in Table 2, it is not simply maize (the main staple) that has benefitted from productivity gains. Cassava, sweet potato, and groundnuts have also shown increased yields per hectare, and other crops (like pigeon pea and beans) have become important mainstays of the local production system, usually intercropped with other cultivars.

The gain in yields (which served to underpin expansion in area cultivated as farmers began to witness the returns on investments in improved inputs) were made possible through better seeds and fertilizer use, expansion of irrigation, good rains, enhanced extension services (in multiple sectors), and growing consumer demand. Engagement of Mulanje farmers with the opportunities presented to them was critical. In 2002, it was reported that 95% of IFSP households had adopted at least one of the innovations promoted—it appears that few of the adopted practices or technologies were subsequently dropped. Thus, the yield targets set for the IFSP were all achieved (and often exceeded) for most crops. Yields have continued to increase since the end of IFSP (2004), supported by the government subsidy programs, more consistent rainfall, and a continuing local belief in the value of household investments in agriculture.

3.3.2 Crop diversity has increased.

That is, interest in adopting new farm technologies and making greater investments in agriculture was not focused on a single crop. Most reports dealing with Malawi from the 1990s make reference to the country's "dependence" on maize; for example, Mughogho (1990, p. 31) refers to the government's formal food security objective, which was "self-sufficiency in the dominant food crop, maize." As a result, smallholder farming

Table 2. Changes in Crop Yields in Mulanje District over Time (Metric Tons Per Hectare)

	Baseline (1995/96)	IFSP goal (2000/01)	Post-project (2005/06)	Recent (2008/09)
Improved maize	1.2	1.6	2.2	3.8
Local maize	0.6	1.0⋆	0.6	1.1
Cassava	5.0	9.0	15.6	22.1
Sweet potato	10.0	12.5	15.9	24.4
Groundnuts	0.6	0.7	0.7	1.1

Source: Project planning and monitoring documents and data from the Ministry of Agriculture and Food Security

⋆ Extrapolated from the Project Planning Matrix (Version 2) dated September 1998

> *"We used to believe that the word 'food' meant maize; just maize. Now, we understand that sweet potatoes, cassava, sorghum, even pumpkins can be regarded as meals, not just snacks. When I think this way, I realize that I'm more food secure than I ever imagined."*
>
> —Mr. Chikopa, Mulanje District, December 2010

was defined by how many hectares were under maize each year, and by how many months of maize provisioning was available after harvest. Consumer understanding of the meaning of "hunger" was framed by maize tonnage.

Today that is much less the case. Although reliance on maize as a staple persists, many households, and most government officials, voice a different understanding of what "food insecurity" represents: that is, it is not simply the absence of maize, but an insufficiency *of food* in both quantity *and* diversity. As reported through female focus group interviews in several villages, the local understanding of hunger and lack of food have changed for good.

It is noteworthy that in 2010, households in Mulanje produced "a good crop of sweet potatoes, cassava, and pigeon peas" (FEWSNET 2010, p. 5). Each of these crops tends to be intercropped with maize and other grains or legumes, representing success on two fronts—adoption of "new" crops for food (reducing the focus on maize) and adoption of enhanced farm management techniques to increase yields of all cultivars.

A study of adoption of agricultural innovations in 2001 interviewed 775 households in 31 of the 185 IFSP villages (Mukumbira 2002). It reported that the mean number of innovations adopted by participant households was four (per household).[11] Some of the most important innovations still widely in evidence across the district include: i) planting of improved varieties of pigeon-peas (for use as fuel and ground cover, not just food); ii) intercropping of sweet potato and cassava with grains and legumes, and their entry into the diet as staple foods alongside maize; iii) planting of fruit trees on private plots, not only along feeder roads (as was done during their construction under food-for-work activities); and iv) wider adoption of "new" plants such as ginger and aloe vera. Several of these (former) innovations have now become common practice. Pigeon peas are in evidence in every community visited for this review, and while not planted on every single farm, they are sufficiently widespread as to be classed as a staple crop of the district.[12]

3.3.3 Agricultural assets have increased.

There are more livestock (ruminants, poultry, and pork) in Mulanje than before the IFSP, investments in water-point maintenance continue, many households have invested in bicycles (used to carry produce to market), while new home constructions and improved building materials are evident across the district. Three of the IFSP components should be singled out as having had sustained impacts at scale, with multipliers in the form of income generation activities: namely, improved management of natural assets (soil and water), maintenance of a flow of clean water, and agroforestry.

First, improved natural resource management has taken hold across Mulanje (compared with neighboring districts and other around Zomba and Lilongwe). There is widespread use of check/box dams and contour bunding to control water flow and soil moisture, marker ridges around fields are frequently planted with vetiver grass, cassava, or pigeon pea sticks, and soil bunds are generally well maintained. Trees that were planted along

[11] Roughly 19% of sampled households had by then adopted six or more different agricultural innovations.

[12] It has been reported that Malawi has proven to the rest of the world that "shrubby, grain legumes can enhance environmental and food security" (Snapp et al. 2010, p. 1).

roadsides through IFSP food-for-work have largely survived (which is a big success compared with similar activities in other countries) and in some communities are still very well maintained. Some plantations along river banks have made it through more than a decade—evidence of effective protection and management at community level.

Second, the management of water points has also been *largely* successful. There are disused pumps dotted around the district, but investigation of why they are out of use usually led to the conclusion that they had been poorly situated in the first place and/or there was a problem with a falling water table that had contributed to their demise. In a few cases, poor management of the pump itself could be blamed (a lack of protection against theft of parts and ineffective management of funds to purchase spares), but these appear to be the minority of cases. Functioning water points are typically clean, weed-free, well-maintained, and heavily used, contributing a great deal to clean water consumption in the communities served. Improved access to clean water has been an important health asset for these populations.

Third, large numbers of trees were established as plantations, along roads and on denuded hillsides through food-for-work (FFW). Tree planting has not always had a good success rate in other countries given the tendency for undermined responsibility for maintenance and a lack of incentives for protection of saplings where only a few individuals would gain from their growth (von Braun 1995). However, there was a change in policy in 1997 which made forests public goods (versus private assets), thereby supporting IFSP tree planting and their protection by Village Tree Committees. As a new commonly-held asset, communities were trained in care of the saplings (pruning, judicious coppicing, etc.) and protection (keeping watch that no trees were cut for private gain). There is ample evidence today of the success of this innovation, including tree-lined roads, small fruit-tree plantations, and the sale by individuals of fruit-tree saplings (for further planting) as a source of profit.

3.3.4 Crop losses due to pests and diseases have declined.

While data on disease and pest outbreaks are not easily available (and are poorly tracked at district level), feedback from extension agents and farmers suggests that IFSP trainings in the management of army worm and poultry problems (Newcastle disease) seem to have paid off, with fewer reports of recent outbreaks and diminished concerns about these particular threats.

3.3.5 Weaknesses or failures in improving availability.

Not every element of the IFSP was successfully maintained. Some promoted crops did not do as well as others. For example, the adoption of soya and improved groundnuts was not good in the early years of IFSP mainly for reasons relating to unsuitable agroecology and the relatively better performance of other new crops, which led farmers to make their choices early on. While some farms do cultivate soya and groundnuts in 2011, they are not widely in evidence and yields remain low (as evinced for groundnuts in Table 2). Another crop, Open Pollination Variety (OPV) maize, was successfully introduced in the first years of IFSP, generating higher yields than local varieties of maize. However, several years after the end of the intervention the government banned the use and promotion of those seeds, leading to their replacement by government-sanctioned hybrid varieties supported under the subsidy program.

Another component that was not wholly successful was the promotion of home (kitchen) gardens, as opposed to traditional gardens located away from the home, and "exotic" vegetables or fruits destined for market. Home gardens are internationally promoted as a key to diet diversity and nutritional improvements at household level. In Mulanje, adoption did not take off, in part because there was no prior tradition of using home-based plots for cultivation of vegetables. The latter are traditionally grown near water points in fields, while land owned near the home is commonly planted with maize and other staples. If vegetables and fruits are to be a core aspect of the

drive towards diet quality, this element requires careful problem analysis and appropriate planning. In other words, it should *not* be assumed that "promoting more vegetable production" will be a relatively quick win in this kind of context.

3.4 (Physical and Economic) Access to Food

Although Mulanje District was considered to be one of the poorest parts of the country in the 1990s, a decade later only 10% of its inhabitants fell in the lowest income quintile (WFP 2010). Today, other parts of Malawi have a larger share of their population in the lowest quintile, including the Kasungu Lilongwe Plain and the Shire Highlands (Figure 2). While having 10% of population in the lowest quintile is still unacceptable in real terms, the relative gains made in Mulanje since the 1990s are manifest in this shift in *relative* deprivation across the country. Such gains can be attributed in large part to the progress in agriculture overall (supporting increased household purchasing power), but also to diversification of livelihoods beyond agriculture and in enhanced accessibility of households to markets.

3.4.1 Livelihoods are more diversified.

Compared to baseline conditions, income sources have proliferated and expenditure levels are considerably higher than at the start of the IFSP, including the sale of products new to the local economy (honey and popcorn to schools, "energy drinks" to church gatherings, medicinal drinks to those with chronic infectious diseases, clothes tailoring, etc.). The diversification of income sources is particularly obvious among early adopters who have in many cases applied lessons from one commercial activity to build others. For example, a woman in Nkando village, who had received training as a stove producer, made a good profit from selling her stoves (as well as from training others in stove making), then invested the profit in beekeeping, which itself was promoted by the IFSP both through training and establishment of beekeeper associations. The honey production made further profit, with production often based around the forests planted under FFW. Understanding the importance of diversifying income, she acquired a sewing machine to start a tailoring activity over which she has put her husband in charge. She continues to seek new opportunities for non-agricultural income growth based on the entrepreneurial skills imparted her by the IFSP.

The diversification of income, and higher off-farm income, appears to be supportive of enhanced ability to cope with variability in food prices, and with production shocks and other forms of livelihood shocks. For example, when households interviewed for the Comprehensive Food Security and Vulnerability Assessment were asked to identify how many shocks they had experienced in the preceding 12-month period, those in the Mulanje area reported the highest number of shocks (42 percent referring to three or more shocks in the year, compared to the rural Malawi average of 16 percent having three or more shocks) (WFP 2010). The most common shocks reported were (in order listed): i) hikes in agricultural input prices; ii) drought/ irregular rainfall; and iii) illness/death. Households in Mulanje were, on the whole, able to withstand these kinds of negative impacts as a result of income diversification, prior savings, and ability to borrow against future agricultural output (and of course recourse to wage labor on the tea estates).

3.4.2 Market access has improved.

The construction of roads, bridges, and culverts as part of the food-for-work (FFW) activity was well planned (having appropriately high technical specifications, and involving local communities in layout decisions), and this contributed to the growth of cottage industries around the district—from production of improved cooking stoves (which are hauled to distant regional market towns for sale) or multiplication of fruit tree seedling, some of which are in demand in adjacent districts. Enhanced market access has also allowed for better price transmission at harvest time (the checking of prices in multiple markets by cell phone is no longer a rarity in Mulanje). The quality (sustainability) of IFSP roads appears to be markedly better than comparable contractor-built (EC-funded) roads. Maintenance by trained village committees is still ongoing in many places, albeit to varying degrees of intensity.

