

# POVERTY REDUCTION SCALING UP LOCAL INNOVATIONS FOR TRANSFORMATIONAL CHANGE



United Nations Development Programme

In Partnership with Special Unit for South-South Cooperation



## China Agriculture Extension Special Task Force (AESTF)

### SNAPSHOT OF THE CHINA AGRICULTURE EXTENSION SPECIAL TASK FORCE (AESTF)

The China Agriculture Extension Special Task Force (AESTF) uses demand-driven and market-oriented mechanisms to link farmers more directly to improved technology, new business models and product markets. Based on a local innovation initiated in a city in Southern part of China in 1998, it has since achieved many successes:

- The AESTF has grown to cover over 1,800 counties in China, benefitting over 60 percent of its large rural population of 720 million people. Its efforts have increased the incomes of farmers and lifted many farming households out of poverty.
- By 2009, the average annual income of farmers benefitting from the AESTF services increased by 67 percent compared to their income levels in 2006. This increase was 24 percent higher than the national average increase during the same time period.

### SCALING UP SUCCESS

Scaling up the AESTF in other countries would require the following:

- Feasibility assessments
- Rosters of experts
- Capacity development
- Documentation of lessons learned

The related costs of the above activities will vary depending on the country context.

## FOREWORD

Scaling up local development innovations is key to achieving sustainable and equitable development, especially when these innovations are driven by national and local governments and actors. In order to best support countries to scale up proven local successes and achieve transformational changes, the UNDP Poverty Practice of the Bureau for Development Policy (BDP) works to build a solid knowledge base and to uncover systematically the enabling environment and drivers for scaling up. In this context, together with the Special Unit for South-South Cooperation we have jointly initiated a series of case studies of “scaled up” development cases. Learning from these country cases, we aim to identify key policy, institutional and political enablers and drivers for a successful scaling up process, and to inspire development partners to transform innovations into sustainable development results.

These cases demonstrate how countries, ranging from middle income countries (such as China, Costa Rica and Mexico) to low income and least developed countries (such as Mongolia and Nepal), were able to drive these processes. Their success, built on leadership and vision, was mainly relying on their own resources and human capacities. Each country story showcases a different development challenge and response—the Mexico story describes the national cash transfer scheme to address inequalities and vulnerabilities, and the China case showcases an agricultural extension programme that spurred rural entrepreneurship. The Costa Rica study addresses an employment creation effort through biodiversity preservation and eco-tourism, and the Nepal story describes the national initiative to supply small scale energy to support rural employment and basic services delivery during and in the aftermath of conflict. Finally, the Mongolia case outlines the successful transformation of Mongolia’s XacBank from a non-bank financial institution to a commercial bank, and its ascendance as a leader in providing innovative and socially responsible services to Mongolian citizens.

Each story identifies key principles, approaches, elements and methodologies that could ultimately contribute to answering the question, how is it possible to scale up a pilot/seed initiative to achieve larger and sustainable development impact? It describes the process of scaling up, capturing the key milestones in the evolution of the scaling up, and distilling the main drivers for success such as the political vision and commitment, internal and external ‘catalysts,’ and political, financial and policy enablers, as well as institutional arrangements and human capacities. The findings of the case studies will be further utilized in the UNDP guidance note on scaling up local development innovations for poverty reduction, as well as the ongoing UNDP efforts of strengthening an integrated approach for local development.

Every country case presented in the series also demonstrates how each innovation has spurred, or bears the potential to spur, a sound South-South collaboration and learning platform, and in some cases, South-North knowledge exchange. A South-South capacity and knowledge exchange initiative will follow the wide dissemination of the case studies during the upcoming South-South Expo.

The partnership expresses its sincere gratitude to the UNDP Special Unit for South-South Cooperation (SU-SSC) and Mr. Yiping Zhou, Director of SU-SSC, for their strong support to this initiative. Without their vision and commitment, this work would not have materialized. We also gratefully acknowledge country offices that have facilitated this work, peer reviewers who helped improve the quality of the case studies, and authors of each country case. Their contributions are acknowledged in each case study. Lastly, in addition to facilitating this initiative, UNDP Poverty Group colleagues have also compiled and edited all the case studies.