3.4.3 Income transfers (via food-for-work).

The severity of food needs in the mid-1990s led the World Food Programme (WFP) to implement FFW schemes in multiple districts in the 1996/97 to 2001/02 period. GTZ collaborated with WFP in the Mulanje component of that activity, as well as implementing activities directly supported by the German government, targeting constructing of access roads and bridges, construction of small dams, laying of public water pipes, and various aspects of natural resource management. Large amounts of food were distributed under the IFSP's FFW window: project documents report that roughly 7,500 MT of maize were delivered to more than 72,000 households (cumulative total) during the six seasons of work. That is, 10,000 or more households benefitted each season (on average), and many were engaged over multiple years. That level of activity represented more than 2.3 million workdays created, against a target of around 1.9 million (320,000 per season).

The physical outputs of this important IFSP activity were many, including 400 km of roads constructed (a significant achievement for a single district), two to three million trees were planted (with a 78% survival rate overall), and additional kinds of infrastructure, such as more than 200 bridges. As noted, many of these assets still survive, and where bridges have collapsed (in storms or due to damage from overloaded vehicles) or roads have been washed away, there is a strong sense in the affected (cut-off) communities that a major benefit from the IFSP has been taken away from them. In other words, the FFW component was explicitly designed to achieve both short-term (consumption smoothing) and long-term (asset creation and income flow) objectives and appears to have succeeded in both cases.

Lasting impact of the short-term income transfer (in the form of food) is impossible to assess more than a decade after the fact. Several groups of (older) respondents responded positively to the experience of FFW during the early days of the IFSP. For those who remembered the experience,

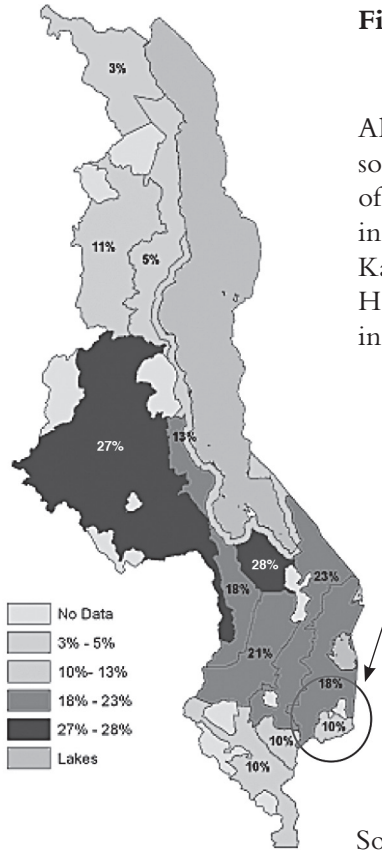


Figure 2: Distribution of the Poorest Wealth Quintile

Although Mulanje District, and other parts of the southern zone, were considered to be the poorest parts of the country in the 1990s, today "only" 10% of inhabitants fall in the lowest income quintile. Today, Kasungu Lilongwe Plain (27%) and the Shire Highlands (23%) have larger shares of their population in the lowest quintile.

Source: Reproduced with permission from WFP 2010

none was concerned about the daily remuneration rate (set "low" at 2.5 kg per day to support self-targeting), although some concerns were voiced about perceived inequity; that not all households who were in need of immediate food assistance were able to gain access to food for work activities because of a lack of labor—due to sickness, household demographics, migration, or distance from home. It is, however, plausible that the timeliness of the activity, its scale, and the important safety net function that it provided ensured that seriously food insecure households otherwise unable to capture IFSP benefits (lacking land, labor, or time to participate) benefitted from this part of the program. How much such resources contributed to consumption smoothing at the time is impossible to tell, since it was not documented. But careful linking of short-term targeted resource transfers to those most immediately in need of help with activities that support the longer-term promotion of food security (through enhanced market access and market activity) does appear to have been an effective part of this kind of integrated program. Closer documentation of the actual contribution of such resource transfers to household consumption/total expenditure (by degree of household food insecurity) would be needed to confirm the benefit versus cost of this component.

3.5 Improved Utilization of Food

There are several aspects to the "utilization" pillar of the food security conceptual framework; the quality of diet is one aspect, but related to that are elements relating to nutrition outcomes and health practices, including reproductive health (family planning), and issues of clean water access and sanitation.

3.5.1 Dietary quality/diversity has improved.

The share of household expenditure on food in Mulanje is still higher (at 56%) than the national average for rural areas (of 51%). But there is evidence that diets have become less monotonous and that levels of consumption adequacy have improved to the extent that Mulanje rates relatively well compared with other parts of the country (Figure 3). For example, according to WFP (2010, p. 105), households in Mulanje today "have the most diversified diets" in the country (along with a few other locations like Chitipa and Misuku Hills), whereas households in neighboring districts like Phalombe Plain where the original control communities were located "have the lowest and least diversified diets." This positive outcome appears to be confirmed by the 2010 baseline survey for USAID's Wellness and Agriculture for Life Advancement (WALA) program—a multisectoral activity implemented by a consortium of NGOs. The baseline showed that in the area covered by Africare (one of the consortium partners with implementation responsibility for the Mulanje area), the average household dietary diversity score was the highest among all districts covered by the entire program (with a score of 5.4 compared to a WALA average of 4.3); indeed no other district involved in this particular program recorded a score above 4.5 (WALA 2010).

In other words, diet quality, as indicated by the diversity of foods consumed on a regular basis, has changed considerably, and this has moved Mulanje to the top of national rankings where this important indicator of food security is concerned. The encouragement by the IFSP to change the way people think about "what is food" (beyond maize), coupled with the promotion of new ways to prepare and cook foods, all contributed to a new focus on an appropriate *diet* as a whole, not just the availability of one particular food item.

3.5.2 The "food gap" has shrunk.

What was a serious dual problem, reliance on maize as the core aspect of the diet and a lack of stored maize for many months of the year, has diminished. The months of provisioning from own harvest is reported to have increased substantially since the early 1990s. This is due to increased productivity and output, reduced post-harvest losses (although these are still substantial and could have received more attention under the IFSP), and food preservation.[13]

[13] During the IFSP, the greatest concern in post-harvest losses was physical security; that is, theft of standing maize while it was still maturing in the field. The IFSP contributed substantially to the reduction of such theft by supporting community policing activities (see below). Today, local concerns relate more to poor quality storage facilities, and losses of harvested food to vermin and crop wastage linked to diseases and environmental stressors.

Processing of foods to allow for longer preservation should be singled out as a success, which also contributes to diet diversity. Promotion of graters, and training in processing of cassava and sweet potato, had a lasting impact, underpinning the use of mixed flour *nsima* (maize plus other ingredients) as a staple food. In Mulanje's past, "cassava played a primary role when maize stores are empty" (Chiwona-Karltun and Mkumbira 2000, p. 4). Today, households consume cassava (and other tubers) on a regular, if not always daily, basis. Some women report alternating meals by day (one day preparing meals with maize but on other days preparing meals without any maize at all), but others mix cassava and maize in the same day.

3.5.3 Child nutrition has improved—stunting.

While each intervention sector of the IFSP had its own targets and outcome indicators, the ultimate metric of program success was defined as a reduction in stunting—low height-for-age of children 6 to 59 months (top row in Figure 1). The Project Planning Matrix (prepared in 1997) set a "10% reduction in stunting rate by the end of 2001" (against the baseline rate in 1997) as the primary marker of success. This followed the belief that child stunting represents a cumulative measure of welfare deprivation that would be appropriate to capture the many kinds of interventions being proposed. Was the stunting goal achieved? Yes, it was. Conditions in rural areas of Mulanje have improved such that children in this area are relatively better off than they were in the past, but also better off than many other parts of the country today.

According to Meerman (2008, p. 6), "nutrition projects in Malawi are often difficult to monitor in any sort of comprehensive and comparable way. […] Very few impact evaluations of nutrition interventions have been conducted in Malawi." That the IFSP *did* in fact invest in appropriate baseline and end-line assessments of nutritional status underlines the professional approach adopted by GTZ. The nutrition baseline (Schultink 1996) reported a prevalence of stunting in a sample of the initial IFSP villages that ranged from 50% to 67.6% (across 14

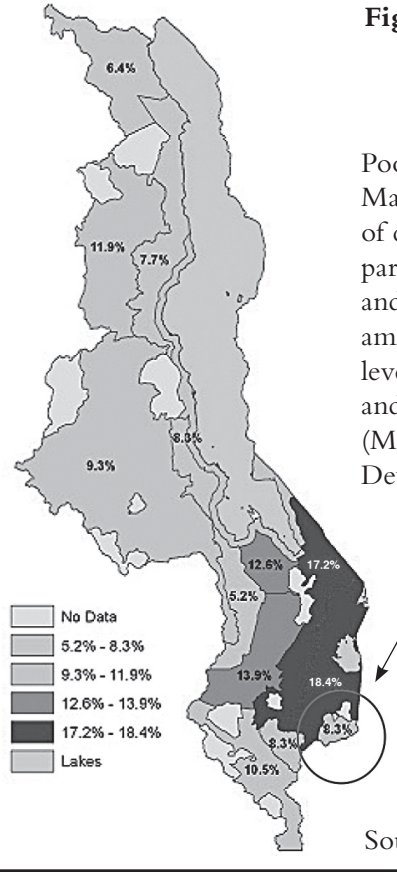


Figure 3: Distribution of "Poor Levels of Food Consumption" (as determined by surveys of consumption adequacy)

Poor consumption levels are to be found across most of Malawi, but the striking fact is that while lowest levels of consumption are most prevalent in the southeastern part of the country (Lake Chirwa, the Phalombe Plain and Shire Highlands), today Mulanje District ranks among those parts of the country with the highest levels of "acceptable consumption" (as defined by WFP and Malawi's Vulnerability Assessment Committee (MVAC) under the coordination of the Ministry of Development Planning and Cooperation.

Source: Reproduced with permission from WFP 2010

"baseline" villages)—averaging at 61.5%—at a time when stunting rates *nationally* were around 50% (according to 1992 data reported by Schultink 1996). Average stunting in the seven baseline villages of Mulanje District—which became the focus of the IFSP—was 56.3%, while in Kasungu Extension Planning Area (EPA) and Naminjiwa EPA (which were later separated from Mulanje to become Phalombe District), average stunting was higher at 63.5%; although the difference between Mulanje and Phalombe (control) villages was not statistically significant (Schultink 1996).[14]

Between 1997 and 2002, there was a statistically significant decrease in stunting of roughly 11.5 percentage points. Importantly, the range and severity of stunting conditions both improved as well. The range now played out from 61% down to 41% (the highest and lowest cases in 1996 had been almost 68% to 50%). Furthermore, the rate of severe stunting (reported as <3 standard deviations from the norm) fell more sharply still—by almost 16%.