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## Summary

The China Agriculture Extension Special Task Force (AESTF) programme is an initiative that supports extension practitioners and farmers in China to set up profit-sharing schemes to improve agricultural productivity, enlarge market access, and promote rural enterprise development. It innovatively seeks to reform the traditional supply-driven government efforts in agriculture extension and introduce demand-driven and market-oriented mechanisms to link farmers more directly to improved technology, new business models and product markets.

Based on a local innovation initiated in a city called Nanping in the southern part of China in 1998, the AESTF has been scaled up to cover over 1,800 counties in China, benefiting over 60 percent of its large rural population of 720 million people. The AESTF has increased the income of farmers significantly. By 2009, the average annual income of farmers, who benefited from the AESTF services, increased by 67 percent compared to their income level in 2006. This is 24 percent higher than the national average increase during the same period of time.

The AESTF initiative experienced a well-managed process, from a small-scale innovation at a local level, to a programme in several localities, and eventually gained national support and coverage. It has scaled up to have an impact on the country's agricultural industrial reform, serving as an important complementary measure to the government provision of agriculture extension services.

The scaling up of the Nanping initiative to a national programme has benefited from several important factors. The "vision for scale" was reflected in the original design of the initiative- it was responsive to the demands in a timely manner and had close linkages to the national priorities; the unique feature of "profit-sharing" between the AESTF practitioners and the farmers catalyzed effective public-private partnerships and ensured the sustainability of various initiatives during the process of local-level dissemination. The multisectoral collaboration at national and subnational levels was critical in creating an enabling policy environment for its eventual scaling up to become a national scheme. Eight ministries have jointly developed a comprehensive and coordinated policy framework for the promotion of the AESTF initiative.

The case study analyses the scaling up process of the AESTF initiative, and concludes that only when an initiative gains both high level of policy and technical integration and abundant local

adaptations, it is most likely to have high impact, wide coverage, and strong sustainability. The case study also shows that while there are multiple pathways to scaling up in different political, economic and social contexts, the key is to strategically 'connect the dots' among global, national, and local level contexts, policies, and practices.

It is expected that findings of the case study will be of reference to UNDP development practitioners, our partners, and policy makers, who seek to disseminate knowledge from local and small-scale innovations, introducing policy reforms, and contributing to transformational development changes in rural and agricultural development.

This case study also attempts to inform South-South cooperation initiatives that promotes solution and knowledge exchanges in agricultural extension services. In the context of strengthening its cooperation with China to boost poverty reduction efforts in other developing countries, UNDP is working with China and other countries in Asia and Africa to promote exchange of experiences in sustainable extension services. Although it is important to bear in mind that the enabling conditions of the scaling up of the AESTF programme in China are rooted in the country's politico-economical context, one can also consider how elements of such a practice can be adaptable to other country contexts.

## Introduction

The changing global context of today adds urgency and increasing demand on agricultural extension services in developing countries. Population growth,<sup>1</sup> shortages of land, water and other critical resources, coupled with emerging threat of climate change, put increasing pressure on food supplies and the entire agricultural supply chain. In some developing countries, food security remains or will become a serious challenge. In other developing countries, economic development depends on agricultural growth, which in turn counts on the transformation of subsistence oriented production system to market-oriented system. Agriculture extension is one of the critical interventions for boosting agriculture production and transformation.

From a broader rural development perspective, disparity in human development often exists between rural and urban populations. Farmers need to be supported to benefit from

<sup>1</sup> According to United Nations (2008) World Population Prospects, by 2050 there will be an estimated 2.3 billion more people to feed (one third more than today).

the development and globalization process equally as the urban residents. Agricultural extension services, among others, could contribute to reducing the inequality and enhancing rural development. Along with such intensified and emerging demands, agriculture extension services have evolved from their initial narrow scope of transferring of technology (ToT), to a broader approach of providing information and knowledge, facilitating farmers' linkages with other institutional support such as input supply, credit and agriculture produce marketing, which aim at enhancing farmers' productivity, income and livelihood (Gebremedhin, 2006).

In developing countries, agricultural extension systems have now reached a watershed. There is a perception that traditional approaches have delivered limited results because they have been too top-down and 'paternalistic' in their approach. New models being piloted in many countries emphasize decentralized, participatory and market-oriented approaches that focus broadly on improving rural livelihoods rather than just boosting agricultural yields. Agricultural extension services used to be provided primarily by governments; nowadays they are often provided by a variety of local, national and international organizations through innovative market-oriented mechanisms and partnerships. Many of these pilots are local level innovations and yet to be scaled up to national schemes. Successfully scaling up these local innovations will bring about wide spread benefits to farmers, decrease poverty and increase food securities for the developing countries.

However, to make a local small-scale innovation in agriculture extension services a success at larger scale is a development challenge. There are a number of critical questions to ask; what innovations should be scaled up? What are the necessary conditions that enable the scaling up? What are the risks associated with scaling up that need to be managed? These questions cannot be easily answered without a deep analysis of the innovations, the initiation and scaling up processes, and the impact of the scaled up schemes.

Scaling up is not a new concept among development practitioners and academics. Discussions on this concept have started as early as the 1970s. It has been brought to the forefront of the development agenda within the last decade, especially since the issue of development effectiveness has become a priority for development agencies, donors and governments. In 2004, the World Bank organized a conference on Scaling up Poverty Reduction in Shanghai, China. More recently, IFAD conducted a review of its institutional approach on scaling up

rural poverty reduction with the Brookings Institute (Linn, 2010). UNDP's recent thematic evaluations on local governance and capacity development also pointed out the need for integrated approach and achievement of sustainable and transformational development impact.

Although there has been a significant evolution in the discussion of scaling up development interventions, some of the practical and fundamental questions remain unanswered, and not all the knowledge has been distilled to its ultimate application for different stakeholders. There is a concern that "scaling up is often attempted without proper guidance, preparation and tools, leading to a frustrating experience" (Binswanger-Mkhize et al., 2009, p. 7).

This case study attempts to answer the above questions through analyzing China's AESTF programme. It introduces how such a new model of agricultural extension in China was scaled up from a local innovation in 1998 to a scheme covering more than 1800 counties in China, benefiting over 60 percent of its large rural population of 720 million people. It analyses the most important enabling conditions for the scaling up of the local innovation and intends to provide useful lessons learned for its further scaling up within the country and to transferring knowledge to other countries through South-South cooperation mechanisms.

## The China Agriculture Special Task Force (AESTF)<sup>2</sup>

AESTF is a programme of the Government of China with the support of the United Nations Development Programme (UNDP), which introduces demand-driven and market-oriented mechanisms to link farmers more directly to improved technology, new business models and product markets. Although AESTF relies on policy support from the government, it seeks to reform the traditional supply-driven government efforts in that it innovates on profit-sharing schemes for farmers and technical extension workers. They form 'common interest economic entities' that help develop entrepreneurship among the rural population and integrate farmers, particularly in disadvantaged areas, into the market economy.

<sup>2</sup> The term "Agriculture Extension Special Task Force" or Nongcun Keji Tepaiyuan in Chinese, refers to the extension practitioners, often skilled technical personnel or professionals with entrepreneurial skills, who are selected to participate in developing more efficient enterprises at the farm and village level, thereby helping farmers move out of poverty.

The AESTF initiative involves the secondment of selected AESTF practitioner from a government agency, a university, a public research institute, a county agriculture experiment station or an agricultural school. Importantly, the selection of practitioners is based on identifying people with the relevant skills, expertise and motivation to be matched with the demand for identified technology or rural enterprise opportunity. This is very different from the earlier practice when extension worker are primarily appointed directly by a particular government agency in charge of agriculture.

AESTF practitioners typically first establish a demonstration site to show farmers new agricultural products and technologies that can increase productivity and income. In addition, AESTF practitioners also support farmers to identify a ready market for the product. After this demonstration and market oriented communication, AESTF practitioners sign contracts with farmers to help them introduce the new products. Most of the contracts guarantee minimum profits based on market price estimates of the products. If the contractual cooperation is successful, AESTF practitioners will organize farmers into cooperatives, improve communication and enhance procurement scales and sales, thereby reducing farmers' costs while increasing their income. If the cooperative is successful, some AESTF practitioners will then help transform the cooperatives into companies in which farmers will become either shareholders, employees or both. Some AESTF

practitioners remain involved in the company as shareholders while others may choose to move on to new projects.