It should be pointed out that the rate of stunting also fell in the Phalombe villages where IFSP was not implemented—from the 1996 average of 63.5 percent to 44.7 percent—although the difference between Mulanje and Phalombe villages was not statistically significant. In other words, conditions also improved in the district next to Mulanje during the IFSP period. Part of that can be ascribed to heavy donor investments made to protect and sustain the large numbers of Mozambican refugees settled in Phalombe, partly to "leakage" of ideas and some of the inputs from IFSP (as reported by extension agents during interviews), and partly due to NGO interventions that came on the heels of IFSP that adopted some of the same multisectoral, participatory approaches (particularly those of OXFAM GB).

Importantly, the gains achieved in stunting have been secured and sustained since. The 2006 multiple indicator cluster survey (MICS) for Mulanje recorded 43% stunting (UNICEF 2008). A 2009 survey by WFP reported that stunting in Mulanje among children 6-59 months was roughly 50%—the lowest among all rural livelihood zones sampled across the country, and comparing favorably with the national average of 59.7% (WFP 2010).[15] Similarly, a baseline survey conducted by Africare in 2010 as part of the WALA program, reported stunting at around 53% for its intervention area which includes rural Mulanje (WALA 2010).

In other words, stunting in rural Mulanje was in the 50% to 60% range in the 1990s, while today it is at the 40% to 50% level. This supports a two-fold conclusion: on the one hand, conditions in rural Mulanje have improved significantly, such that children in this area are in some ways relatively better off, not only than they were in the past, but compared with many other parts of the country today. On the other hand, there is still a long way to go to resolve the problems that beset rural Malawian households. That is, while at least 40% of the children in Mulanje remain stunted, only part of the problem of food insecurity has been solved. It has, however, been both diminished and its effects blunted.

3.5.4 Child wasting.

While not defined as a key indicator for the IFSP, wasting (low weight-for-height in children 6-59 months) appears to have also improved. Wasting, which has a much higher risk factor for child mortality than stunting) was reported in 1998 as 7.3%, with 4.3% severe (GoM 1999). In the seven baseline villages for Mulanje District, the mean prevalence of wasting was 8%, ranging from 3% to almost 17% (while the average rate for the seven Phalombe villages was 5.7% with a range from 0 to 23 percent (Schultink 1996)). That several of the Phalombe villages had baseline rates exceeding 15% (and reaching 23%) was indicative of very serious conditions—which Shultink (1996) suggested might be ascribed to acute illness. For example, close to 70 percent of children in Mkumba village (with 23 percent wasting) had respiratory infections at the time of the baseline survey.

[14] It should be noted that the stunting prevalence reported for baseline purposes by Schultink (1996) was not representative of the entire Mulanje District—simply a benchmark against which to assess progress.

[15] The 2006 MICS reported a stunting level of 46% nationwide, but that included urban areas, where stunting is typically lower.

By the end-line evaluation, Weingaertner (2002) reported mean wasting for six of the Mulanje baseline villages as around 2% (considered to be an "acceptable" level by WHO), with only one community—Jiga—recording a rate of some concern (>6%).[16] By contrast, Oxfam GB conducted a nutrition survey across Mulanje (not specifically in IFSP villages) in March 2002 and reported wasting at an average of roughly 6% (UNICEF 2002). The 2006 multiple indicator cluster survey for rural Mulanje recorded roughly 3% wasting (UNICEF 2008).

Mulanje District Hospital continues to receive wasted children and treat them as in-patients (between 1,000 and 4,000 per year between 2005 and 2010—the variation depending primarily on outbreaks of malaria, dysentery, and tuberculosis).[17] While most are successfully treated, the continued problem of wasting suggests that while conditions (and prevalence rates) improved across most of Mulanje District, there were (and remain) some individual communities that did not respond to IFSP interventions, or to improving secular conditions. This begs questions about a need to try to identify potential non-responders early on in the process of an integrated intervention in order to single them out for additional (special) treatment. It also suggests a need to pay closer attention to seasonal disease-nutrition interactions and longer-term health/sanitation-nutrition interactions in seeking to improve agriculture, nutrition, and health outcomes simultaneously. As noted by the World Bank (2007, p. vii) "the persistence of malnutrition as a public health concern, despite the successes in increasing agricultural production, belies any notion that malnutrition and undernutrition can be solved entirely from the supply side."

> *"No more serious wasting. In the past, children across the district were very malnourished, and many died from their condition even if they reached the hospital. Not any more."*
>
> —Extension agent in Mulanje District, December 2010

3.5.5 Other nutrition-related outcomes.

Schultink (1996) reported night blindness among children 6-59 months in the baseline at more than 7%, which is high. Monitoring reports at the end of 1998 suggest that night blindness had already been reduced to 4%, although the source of the data is not clear. There was no assessment of micronutrient status at end-line, so it is not possible to compare with the earlier period. However, coverage of vitamin A supplementation grew rapidly after the 1990s to reach roughly 95% of children by 2008 (UNICEF 2009).[18] Thus, while vitamin A deficiency (low serum retinol—the underlying condition for night blindness) is believed to have declined nationally from 59% (in the 1995-2005 period) to 47% by 2007 (UN/SCN 2010), it is not possible to determine how conditions were different in Mulanje in the mid-1990s other than from reports of local health officers that night blindness as a serious medical condition was seen more often in the past than it is today.[19]

Schultink (1996) also reported national iron-deficiency anemia at 50% and goiter at 66%. There are no data on child anemia rates specific to Mulanje, but it is worth noting that cases of severe anemia during pregnancies recorded at Mulanje District Hospital declined sharply during the 2000s, dropping below 100 cases a

[16] It is worth noting that Jiga *also* had the highest rate of baseline stunting (among the Mulanje villages) and one of the lowest rates of improvement in stunting (a decline from 63.3 to 61.2% from baseline to end-line).

[17] Information kindly provided by the statistician of Mulanje District Hospital and the staff nurse in charge of the nutrition rehabilitation unit.

[18] The 2010 Comprehensive Food Security and Vulnerability Assessment confirmed a coverage rate of around 93% for children 6-59 months receiving a dose in the six months prior to the survey (WFP 2010). Mulanje's rate was close to the national average.

[19] The 2000 Demographic and Health Survey showed that Mulanje had the highest rate nationwide of children 0 to 36 months old living with a mother who consumed a vitamin A-rich diet. That suggested a relatively good situation that should only have improved with later gains in supplementation coverage and the promotion of fruit-bearing trees and diet diversity supported by the IFSP.

"Anemia used to be a serious problem around here; a killer. Now it's not so prevalent."

—Health assistant, Chonde Health Station, December 2010

year in 2007 and reaching only 11 cases during 2010.[20] Low Birth Weight (an indication of both maternal and fetal nutrition) also improved in Malawi from 16% in 2000 to 12.5% in 2007—an annual decrease of 0.6 percentage points (UN/SCN 2010). In Mulanje District, the MICS of 2006 reported Low Birth Weight at 11% (UNICEF 2008), while data from the District Hospital (which represent only a limited, self-selected cross-section of the population), suggest a rate of 8.7% in 2010 of births at the hospital weighing in at <2.5kg (out of 8,200 live births). While only suggestive, these declining trends point to improvements at district level that are at least consistent with gains recorded across the country. In other words, Mulanje has not been left out of nationwide gains even though it started out far behind other districts.

3.5.6 Health indicators and weaknesses in improved utilization.

Another goal of the IFSP was to reduce prevalence of common diseases for children under five, specifically in villages where the IFSP started work in 1996 (in other words, allowing sufficient time for health outcomes to improve). The intent was to improve hygiene and sanitation, in part through behavior change communication and in part by supplying clean water access, promoting use of pit latrines (with concrete slabs called Sanplats), the establishment of village health communities to liaise better with, and support the work of, health extension personnel, enhanced support for HIV/AIDS programming, and promotion of demand for reproductive health services.[21]

While progress can be documented in the realm of water point provision and maintenance, and in some changed behaviors, it can be argued that the health sector activities as a whole were not as well integrated with other sectors during the IFSP, or since. Part of the problem has been relatively siloed "campaigns" in health that themselves have been poorly integrated (vitamin supplementation, antiretroviral programming, condom usage initiatives, each pursuing its own relatively narrow agenda), and partly due to different mentalities to service delivery across sectors; that is, a primary focus on facility-based treatment and consultation, in the case of health, versus community-extension work and dissemination into villages of technologies, in the case of agriculture, water, and irrigation.

Nevertheless, it has been noted that "infant and under-five mortality rates have considerably declined since the 1990s" (FAO 2008a).

Table 3. Trends in Selected Health Indicators

Disease/Practice	Baseline (1996)	Goal (1999)	Latest (2005/06)
Respiratory infections	50%	45%	36%
Exclusive breastfeeding★	50%	60%	65%
Diarrhea	19.7%	15%	14%
Night blindness	5.6%	4.0%	1.3%

Sources: Project Planning Matrices (IFSP) for June 1997, July 1998, October 2001; DeGabriele 2004b; GoM 2005; DHS 2005; UNICEF 2008 ★ Refers to 0 to 6 months

[20] Mulanje District Hospital, database on compiled annual data (2005 to late 2010). Health Management Information System: data reported up to October 2010.

[21] BMZ (2002) made it clear that things like "Gesundheit, Trinkwasserversorgung und Hygiene sowie eine angemessene Fuersorge" were key elements of the food security concept on the "utilization" side of the equation.

Demographic and Health Survey (DHS) data confirm "a real, dramatic improvement in child mortality rates despite the epidemic of HIV" during the 2000s (Jahn et al. 2010, p. 751). The crude under-five mortality rate in Mulanje was reported as 2.7/10,000/day—levels considered "high" by SPHERE standards (OXFAM GB, cited by UNICEF 2002); the most recent assessments suggest that under five mortality has fallen to 1.7/10,000/day (UNICEF 2008).

Exclusive breastfeeding (from birth to 6 months) was determined at the time of the baseline to be practiced by roughly 50% of mothers in Mulanje District (Schultink 1996). IFSP monitoring systems reported that exclusive breastfeeding in the original IFSP villages had reached 60% by December 1998 (IFSP 1998), and by 2006 the MICS reported a rate of 65% for rural Mulanje (UNICEF 2008). In other words, the apparent trend has been running in the right direction.

While gains made in raising awareness, and promoting treatment, of HIV/AIDS also appear to have been sustained, diarrheal disease, malaria, and other problems remain widespread. It is clear, for example, that while considerable attention had been paid to sanitation (framed in terms of making clean potable water available, keeping the surroundings of water points free of stagnant pools or detritus, and promotion of Sanplats), less attention was accorded to hygiene practices. There was community-level training, but as noted by DeGabriele (2004a, p. 34), "this intervention should have been more successful and achieved a much bigger impact."

The track record of nutrition and health behavior change communications in Malawi is not stellar; in 1990, it was stated that such activities had so far been "ineffective," and that "low coverage and inappropriate messages are two of the factors that have rendered [them so]" (Msukwa 1990, p. 254). The IFSP attempted to strengthen the messages and adopt current best practice in the design and implementation of messaging and education. Yet, adoption of the Sanplats was poor (and there was no clearly defined "Plan B" for failure in this sector), and knowledge of hygiene principles was not widely translated into practice. DeGabriele (2004b) found that only 38% of respondents interviewed for the end-line survey reported knowledge of needing to wash hands after defecation, and that few used soap. He found that only 10% of households had hand-washing facilities that were used.

As a result, conditions did not improve as much as desired, and even those gains noted in Table 3 are relatively limited in nature and cannot anyway be ascribed to the actions of the IFSP. The 2009 Comprehensive Food Security and Vulnerability Analysis (CFSVA) noted that "diarrhoea was most common among children living in…Mulanje" (WFP 2010, p. 106). That assessment made a special point in its recommendations that extra consideration needs to be paid in districts like Mulanje to "sensitize communities about good hygiene practices" and that interventions dealing with "health, nutrition, child-care practices and sanitation should be strengthened" (WFP 2010, p. xiv). In other words, as Mulanje District authorities have remarked, "there is much to be done to improve the health of children in this district" (GoM 2007a, p. 60).

USAID's WALA is currently emphasizing a need for supporting large-scale adoption of an Essential Nutrition Actions model that would be linked to agricultural crop and diet diversification and also linked to the government's Essential Health Package.[22] Similarly, the CFSVA (WFP 2010, p. 109) similarly recommended that "agricultural extension services coupled with nutrition education should be intensified." It remains an open question, however, precisely what activities would be packaged together, and delivered via what mechanisms, to make this kind of ideal integration work at scale.

One sub-sector under health was called "family planning," the idea being that reduced fertility would serve to reduce pressure on the food system by there being fewer mouths to feed over time. As for many elements of health intervention, this component was not widely

[22] Comprising common vaccinations, malaria control/treatment, reproductive health, control of infectious diseases, control and management of sexually-transmitted diseases, ENT management, prevention of injuries, and prevention and treatment of malnutrition (GoM 2007b).

successful, in part due to the particular circumstance of southern Malawi (a matrilineal society, early age of marriage, and reported promiscuity among adolescent girls). Knowledge Attitude and Practices (KAP) surveys at the baseline and end-line of IFSP suggested that women do know about family planning methods, but they only use them once they have completed what they call "their quota" of children. Most respondents were aware of the availability of contraceptives, but relatively few reported using them, arguing that their plan was to have two to four children and only then stop (and adopt use of contraceptives). Many girls are reported to be having their first pregnancy between 12 and 14 years of age, often leading to still-birth or low birth weight, and contributing to poor health and nutritional status of adolescent mothers. Thus, more attention needs to be paid to behavior change communications tailored to local cultural norms.

3.6 Cross-Cutting Issues

A number of IFSP initiatives were designed to support the process of implementation and facilitate sustained impacts after the program ended.

3.6.1 Community level.

An important effort was made by the IFSP to engage traditional authorities and village elders *throughout the process*. This was invaluable. The commitment to broad participatory approaches in planning and implementation (participatory rural appraisals (PRAs) and demand-responsive approaches) was widely praised as being appropriate, sensitive, and necessary to obtaining local buy-in. Although political interference in processes, ownership of resources, etc. was always a problem—and one that arguably should be dealt with more directly so that village "leaders" do not usurp the process or its benefits. Some elders felt challenged or their authority threatened by the establishment of village committees. While there was much discussion on roles and responsibilities, elders die (leaving room for new players who have not necessarily been part of the process). A stronger role for traditional authorities may be called for so that committees have a representation beyond the village level.

Importantly, community leadership at all levels (the headship of villages, but also the management leadership of village committees) mattered immensely to the success or failure of IFSP interventions. In many ways, this element could have been reinforced still further through an assessment of what aspects of leadership matter most to success, and why, given identical resource or other constraints, some communities were more able to sustain IFSP impacts than others. The training of committees in management skills, conflict resolution, and resource management/accounting was a good approach that contributed importantly to the value accorded assets (like roads, trees, and water points), and permitted wide engagement of communities in "ownership" of the IFSP resources. It was also widely reported that communities in which innovations took root the fastest and deepest were often inhabited by relatively well-educated individuals (retired civil servants, relatively educated entrepreneurs, returned migrants from oversees, etc. "who knew what they were doing"). This suggests a need for active identification of local advocates and early adopters as a means of enhancing messaging and leadership in the early stages of programming.

Demonstration effects were useful to support adoption of new technologies—it was not just about information and services. The effect of seeing and believing was important to rapid uptake of innovations and their continued replication. Indeed, as noted above, the IFSP villages showing the greatest impacts in food security typically had at least four innovations present at once—suggesting that there is a critical mass where a) gains can be compounded across multiple innovations (to exceed critical thresholds of activity), and b) the visibility of each innovation is enhanced by the presence of others. The use of exchange visits (farmers and government officials spending time in other locations to learn about success stories) and "open days" that included drama, songs, demonstration of products, etc. were instrumental in the spread of innovations. Making transportation available was crucial. Having potential markets for new products, be it popcorn (schools), "energy" drinks (church events), improved stoves (market town), honey

(for civil servants with disposable income), etc. underlined that identification of demand for goods and services matters as much as enhancing their supply.

The emphasis on training for capacity development paid dividends. Locally-owned problem analysis (village PRAs) is still used in some villages as a basis for identifying new problems, or for reiterating demand for attention to items that were lower down on the original list. However, a weakness has been a lack of training/protocols/guidance on a) how to engage the entire community (including those most vulnerable to food insecurity) in ongoing processes of problem analysis and "ownership" of local challenges, and b) how to rotate/replace members of village committees. There was great attention in training on management of resources and how to manage meetings and votes, how to oversee activities and maintain control of resources. But when committee members became dormant or left, the retraining of new members was weak. What can be put in place for maintaining the process beyond the first generation directly involved in the program? Some villages have had three full committee elections since 1999. That aspect of the process seems to be working well. But how to bring new members up to speed is poorly-defined (who is responsible, how to do it, how to not forget elements that were including in the original trainings, etc.).

Community police committees deserve to be singled out here. It was predicted in the early 2000s that by 2010, Mulanje District would "witness a deterioration from the current levels of crisis and a proliferation of conflict-prone situations" (Gomonda 2001, p. 8). It was recommended at the time that the IFSP be "transformed in a way that allows it to become conflict-preventive." The result was the successful implementation of community policing across the District, heavily supported by the IFSP. Villager patrols protected not just maturing field crops, but also served to protect boreholes (from theft of parts) and even prevented the felling of trees planted as part of the food-for-work. Some of the policing committees are still active, others no longer, but the principles of community ownership and of personal responsibility have been widely understood and are now embedded in local dialogue relating to governance processes. For example, there were 19 cases of livestock theft reported to Mulanje police station in 2001 (DeGabriele 2004a) and still 18 reported in 2006 (including pigs and cattle); but by 2010 only nine thefts were reported and only of goats.[23]

> *"What some of the villages have understood is that if they wait for us to act, they wait a long time; if they voice their needs loudly, we come running."*
>
> —Extension agent, Mulanje District, December 2010

Additionally, the policing activity changed the nature of relations between communities and the police authorities in Mulanje. Prior to the IFSP intervention the police were often treated by villagers with suspicion and some were fearful of them. The IFSP supported many group meetings at which trust and communications were enhanced, to a point where villages today feel confident that if they call the police, they will come quickly with the intention of helping them. The police, on their side, continue to see value in the community policing committees.

3.6.2 District level.

The line ministries in Mulanje today talk of the IFSP period almost in reverent terms—a "golden age" characterized by dynamic collaboration, mutual respect, capacity enhancement, and dedication to achieving mutually-agreed results. The village-level joint PRA activities (cost- and time-intensive for IFSP staff) were valued by local government staff who had never done anything like that, let alone collectively. Teams from the ministries (agriculture, water, health, irrigation, etc.) were involved together in community discussions on prioritization of

[23] Data provided by Mulanje Police Station, December 2010.

> *"When there is a problem, two or three ministry representatives attend meetings with village authorities together rather than separately, since it was clear from the IFSP experience that 'a single (government) face to the client' is more effective than separate interactions between different ministry officials and the same village representatives."*
>
> —Line ministry employee, Mulanje District, Dec. 2010

problems and needs to which IFSP and local government could feasibly respond.[24] There is interest in repeating those exercises again to determine not just what has changed, but what the new issues and needs may be for the coming decade. New extension agents are exposed to these approaches and still use them.

In other words, district level representatives of government have understood the value of promoting demand for services to which the public sector should respond rather than having the promotion done by extension agents. Since IFSP started, there is a monthly meeting of all extension agents working in the field (from each sector). They started this practice during IFSP and it has continued because it is seen as a valuable planning tool. They share plans and problems. But they also rethink failed strategies and have started going beyond the traditional audience. They now see value in reaching out to youth groups, not just heads of households, and promote health, anti-HIV/AIDS, and community security messaging whenever appropriate.

The IFSP was flexible enough to plug holes in the functioning of district planning, extension, reporting capacity, etc. Where problems were identified, IFSP provides resources to address them, be it in the form of vehicles, personnel, skill-sets, or financial resources. This was seen as hugely valuable by local government personnel, who quickly saw the IFSP as not competing or duplicative (or indeed usurping their roles) but as complementary and supportive. This was hugely important in getting their buy-in and sustained support. Even in 2010, the district-level workers were able to articulate the multisectoral nature of the program. When asked to define the goals of the IFSP, agents from the irrigation sector stated "reduce maternal death, malnutrition, and lack of food," while agents from the agriculture sector replied "enhance health, promote consumption of more diverse foods, build road connections, etc." In other words, the idea of integrated planning and action has stayed in the local lexicon of development.

3.6.3 National level.

Lasting impact of the IFSP was not restricted to Mulanje District. The story of the IFSP's successes gained regional and national attention. Current extension agents in Mulanje report that most other districts in Malawi know about "the Mulanje approach," and many have come to visit and observe over many years. Extension agents from several different sectors (particularly those involved with water and irrigation) have been invited multiple times to go to other districts to make presentations to groups of local government employees on how they go about their work. Many international donors, ambassadors, and NGO leaders (as well as the agriculture committee of the Malawi parliament) came to the District during the IFSP period of implementation. They sought to learn how the strategy was implemented and how it could be replications elsewhere in the country (and in other countries, including South Africa).