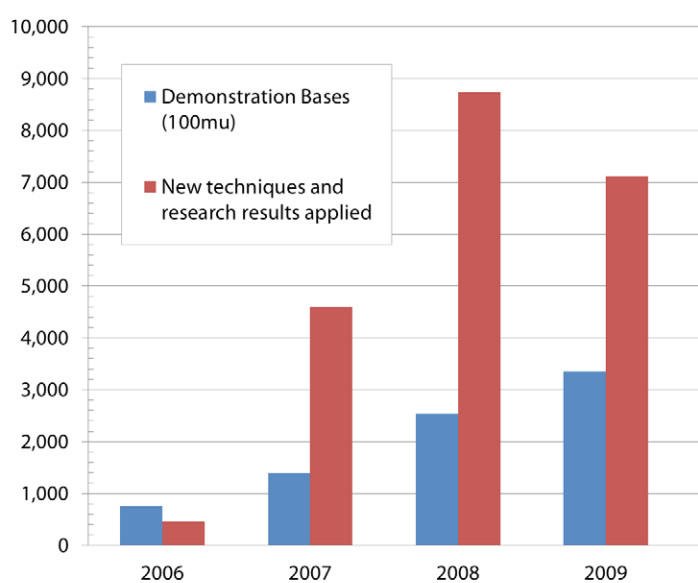
The AESTF mechanism requires that the practitioners have good command of both technical and entrepreneurial skills. However, many AESTF practitioners have either technical or entrepreneurial skills. Training programmes are designed to ensure that AESTF practitioners develop both skill sets, as both are necessary for the success of AESTF practices. There are also increasing partnerships between the practitioners who have complementary skill sets to work together on joint projects.

*Since implementing the AESTF in Beiliu City of Guangxi Region in 2006, a total of 82,483 people, including 38,536 women were benefiting from the project, lifting 2,532 farming households out of poverty. Within two years, the per capita net income of farmers in Beiliu Town increased by 35.67 percent, from 3,392 RMB in 2006 to 4,602 RMB in 2008, with an increase of 11.9 percent per annum.*

Based on a local innovation initiated in a city called Nanping in the southern part of China, the AESTF since then has developed in many areas in China. The Ministry of Science and Technology (MOST), together with other related ministries, planned to further disseminate the practices and approached UNDP for international cooperation. UNDP starting from 2006, supported the expansion of AESTF pilots and helped develop national and local capacities to establish the sustainable and coordinated AESTF mechanism in China. The AESTF has been scaled up quickly in terms of coverage and benefits since then.

In 2006, the AESTF demonstration bases were only 75,000 mu (50 square kilometers) in size, and grew to cover 335,000 mu (223 square kilometers) by 2009, more than four times of its original coverage. Over 7000 new techniques and research results have been applied to agriculture activities in 2009, compared to only 453 applications in 2006. By 2010, through a network of 70,000 AESTF practitioners, hailing from government agencies, academies and research institutes, some one million farmers have directly benefited from the programme. The scheme, currently in 1,800 of China's 2,872 counties, will be expanded to 80 percent of counties within five years, with the aim of providing direct access to these agricultural technology practitioners to all villages in all counties within 10 to 15 years.

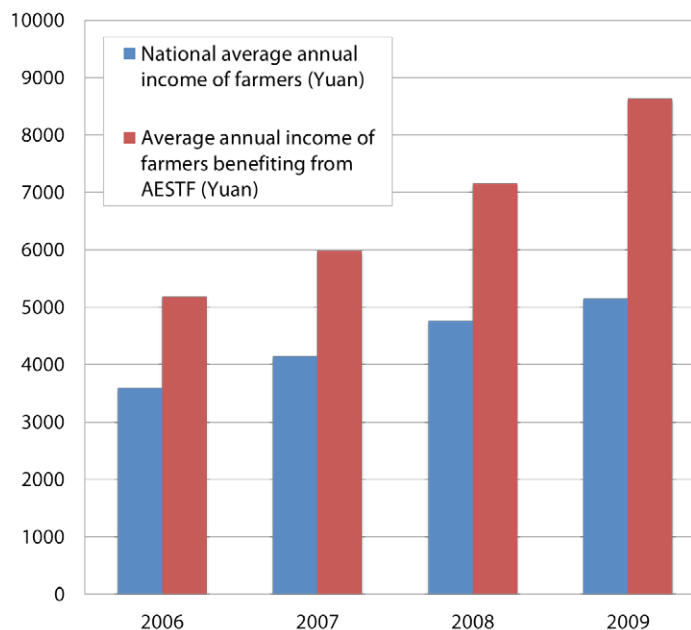
**Graph 1: The scale of the AESTF, 2006–2009**



Note: 100 mu equals 66,666 square meters.