Supporting such dissemination, GTZ asked BMZ to place a senior advisor in the Ministry of Agriculture or the President's Office to facilitate national-level interaction around Mulanje's experiences. In 2004, the EU food security

[24] While some of the "value" placed by government staff in village-based activities undoubtedly relates to monetary allowances due to them when out of the office, many personally vouched that they found close interaction with communities in problem-solving to be the only viable approach for sustained solutions.

initiative supported the government's Food Security Task Force (in the Ministry of Agriculture). This allowed for many of the field visits, and training of ministry staff using success stories from Mulanje.[25] Roughly 600 ministry staff completed two-day trainings and there were additional, more in-depth (10-day) trainings conducted as well.[26]

One of the reasons for the national attention to Mulanje was that it represented a concrete example on the ground of thinking that had been enshrined in documents but not yet widely rolled-out across the country. In other words, the IFSP was consistent with, and indeed appears to have influenced, national priorities as they evolved during the late 1990s and 2000s. Since it had results to demonstrate by 2004, it strongly influenced national dialogue and training on food security across the country at a time when policy attention to agriculture and nutrition was growing fast. A mark of policy success resides in the fact that the government of Malawi fully embraced the concept of multisectoral partnerships as the basis for achieving food security goals. The 2008 Food Security Policy stated unequivocally that "this policy document should be jointly owned, implemented and monitored by all the sectoral ministries […] and stakeholders involved in food security issues" (GoM 2008, p. 7). Similarly, the National Nutrition Policy (GoM 2009c) identified 11 priority areas for action, the first two of which are increased cross-sectoral coordination and capacity building for nutrition. In other words, the concept of integration across sectors has been mainstreamed through multiple policy agendas.

The same is true of the idea of incorporating nutrition into the agriculture planning, primarily by focusing on crop and dietary diversity. A consultative meeting on this issue was convened in Blantyre during July 2008, resulting in 15 specific objectives proposed for integration into the country's agricultural development plan (most dealing with crop diversification and increasing diet diversity through nutrition education) (Meerman 2008). Indicators used in tracking the IFSP, and promoted by IFSP staff to national agricultural authorities, were incorporated into the government's tools for harmonizing the monitoring and evaluation systems applied to tracking not just agriculture but also food security, nutrition, and natural resources (GoM 2009b).

Current or planned multisectoral programs aimed at improving food security and nutrition, like the new national agenda on nutrition (the *1,000 Special Days* initiative) and USAID's multisector multi-agency program (WALA) have adopted many, if not most, of the goals and approaches pioneered by the IFSP, although individuals engaged in designing these activities do not usually know where the practical experiences underpinning their new designs came from.

[25] The training modules based on the IFSP experience are still widely used today, having been promoted by the technical secretariat of the food security joint task force. The modules include sections on irrigation, household energy use, nutrition communications, agroforestry, and more.

[26] Multiplier benefits have been many, including the fact that one of the managers of the Millennium Development Villages in Malawi attended the 10-day training and reports that she has be applying some of the lessons learned in the implementation of integrated activities in the MDVs.

4. WHAT DID IT COST?

While the economic costs of undernutrition and food insecurity are known to be substantial (with productivity losses to individuals estimated at more than 10% of lifetime earnings, and national economic losses sometimes exceeding 3% of GDP), relatively little is known concretely about cost-effective approaches to scaling up integrated programming; as the World Bank puts it "how much investment is needed remains an unanswered question of fundamental importance" (Horton et al. 2010, p. 18).[27]

In the wake of the influential *Lancet* series on maternal and child nutrition (Bhutta et al. 2008), there has been a flurry of activity among researchers aimed at generating estimates for programming costs in relation to scaling up actions to resolve nutrition problems, and in relation to costing various models for integrated multisectoral programming. For example, the World Bank recently proposed that US$11.8 billion should be spent each year on tackling undernutrition, of which US$10.3 billion should be raised from public resources (Horton et al. 2010). That assessment estimated a total cost of roughly US$30 per child per annum for a range of mutually supportive interventions in health and nutrition:

- Vitamin A supplementation – US$1.20 per child/year
- Therapeutic zinc supplementation during diarrhea management – US$1 per child/year
- Multiple micronutrient powder distribution – US$3.60 for two months' treatment
- Deworming – US$0.25 per child/year
- Iron-folic acid supplements during pregnancy – US$2.0 per woman/pregnancy
- Iron fortification of staple and other foods – US$0.20 per person/year
- Salt iodization – US$0.05 per person/year
- Complementary foods for prevention/ treatment of undernutrition – US$0.16 per child/treatment
- Community-based treatment of severe wasting – US$200 per child/treatment

Many assumptions and gross estimations underpin such a costing exercise, since real costs depend so much on local conditions, wage rates, whether services are delivered at facilities or within communities, exchange rates, etc.[28] Yet, such exercises do offer an order of magnitude estimation of what a package of evidence-based interventions might cost if implemented at scale (reaching 80% to 100% of the population) in developing countries bearing 90% of the world's burden of child stunting. The figure of US$30 per child per year uses a target population of 356 million children under the age of five, and it comes close to the earlier estimation by the UN (the REACH activity) of US$36 per child per year for a similar but slightly wider package of interventions (including, for example, hand-washing promotion with soap, distribution of bed-nets and intermittent anti-malarial treatment, and home gardening).

Such packages become more or less expensive depending on the components that make up the package, even within a single sector (such as health/nutrition). For example, estimates of per capita annual spending on a package of interventions for the integrated management of sick children (IMCI) through primary health care facilities, which includes promotion of exclusive breast feeding, vitamin A and zinc supplementation, screening for immunization; and case management of pneumonia, malaria, and diarrhea, including oral rehydration therapy, is said to cost approximately US$4.10 per child per year (in 2002 US$, with calculations specific to Africa) (Victora et al. 2006). By contrast, international NGOs like Action Against Hunger and Doctors without Borders argue that just the treatment of wasting could be scaled up globally for roughly US$100 per life saved (Devereux et. al. 2008; ACF/MSF 2009).

In other words, the range is wide, and much depends on what is offered, the cost of inputs and services provided, how they are delivered and to whom (i.e., what the administrative costs

[27] It remains so since "large-scale trials on the effects of joint interventions have not yet been undertaken" (Victora et al. 2006, p. 1180).

[28] The World Bank is currently conducted a country-by-country review of the "real' costs of such programming based on actual experiences gained.

associated with targeting are).[29] The very low cost of IMCI only costs the package of selected treatment and prevention activities offered, not the cost of the infrastructure and staffing underpinning their delivery. The high cost of saving the lives of severely wasted children includes the cost of programming, but relies entirely on relatively costly therapeutic foods (which are currently priced at roughly US$4.5 per kg). What is more, none of the above health/nutrition packages include investments in agricultural productivity enhancement, infrastructure development, agroforestry, or non-farm income generation, which suggests that a more elaborate multisector model could cost significantly more.[30]

The IFSP in Mulanje was budgeted at roughly eight million euros (BMZ funding—not including the 350,000 euros from the EC for the extension year). The sum of eight million euros is equivalent to around US$10.2 million (in 1996 US$), which deflated comes to roughly US$14.2 million in 2010 dollars.[31] The program was designed to benefit an estimated 40,000 households, which equates to roughly US$59 per household per year averaged out over the six main years of the program's life, or almost US$11 per capita per year (220,000 individuals).[32] Of course households, and individuals within households, did not benefit equally from all of the innovations, services, and inputs on offer. What is more, that budget calculation does not take into account government costs that supported the actions of extension agents, other line ministry staff, police officers, health ministry outreach staff, and more. In other words, it is only a partial representation of total costs and it relates only to the IFSP budget—not to Netherlands government, EC, WFP, or other contributions that were linked with IFSP activities at various times and in diverse ways.

Nevertheless, when comparing with other examples of multisector programming, the IFSP compares well. For example, USAID's current multisectoral WALA activity (which has many similarities in approach and package content with the IFSP) is budgeted at US$80.7 million over five years with a target population of around 219,000 beneficiaries in 39 villages—equivalent to US$61.5 per person per year.

A similar activity supported by the European Union (the Sustainable Nutrition Rehabilitation Programme (SNRP)) was, like WALA, recently implemented in Malawi by a consortium of NGOs. This targeted nutrition intervention rolled out a community-based treatment of severe wasting, but it also presented itself as a multisectoral approach that combined nutrition education with sanitation and hygiene promotion, support for food production, the establishment of village savings groups, and also capacity building of frontline health and agriculture extension staff (Hoogendoorn and Geresomo 2010). Like the IFSP, it was implemented through existing government structures, including hospitals, local ministry offices, the District Development Committee (DDC), Village Development Committees (VDCs), and with traditional leader involvement. This program cost €4.9 million over three years for 430,000 beneficiaries—translating to roughly US$5.3 per person per year (in 2010 dollars), which appears to be cheap. However, actual cost

[29] It also depends on how many resources can be obtained locally versus through international procurement. It should be noted that the value of the Malawian currency has significantly declined since the time of the IFSP, falling from 15 Kwacha to the US$1 in 1997, to 45K/US$1 in 1999, and reaching 165K/US$1 in 2010, and this kind of devaluation can have important impacts (positive or negative) on multiyear program budgets. Furthermore, in 2001, the World Bank (2001) reported that the kwacha fluctuated from US$I=MK3.5 in 1992 to MK50 in May 2000. At times, inflation reached as high as 50% per year, even reaching 68% at one point.

[30] Conversely, where integrated programs focus only on food production and availability (but not on health or nutrition), the cost would, arguably, be lower than when all aspects are fully integrated. For example, the 2008 global conference on food security, FAO (2008d) argued for US$30 billion to be spent annually to feed 862 million chronically undernourished people—or roughly US$35 per person per year—but that excludes interventions in health or targeted nutrition interventions.

[31] In January 1996, one euro was valued at the equivalent of US$1.28. The value of US$1 in 1996 translates to US$1.39 in 2010. (**http://www.usinflationcalculator.com/**). The exchange rate in April 2011 was US$1=1.46 euro.

[32] This is averaging out over the six principal years of project investment 1996-2001 inclusive, not including the additional extension years which focused on a smaller subset of activities as well as investments in promoting regional and national mainstreaming of concepts, training activities, and operational designs.

per beneficiary differed substantially depending on the nature of the package of interventions by location, the degree of targeting required and who implemented it, and the evaluators of the program gave the community interventions component of the activity a "C" grade for their efficiency relative to cost. That is, some activities were costing around US$66 per person per year, while others (which did not provide any inputs, only training and facilities for government workers) only cost US$1.5 per person, but the "beneficiaries" involved were not rural householders. Most importantly, the evaluation reported that the program had not resulted in any notable changes in overall household food availability, dietary diversity, or child morbidity (Hoogendoorn and Geresomo 2010).

From 2004 through 2008, GTZ was also involved in supporting a multisectoral, multi-institutional collaboration among FAO, UNICEF, and WFP in Malawi, with funding support of the German Bilateral Trust Fund and the German Federal Ministry of Food, Agriculture, and Consumer Protection. This activity was implemented simultaneously in Malawi and Lesotho and budget differentiation across the two countries was not as transparent as it might have been.[33] The program was designed to support the needs of HIV/AIDS-affected orphans and their families or caregivers through interventions to improve hygiene, sanitation, nutrition, home gardening, income-generating activities and vocational skills training, crop diversification (through new seed introduction), village grain bank construction, improved school facilities (with school meals provided), small animal husbandry, and capacity building in terms of training for service providers such as district extension workers (FAO 2006). In Malawi, the activity was implemented in two districts (targeting 17 villages) with a total of 2,886 beneficiary households or roughly 15,900 people. Assuming that the total intervention cost of three million euros was disbursed evenly across the two country activities, this translates to around US$86 per capita per year—although a very large share of that budget did not support activities on the ground (FAO 2008d).[34]

Other examples of multisector food security programming exist across Malawi. A well-known icon is the Millennium Villages activity. The Millennium Villages (MVs) are hard to "cost" given that each year brings new innovations and new commitments. However, based on experiences across Africa, including the site near Mulanje (Mwandama), it is argued that the cost of "delivering development" through integrated multisectoral planning is roughly US$120 per person per year, a sum that is based on a US$10 (in-kind) contribution from the beneficiaries themselves, with US$110 derived from public sources such as national governments and international donors (Sanchez et al. 2007).[35] Those activities include health services (building well-appointed clinics), nutrition interventions, infrastructure improvements (road building, but also school construction and equipping), construction of state-of–the-art village-level grain warehouses, provision of telephony and internet connectivity, small mills, trucking and ambulance services, access to anti-retroviral drugs, distribution of insecticide-treated bed-nets, and safe water provision. If one only takes the cost charged by the MVs to international donors (making no assumption about how that is allocated), the MV integrated program is budgeted at US$60 per capita per year (MV 2010).

Another less well-publicized example relates to a community-based integrated food security program covering 53 villages in Mzimba district (in northwest Malawi) from 2007 through 2010 (Venton and Siedenburg 2010). This activity, implemented by a consortium of NGOs funded by the British Department for International Development (DFID), aimed to enhance community resilience to food insecurity in an area prone to natural disasters, as well as endemic poverty. The programmatic focus was on crop diversification (sweet potato, pigeon pea, cassava, beans, and groundnuts), introduction of higher-

[33] As noted in the end-line evaluation, it was not possible to establish detailed figures for per capita expenses as a detailed breakdown of financial information was not available (FAO 2008e).

[34] Converted at the indicative rate of 1 euro to US$1.37 for July 2007.

[35] The US$120 figure was recently updated to US$160 per year "given the trends in global inflation" (MV 2010).

yielding maize seeds, promotion of soil and water conservation techniques, food processing, and community leadership development (all similar to the Mulanje menu of activities), plus establishment of community grain banks and mobilization for disaster risk reduction (community action planning). The total program cost US$402,471 over four years (pounds sterling converted to 2010 US$), reaching 4,250 beneficiaries at an annualized cost of around US$24 per capita (Venton and Siedenburg 2010). The Mzimba program included no major investments in infrastructure, water development/irrigation, health care, or forestry.

A conclusion that can be drawn from these experiences in Malawi is that the IFSP was relatively cost-efficient: it achieved (and sometimes exceeded) its targets at a cost that compares favorably with other, often quite similar, multisector and integrated activities. The IFSP average of slightly less than US$11 per person per year is lower than most comparable activities in Malawi, even accounting for deflated dollar values and exchange rate variation. What is more, the comparator activities have not always demonstrated as positive or sustained results.

In a global context, this matters since it suggests that the IFSP model has merit in its own right, and that it could have applicability in other contexts. A new round of global actions aimed at food security and nutrition includes the Global Agriculture and Food Security Program (GAFSP), a multilateral mechanism to address underfunding of agriculture, food, and nutrition security investment plans developed by countries themselves.[36] During 2010, US$350 million was made available to support country plans, including one for Togo totaling US$39 million to support investments in agricultural productivity growth, crop and diet diversification, and market development (GAFSP 2010b). The aim is to improve household food security indices, prevalence rates of child malnutrition, income growth among smallholder farmers, etc. Given a beneficiary target of roughly 400,000 people, this program costs roughly US$98 per person targeted.

Another GAFSP activity is Mongolia's plan for an *Integrated Livestock-based Livelihoods Support Programme* over six years aiming to "provide a safe and healthy food supply, deliver quality raw materials to processing industries; and increase exports through the development of the livestock sector, including (irrigated) crop as well as animal agriculture, targeted nutrition interventions, clean water provision, food safety investments" (GAFSP 2010c, p. 2). The US$12.5 million support from GAFSP is a contribution to a total budget of US$344 million, to benefit 130,500 beneficiaries, which translates to US$440 per beneficiary per year over the six years.

In other words, judging by the budgets of comparable multisectoral programs across Malawi and in other parts of the world, the IFSP's positive outcomes were achieved at relatively low cost. Conditions in other countries will differ, and costs will vary by year, but the IFSP was not "expensive" given its achievements. Emphasis needs to be placed in future integrated programming on careful demonstration of a) costs and benefits per beneficiary (directly and indirectly reached through an IFSP), but also b) on the cost of doing business in a multisectoral manner. Are there cost savings to integrating trainings or input delivery, or to combining actions such as planting of fruit trees along roads built by FFW? Are the additional costs to ensuring a package of input/service delivery rather than unisectoral actions? Generating this kind of information would put GTZ at the forefront of the new wave of attention to program designs that link agriculture, health, livelihoods, and nutrition. But even today, IFSP stands out as having demonstrated one effective model for multisectoral programming.

[36] GAFSP set up in response to a request from the G20 meeting in Pittsburgh in September 2009 as a means of putting into practice pledges made at the L'Aquila Summit of July 2009.

5. LESSONS LEARNED

This final section lays out broad lessons learned from the review and raises key issues that require further consideration in discussions on design of integrated programming, measures of effectiveness, and potential for replication at scale in other contexts.

5.1 Integrate What Exactly?

This review suggests that the IFSP was a success. It achieved what it set out to do in a relatively efficient and cost-contained manner. However, could it perhaps have achieved more by focusing on other kinds of interventions? Or could it have achieved goals faster by seeking to achieve a more systematic interlocking of actions across sectors in every community? While the complex concept that underpinned the IFSP was well elaborated and well understood by program management (in that it determined the activity menu of the IFSP), the concept was not well elaborated among community partners. As a result, many beneficiaries believed that the IFSP stood for "multiple input programming" rather than integrated multisectoral programming around a unified concept carrying meaning along the entire value chain from field plots to cooking pots. That some households only engaged with water point development, some were active in the adoption of agricultural technologies, and others pursued non-farm income-generating activities means that each had a different lens through which they saw the IFSP.

There is nothing inherently negative in approaching communities in this manner, but while many of the individual outcomes can be addressed in a single sector, it can be argued that opportunities for synergistic effects are not captured in this way. Should an IFSP expect to deliver multiple (unrelated) inputs that address multiple sectors, and therefore accept multiple (unrelated) outcomes across a district, or should inputs and services be delivered as more clearly defined packages to *all* intended beneficiaries (whether at the community or household level), with outcomes expected as *sets or clusters* of indicators at the beneficiary level? The former is what happened in Mulanje; the latter would imply a need for closer attention to combining resources with the explicit intent of combining impacts.

Three distinct approaches are possible. A first attempts a formally integrated approach that offers a set of largely predetermined inputs and services aimed at achieving impacts within a single domain (intrasector packages), such as IMCI (health delivery) or even the Essential Nutrition Actions package (a set of nutrition-focused inter-linked activities). This underpins the "essential" or "minimum" package agenda that has gained significant traction in both nutrition and health, and it focuses on what is essential to achieve a defined outcome, not what is potentially desirable or what might be adapted based on changing demand. The second approach promotes a menu of inputs and services framed by a cross-sectoral conceptual framework, and seeking outcomes across a range of sectors—much the way that that IFSP was designed and implemented. This allows for more flexibility across the menu of inputs, and allows for *potential* synergies to emerge where multiple innovations are adopted in one location (regardless of whether these innovations were all in the agriculture sector or all in the health sector, say). The third approach is to seek to ensure that minimum (essential) packages are provided in *each* sector, with the gains from each achieved in each community that is targeted, thereby achieving compounded benefits. It could be argued that the Millennium Villages are seeking to pursue this approach.

Each carries different costs and different levels of complexity in managing the process of "integration." At the simplest level, integration can be achieved simply in terms of ideas commonly understood among program managers. At the most complex level, integration means combining multiple essential packages (across multiple sectors) at the field level. But how comprehensive can or should an approach be? Future investments in integrated programming should establish greater clarity on the level(s) at which integration is expected to be carried out in any program, and how the "integration" is expected to achieve outcomes

that rise above and beyond what might be expected of individual siloed activities. The extent (comprehensiveness) of any future integrated programs will inevitably depend on local context—what already exists that can be built on, what the priority domains that need to be addressed are, and what can in fact be effectively tackled through multisectoral programming. There is no "one size fits all" menu of interventions around which to construct a multisectoral activity. But enough is known of what works at the level of individual components that an approach can be formulated around the food security concept to allow program designers to make choices that are tailored to local needs.

5.2 To Promote or Accelerate Change?

One of the greatest challenges to integrated programming is demonstrating what it has achieved. Secular change happens regardless of what goes on in the programming zone of an IFSP. Thus, while stunting (the ultimate goal of IFSP success in Mulanje) was indeed reduced, it also declined in the control communities in Phalombe district, as it has done across the country. Many of the same innovations in agriculture and resource management are visible in communities of southern Malawi that did not benefit directly from IFSP. Gains in agriculture, underpinned by subsidy policies and good rains, benefitted Phalombe and Chibonde as much as they did Mulanje. In other words, the rate of change may be as important in determining success as the level of change measured.

For example, Clemens and Demombynes (2010) point out that the Millennium Villages (MVs) are unable to attribute changes measured in the intervention communities because they have generally done a weak job of accounting for secular change or for leakage of ideas or services to nearby control villages. But one thing that they can point to is an acceleration of processes (like the adoption of technologies or human outcomes) that have succeeded in bringing the MVs at least back on par with other parts of the same region or the country as a whole. Figure 4 shows that the adoption of improved sanitation in Ghana and use of insecticide-treated bed-nets (ITN) in Kenya was, at the outset, lagging considerably in the locations where the MVs were sited. One the programs had introduced these technologies as part of the wide package of interventions targeted to MVs; their rate of adoption in those villages caught up rapidly with the rest of the country. In other words, the development of neglected areas was accelerated by the intervention, even if it was not a) unique to the intervention or b) exceeding the pace of change happening in other parts of the country. What the MV served to do was catalyze change so that lagging communities lagged no more.

The same could be attributed to the IFSP. While there is no doubt that some of the activities pushed Mulanje District farther ahead than other districts in Malawi, others simply promoted a process of accelerated catch-up, which in itself is a major success given the depth of poverty, food insecurity, and malnutrition in the District prior to the program's initiation.