Source: Author's diagram based on data from the Ministry of Science and Technology, China.

**Graph 2: Increase of income for farmers benefiting from AESTF, 2006-2009**



*Source: Author's diagram based on data from the Ministry of Science and Technology, China*

The AESTF programme has continuously contributed to the increasing income of farmers and lifting farming households out of poverty. In 2009, the average annual income of farmers, who benefitted from AESTF services, increased by 67 percent compared to their income level in 2006.<sup>3</sup> This is 24 percent higher than the national average increase during the same period.

## The evolution of AESTF from a local innovation<sup>4</sup>

The national AESTF initiative was developed based on a local innovation in Nanping city in 1998. Nanping is a prefecture-level city in Fujian province of China. It covers 26,300 square kilometers of land and has a resident population of three million. In agriculture, Nanping has played an important role in providing rice, bamboo, livestock and fishery products for the Fujian

<sup>3</sup> Based on project reports provided by the Ministry of Science and Technology.

<sup>4</sup> According to Hartmann and Linn (2008) "any intervention that is eventually to be scaled up starts with an idea, an innovation or a model that contributes to the development process". The innovation can either be "new in an absolute sense or new in the local context where it is being applied. It can also be an old idea whose time has come for implementation as the conditions are ripe to move it forward.

Province, which has a population of 30 million. Nanping enjoys the name "Barn of Fujian".

However, with the transition from planned economy to market economy since the 1980s, agriculture products from Nanping became less competitive in market due to its poor quality and lack of marketing support. After several years' of decrease, farmers' annual income growth rate in Nanping was down to 0.2 percent in 1998. The municipal government therefore launched a series of field investigations to understand the challenges faced by farmers and found that technology extension has been a bottleneck to increasing agriculture production. The traditional approach in providing technological support to farmers was not efficient. The extension workers were government employees, who were also tasked to perform other duties in the villages, among which included levying fees and taxes, as well as enforcing family planning policies. There were little incentives for the extension workers to apply new technology and train farmers. The reform of the existing agriculture extension system was urgently needed.

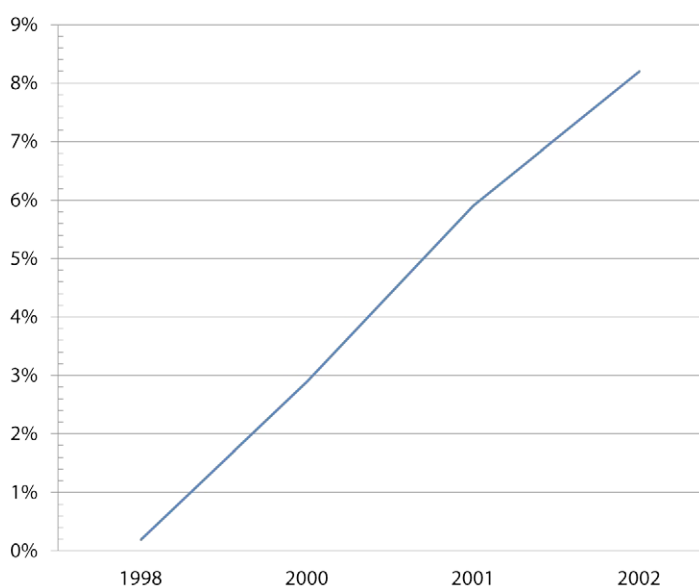
Adding to the sense of urgency for reforming the agriculture extension system, a flood in 1998 damaged 80 percent of agricultural infrastructure in Nanping and threatened to seriously impact agricultural productivity. The leadership of the municipal government decided to assign a group of agricultural practitioners to villages to facilitate disaster relief, reconstruction and agricultural recovery. As this was a special arrangement to complement the existing agriculture extension system, it was named as "Special Technical Taskforce".