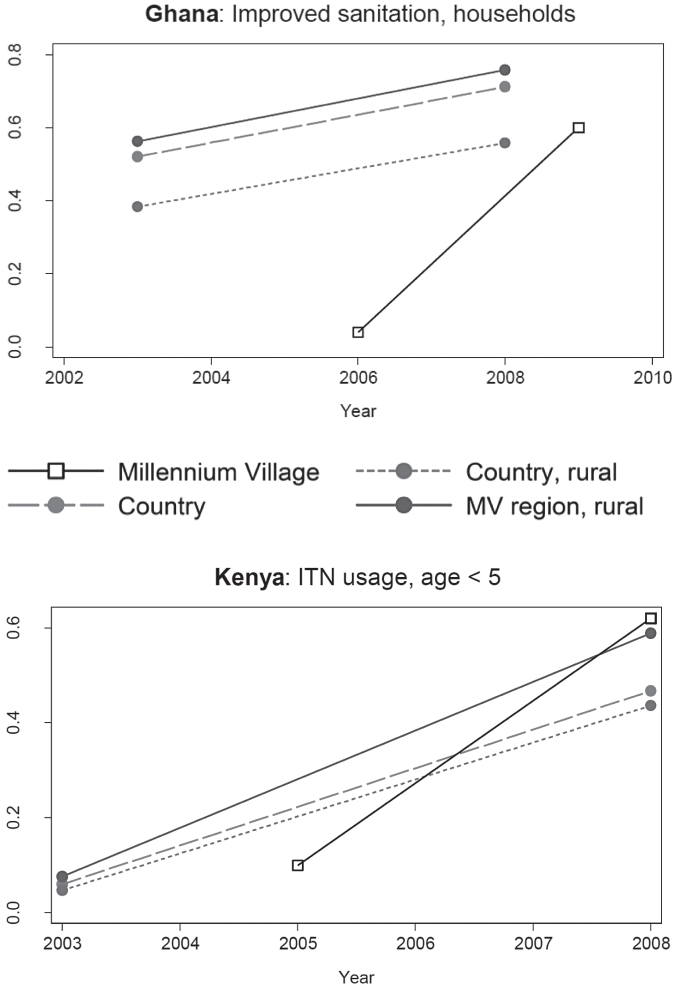
What then are the most viable metrics to assess this dimension of program impact? Rigorous impact evaluation of development projects, whether of attributable change or the pace of change, is no luxury—it is essential to donor good practice and to the generation of evidence-based models of successful program design. Greater attention to changes outside of a defined program area can seem like a waste of resources during a period of resource-constrained implementation, but an ability to more convincingly attribute impacts to interventions is rapidly becoming essential as a core aspect of ethical donor behavior. Although the Millennium Villages project stated in the past that it is unethical to have comparison (untreated) villages at all (Sanchez et al. 2007), that view has been changed recently so that a revised evaluation design is now incorporating untreated (at least in principle) comparison villages. New, relatively low-cost methods for rigorous evaluation of this kind of integrated programming have been proposed, including randomized treatment among matched village pairs (Clemens and Demombynes 2010).

A further aspect of evidence-gathering relates to specific metrics that will be increasingly needed to support discussion of the effectiveness of "integration" as an end in itself, not simply a means to an end. While child stunting may be an appropriate "high-level" indicator for success, it is not the only metric that should be used in seeking to both understand and explain food security and nutrition problems. Other measures are required to understand how the whole (of an integrated program) generates more value than the sum of individual parts. In other words, what exactly is the value-*added* from multisectoral programming (beyond metrics of change in individual parameters of the food security concept)?[37] Considerable thought will have to be put to generating new generation so-called "smart" indicators of enhanced actions, outcomes, and the processes that get us there.

5.3 Broad Brush or Fine Detail?

A key question in program design has to be, are we targeting people, places, or problems? The answer to that question should inform decisions about the depth and scale of any intervention.

Figure 4: Examples of Millennium Village Interventions That Accelerate Their "Catch-Up" to Other Parts of the Region or Country



Source: Reproduced with permission from Clemens and Demombynes (2010)

[37] As noted by Berti et al. (2010, p. 15), while "integrated nutrition and health interventions can produce excellent results, perhaps even greater than randomized controlled trials […] operational research quantifying the magnitude of the effectiveness of integrated programmes is required." In other words, it is not yet clear what should be *expected* of integrated versus unisectoral programs, nor what cut-offs can be defined to classify above- or below-average performance of such interventions.

Scalability of activities has multiple dimensions: geographic expansion (outwards from a concentrated, space-bound location) of activities in such a way that their value and performance are maintained (i.e., the interventions scaled up do not dilute or compete with each other); administrative replication (such that multiple agents can take up and perform key functions equally well); and load sharing (such that increments or multiples of scaled activities, be they inputs delivered or services, do not increase the cost or administrative burden of replication, i.e., unit cost of actions is maintained regardless of number of actions taken). Assessing the true implementation cost of an integrated activity in one location is a challenge in itself, but few attempts are ever made to assess the implied cost of taking a proof of concept from small to large scale—in part because the goals of geographically targeted versus universally applied programs are not always identical.

The IFSP feasibility study called for a geographic targeting approach focusing on high priority areas rather than high priority households. This does not mean that those "most in need" should not be targeted—but it should be in addition to a population-wide approach to resolving problems at a threshold level. But how large a population or geographic area should be included? As noted by Hoogendoorn and Geresomo (2010, p. 29), "with an integrated projects-approach, it is possible to bring a package of complementary services to households and the community at large for a certain period of time (for the duration of the project and hopefully a little beyond). However, because of the integrated nature, the total package of support per household can easily become quite expensive, which hampers the potential value of the interventions in terms of addressing the need for scaling up."

The choice of scale of operations depends to a large extent on the underlying policy objective supporting the investment. Is the goal to: a) "change" conditions in a particularly deprived part of a country; b) demonstrate new ways of promoting change in that country (i.e., offer a success story that can be replicated in other parts of the same country); c) build capacity in human and institutional services that can serve as a model for other parts of the same country; or d) all of the above? The Mulanje IFSP explicitly sought to serve as "d," all of the above.

Where people are targeted, attention is needed to distinguishing between types of outcomes in a single sector—stunting versus wasting or both? Reduced mean prevalence of low BMI for women versus reduced incidence, or both? Identification, and promotion, of early adopters of innovations matters, as does identification of those with fewest capacities and seeking to protect them from falling further. Thus, while reducing the prevalence of stunting or increasing the number of meals consumed per day are important metrics for understanding population-wide impacts, reducing the severity or depth of the manifested problem may be just as important. That is, seeking to bring those individuals and households currently far below the mean on any such metric up to the mean can be as crucial to achieving goals as seeking to raise the mean overall. The question of scale in this case is answered simply in terms of where the most serious problems are experienced and by how many people—the goal should be to focus on "the worst" symptoms at a scale *and intensity* great enough to secure measurable impacts. Intensity matters, in this instance, because careful targeting of essential actions is typically required to achieve success when resolving acute conditions.

Where "places" are targeted (rather than people), the issue of scale and intensity are slightly different. To achieve impact on natural resource management, or road and market construction, or use of health facilities, actions tend to have to be focused on administrative regions recording the worst human or economic outcomes. The scale of action will be defined by the scale of those boundaries, and "intensity" transitions to "duration" of activity. For example, successful action in programming addressing HIV/AIDS requires not just medical treatment of individuals with the virus, but also a focus on locations of high prevalence rates where population-wide changes in knowledge and behaviors are needed. As noted by the integrated program dealing with food and nutrition security of orphans and vulnerable children (OVC) in areas of high HIV/AIDS prevalence, "OVC are not a separate

category and cannot be viewed and treated in isolation [from actions at the level of the community or the region]" (FAO 2008c, p. 7). In such a case, the time horizon for setting in place durable change comes to matter as much as the intensity of interface between a program and its beneficiaries. Change in ideas and behaviors does not happen quickly without visible, realistic incentives for those to be impacted. Thus, duration of presence can matter as much as what was present.[38]

A scale question arises around the appropriate number of administrative units to focus on if, in fact, the greatest concerns for individual people are focused in small pockets or limited geographic areas rather than universally across whole regions. The challenge is to match the approach (training government workers/ extension agents) on how to address defined problems, which requires working through administrative (bounded) structures, when the problem areas may cut across district boundaries (as they typically do) and extension agent catchment areas do not clearly "map" with the problems as defined.

When "problems" are being targeted, such as lack of participatory engagement with underserved populations or cultural behaviors that are not conducive to improved nutrition outcomes, "scaling up" may only need to be focused on ideas and capacities, not necessarily the programmatic elements themselves. Ultimately, national governments have the responsibility to promote and sustain the changes needed to meet internationally-defined human and economic goals. Thus, demonstration effects around new proofs of concept may well be a sufficient goal for integrated programming supported by donor investments—as a two-stage effort. The first is to show what can be done, and how it can be achieved; the second is to disseminate capacity nationwide so that most appropriate elements can be replicated by the government itself.

The IFSP was relatively successful in this aspect. For successful scaling-up, as much effort (and as many resources) should be put into the design and implementation of stage two as the effort (and resources) put into stage one—it cannot be an afterthought or a side activity. In its promotion of innovation adoption, demonstration effects were useful—it was not just about information and services. The effect of seeing and believing was important to rapid uptake of innovations, and their continued replication. The use of "exchange visits" (farmers and government officials spending time in other locations to learn about success stories) and "open days" that included drama, songs, demonstration of products, etc. were instrumental in the spread of innovations. But making transportation available was crucial. In the absence of IFSP, no other source of funding would have been available, and chronic underfinancing of extension budgets by most developing country governments largely rules this out as a sustainable option.

Similarly, IFSP focused on volunteerism and did not pay beneficiaries to protect program investments. Other donors do. The competition inherent in different visions across donors on the role of community participation can sustain or undermine all the gains of even an excellent intervention like the IFSP. Attention to country ownership and to the coherence of donor inputs is key to fostering successful programming in the context of program-based approaches (PBA) (GTZ 2009). Greater engagement with other agents of change, including government, is needed on this process aspect of intersectoral planning.

5.4 Addressing the Vulnerability Dimension of Food Insecurity.

The FFW component of the IFSP served to bridge immediate (short-term) food needs and longer-term investments in productivity. However, food or income transfers are not usually intended to last the entire duration of most development programs—they are there merely to buffer needs in an interim period. Future integrated programming will, arguably, need to take the concept of buffering vulnerable households as an integral element of community

[38] As argued by Lamichhane and Shayka (2007, p. 7), in their review of best practices for scaling up: "it is critical to have a long timeframe—at least seven years—to develop and scale-up."

programming; that is, provision of safety nets and ensuring of preparedness are increasingly critical to sustaining gains made in the realm of long-term investments.

Mulanje made great strides under the IFSP and since then, but it remains food insecure, and remains vulnerable to exogenous shocks.[39] When households interviewed for Malawi's Comprehensive Food Security and Vulnerability Assessment (WFP 2010) were asked to identify how many shocks they had experienced in 2009, those in Mulanje reported the highest number of shocks of anywhere in the country—42% reported three or more shocks in the year, compared to the rural Malawi average of 16% having three or more shocks. The most commonly reported were (in order): i) hikes in agricultural input prices; ii) drought/irregular rainfall; and iii) illness/death. It can be argued that such threats are increasing as a result of environmental uncertainties linked to climatic variability and economic shocks posed by price volatility at a global level.

During the 2001/2002 crisis year in Malawi, households across the country incurred "an average loss of 53 percent on 'distress sales' of assets that they sold or exchanged for food" (Devereux 2008, p. 118). Households in Mulanje were, on the whole, able to withstand the worst impacts of such shocks in 2002 and 2009 as a result of income diversification, prior savings, and ability to borrow against future agricultural output—and of course recourse to wage labor on the tea estates. The role of income transfers (through FFW) should not be discounted in the IFSP years, but what else could an integrated program have set in place as a sustainable buffer against years of crisis? Crop insurance? Health insurance? Microsavings and loans? Smoothing consumption and protecting assets and income streams is not necessarily the same, in programmatic terms, as investing in productivity enhancement. As the food security concept has evolved since the mid-1990s, a fourth dimension (vulnerability to risks) has come to be seen as being as important as the availability, accessibility, and utilization pillars. This suggests that more programmatic attention needs to be paid to this aspect of food security in the future.

5.5 A Focus on Leadership.

The IFSP played an important role in empowering leaders at community level, but could have done more to sustain such leadership through training of trainers, determining how to engage "next generation" leaders post-IFSP, refresher courses on election processes and committee management, and ensuring that when new committees are elected their effectiveness is not progressively eroded by a gradual loss of the knowledge initially communicated by the IFSP. But attention is needed to metrics of success in this key area. Before phasing out or moving from one phase of a program to another, attention should be paid to why some communities (or groups of households) will have already done much better or much worse than others. Determining processes revolving around leadership will be key to such understanding. For example, the baseline nutrition survey in 1997 documented a huge range of serious to less-serious nutritional outcomes across just a handful of communities. By 2002, conditions had generally improved across those communities, but the range (and pattern) was still there. In 2010, the laggard versus lead communities identified in 2002 were still the same despite roughly equal engagement in the IFSP and access to the same resources since. Why, and what could be done to narrow the gap?

[39] Mulanje was one of the districts worst affected by heavy rainstorms and flooding in early 2011, and preparedness for such problems (within district-level development plans) remains limited while the country's Disaster Risk Management (DRM) policy remains under discussion (GoM 2011).

6. CONCLUSIONS

The Malawi-based IFSP was confirmed by this review to have been a success in many dimensions, in terms of: a) helping bring about positive changes in food security in Mulanje District, across multiple sectors; b) changing thinking and behaviors at community level that persist a decade later (where "early adopters" have continued to innovate and promote replication and expansion of impactful ideas); and c) promoting new thinking and new approaches to tackling food insecurity (multisectoral integration at community level) that have been taken up and adopted by the public sector in other parts of Malawi. There are lessons that should be disseminated beyond the country to inform integrated programming globally.

Calls have been made recently for a new approach to food security planning "that addresses more than food production and is rather seen as an endeavor that integrates broader approaches of food access and utilization as a multi-sector initiative. An approach, which brings together agriculture, nutrition, and health as self-reinforcing, synergistic interventions that together lead to sustainable food security, is needed" (Negin et al. 2010, p. 5). The IFSPs of the 1990s were ahead of the policy curve in developing exactly what is widely sought after today—models of integrated multisector programming that can successfully achieve goals across several sectors simultaneously, and be sustained beyond the period of program implementation.

It can therefore be argued from this that a new effort be made on the part of German foreign assistance agencies to invest in a next generation of integrated food security programs in priority countries. The global community is today more ready to engage collaboratively in such thinking than they were 15 years ago. All donors and national governments seek the most appropriate models of integrated planning that could accelerate their attainment of the Millennium Development Goals and allow for faster progress in resolving the world's persisting nutrition problems and in protecting still-vulnerable communities around the world from the vagaries of climate, food prices, pandemic health threats, and more.

New attention to the importance of leveraging agriculture to achieve gains in nutrition and health activities reinforces the call for coordinated action addressing agricultural and human productivity simultaneously. There are many broad, as well as specific, lessons to be learned from GIZ's past experiences in this domain. These should be more actively documented, disseminated, and form the basis for a new generation thinking not so much on "what" should be done (what elements work well in different contexts), but "how" best to do it; how best to integrate the delivery on the ground of both things and thoughts in ways that produce ripple effects and multiplier effects beyond small geographic locations.

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Appendix 1. Itinerary in Malawi, December 11–20, 2010 for Patrick Webb, Christa Roth, and John Mwanja'ani

Day	Timing/places visited	Purpose/activities	People met
11	12h30 Arrival Blantyre Drive through IFSP area 18h00 Arrival Mulanje	Riverbed afforestation in Thuchila, Nthiramanja, and Luchenza, rural roads with fruit trees in Abunu Luchenza: new maize depot of grain reserve	Villagers at random
12	8–13h Sayama	Reading of background documents at Sayama house	
	13h30 Mulanje	Mulanje market for overview on food items and prices	Villagers at random
	15h Likalawe village Drive through IFSP area	Likalawe: to prepare for village session, meeting at Mai Nanjiwa's house	Likalawe: meeting stove group around Fanny Nanjiwa and village chief
13	8h00 IFSP hall Mulanje	Meeting organized by the District Authorities for discussion with line ministry representatives involved in IFSP implementation	Agriculture: Mr. Ndekha (District Irrigation Officer), Mr. Masesi (Extension Officer), Mr. Mkochi (Assistant District Agricultural Development Officer) Community Policing: Mr. Zawanda (CP Coordinator at MJ Police Station)) Water: Mr. Chagunda and Mr. Kapute (Water Technicians)
	10h30 Likalawe village	Community meeting at the chief's place, with lunch prepared by food processing committee, walk through the village to visit the well, fields, roads, broken bridge, etc. Visiting stove production and kiln at Mai Nanjiwa's house	Likalawe village: discussions with various committees (Village Development, Health, Natural Resources, Crime Prevention, Water, Stove production, Food preparation), Mrs. Emmie Noniwa Mrs. Fanny Nanjiwa (stove producer and village-based stove trainer)
	17h00 Ligomba village	Looking at selected harvesting of fruit trees planted under FFW to burn bricks for school blocks	Mrs. Agness Mbawa (stove producer and village-based stove trainer from Ligomba)
	17h30 Mbali village 19h00 Return to MJ	To arrange for meeting next day, walk through the fields to the water point that dried up	Villagers at random
14	7h30 Mulanje	Police station for crime statistics (crop and animal theft)	Mr. Zawanda (CP Coordinator), Mr. Chawinga (Research Officer)
	8h30 Mulanje	District Hospital for health statistics Supplementary feeding program and NRU	Mr. Mapesi (District Health Management Information Systems Officer) Mrs. Chimbalama (Deputy Coordinator at Nutrition Rehabilitation Unit)
	10h00 Chonde	Chonde Health Station for discussion on health and sanitation interventions of IFSP	Mr. Kasote (Health Assistant Chonde Health Station)

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Day	Timing/places visited	Purpose/activities	People met
14	11h30 Luchenza	Walk through the market and discussions with owners of agricultural input stores on changes in last decade, visit to riverbed afforestation and sand diggers at Thuchila River	Several shopowners Sand diggers
	14h00 Jiga village	Group discussion on IFSP with community members at a house close to the road, later at the chief's place and the water point	Various community members, the chief, and members of the water point management committee
	On the way:	Broken bridge on the road between Jiga and Nthiramanja	Villagers at random
	Near Mendulo school	OVOP (One Village One Product initiative) factory for honey processing	OVOP staff
	16h30 Mbali village, 19h00 Return to Mulanje	Group discussion with water committee and other community members at the water point that has dried up	Water committee, chief, other committee members
15	7h30 Mulanje	District Agricultural Office to get yield data	Informal discussion with Ministry staff
	8h30 Komwa village	Meeting with chief, but he was not around	
	9h00 Nsanjama village	Visit old control village from 1996 baseline survey	Villagers at random, chief
	11h00 Blantyre	WALA office for nutrition data and information on WALA approach and interventions	Mrs. Jolita Nsanjama (WALA Nutrition Coordinator)
	14h00 Zomba	Millenium Village office in Zomba	Catherine Mfitilodze (Nutrition Facilitator) Edwin Zawanda (Education Facilitator)
	16h00 Mwandama 19h30 Return to MJ	Mwandama (Millenium Village), visiting grain bank, school, health center, cassava processing, baking oven	Chief Mwandama, grain bank committee, cassava flour producer Evening: skype with Caps Msukwa (previous IFSP extension advisor)
16	7h30 Mulanje	District Water Office for data and discussions	Mr. Kapute (Water Technician)
	8h00 Mulanje	PLAN Malawi office for background data on study done in IFSP impact area in 2007	Mr. William Kamphale (Project Manager Mulanje), Mrs. Teresa Phiri (Nutrition Facilitator), Mr. Hodeus Mulenga (from ICRISAT, assigned to PLAN Mulanje office as Crops Officer)

Day 16 continued on next page

Day	Timing/places visited	Purpose/activities	People met
16	8h30 Mulanje	District Agricultural Office to get yield data	Mr. Wilfred Ugeni (District Crops Officer)
	9h00 Mulanje	Africare Office for discussion on WALA interventions	Mrs. Helen Phallaza (Nutrition Facilitator)
	Drive through area of IFSP -Lujeri	Visit Mulosa border post for insights on cross-border trade Visit Bloomfield tea factory of Lujeri Tea Estates	Mr. Roy Crawford, Bloomfield Factory Manager
	Afternoon, return to Mulanje 18h30	At Sayama to consolidate first findings with facilitator	
17	7h00 Departure Mulanje 9h00 Mwenya village 12h00 Mgumera village	Visit villages in Phalombe District included in baseline survey in 1996 and follow-up survey in 2001, visit water points, fields, irrigation plots at Phalombe River	Chief of Mwenya village, farmers in the fields Chief and VDC members of Mgumera village
	14h00 Chambe village	Visit IFSP-beneficiary to get story	Mai Jessica Nkanda (stove producer, beekeeper, trader, and entrepreneur)
	15h30 Mkwaila village 17h30 Return to Mulanje	Visit IFSP-beneficiary to get story	Lonia Chikopa (tree multiplier, stove producer, village-based trainer, member of water point repair team, and innovative farmer)
18	8h00 Mulanje - Sayama 18h00 Return to Mulanje	Preparation of lessons learned	
19	8h00 Departure Mulanje 15h00 Chitedze 17h30 Arrival Lilongwe	Discussion on GTZ School, Health, and Nutrition program, and permaculture interventions	Stacia Nordin (Registered Dietician, Technical Advisor to the GTZ Quick-win School, Health, and Nutrition program)
20	7h30 Lilongwe MoAFS	Meeting with Technical Secretariate of Food and Nutrition Joint Task Force at the Ministry of Agriculture and Food Security	Neil Orchardson (Head of Technical Secretariate)
	9h30 GTZ country office	Debriefing of GTZ country director	Uta Borges, GTZ Country Director Malawi
	11h30 Departure toward airport Lilongwe	To catch 13h30 flight to Johannesburg for onward flight to Frankfurt. Due to snow, plane diverted to Munich, thus delayed arrival at final destinations Frankfurt and Boston	

Informal meetings with staff from Mulanje Mountain Conservation Trust: Carl Bruessow (CEO), Moffat Kayembe (Livelihoods Officer, formerly IFSP Assistant Agricultural Advisor). The District Commissioner was unavailable at the time of the arranged meeting.

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