This initiative was launched as a top-down administrative measure from the municipal government and it was accepted not without reluctance by the agriculture institutions and practitioners. Agricultural institutions and township governments were concerned about extra cost associated with seconding staff to the villages. Agriculture practitioners were not motivated to live and work in the poor villages. The municipal government had to provide special incentives to address these concerns. The incentives included special allocation of budget to cover travel costs and living allowances of the taskforce members, holding their posts while being seconded to villages for one year, and preferential considerations for promotion. In February 1999, the first group of 225 AESTF practitioners was selected and sent to 215 villages of Nanping, as a pilot initiative of the municipal government to support post-disaster recovery and agriculture productivity.

The first group of AESTF practitioners met the classical challenges while trying to apply new technologies. Small landholding farmers were reluctant to jump on board with new technologies or new products. Some of the technicians then started to invest their own money into the production process and to produce together with the farmers. When the new and higher-quality products (tea, mushroom, bamboo, or others) were sold out at local markets, the technician shared the profits with farmers as agreed before. This innovative practice of AESTF practitioners convinced farmers of the potential for producing new products and applying new technology. The practice of sharing interest was initiated by several individual practitioners and learned by others later on. It was finally recognized and supported by the municipal government as a potentially feasible solution addressing the sustainability concern of the AESTF initiative. Many AESTF practitioners still maintained their share in the joint small enterprises that they have set up together with the farmers even after their one-year term of secondment.

Building on the experiences of the first group of AESTF, the demands of farmers were further analysed. The government then sent more groups of practitioners specialized in rural public affairs management, agriculture logistics, marketing, and financing to the villages to help provide comprehensive solutions to the farmers. Through four years of implementation of the comprehensive agriculture extension support through the

**Graph 3: Growth rate of farmers' annual income in Nanping, 2002-2008**



*Source: Author's graph based on data from Agriculture Office of Nanping City.*

AESTFs, the gross agricultural product in Nanping increased from 6.19 billion RMB in 1998 to 10.38 billion RMB in 2002. The average net income of farmers was increased by 8.2 percent in 2002, twice the average level in the Fujian Province.

In January 2001, at a National Agricultural Science and Technology Conference, Nanping experiences were disseminated as an innovative complement to the agricultural extension services. In May 2002, MOST organized a field visit to Nanping, attended by directors of provincial science and technology bureaus from five western provinces. They learned and adapted the AESTF practice quickly across several provinces. For instance, Ningxia regional government

adjusted the AESTF model and implemented "agriculture technology entrepreneurship" initiative throughout the autonomous region. Zhejiang provincial government managed to send technicians to every township under its jurisdiction and put a focus on poverty reduction through agriculture extension taskforces.

In 2004, MOST and the Ministry of Personnel jointly issued a policy guidance note on the Experiment of the AESTF's Entrepreneurship Campaign. Subsequently, various different versions of AESTF were experimented across China, spurring innovation in the systems and mechanisms concerned. By the end of 2005, there were altogether 593 counties in 24 provinces of China that piloted AESTF initiatives. This marked a 122 percent increase in the number of piloting counties within one year. Moreover, there were 23,115 AESTF practitioners in 2005, an increase of 65 percent compared with 2004.

In 2006, MOST approached UNDP to launch a joint programme to promote the national dissemination of the AESTF. The UNDP project catalyzed the establishment of a multi-ministry coordination mechanism, strengthened knowledge sharing

### *Chronology of the AESTF initiative:*

*Initiative begins:*

*In 1998 in Nanping city*

*Local adaptations:*

*By 2004 in 267 counties (9%)*

*National promotion:*

*By 2006 in 1,000 counties (35%)*

*International support:*

*By 2010 in 1,800 counties (63%)*

*Institutionalization & managing scale:*

*By 2020 in 2,872 counties (100%)*

among the pilot provinces, and supported the local level cross-sector integration. It also improved the gender sensitiveness and poverty reduction focus of the initiative. In areas where the UNDP project was implemented, the percentage of households under the poverty line was lowered to 10 percent in 2007 from 14 percent before the project started in 2006. Through the project support, about 200,000 more women in rural areas benefited from AESTF services, raising the total number of women beneficiaries to 670,836 by 2007.

In 2006 and 2007, MOST, together with the Ministry of Personnel and the Ministry of Agriculture, held a national meeting on the AESTF pilot work and an AESTF experience exchange meeting in Nanping City, Fujian Province, and Liaocheng City, Shandong Province, respectively, to call on a national adoption of the system. By 2008, 1,640 counties (cities, districts and banners) in 31 provinces in China all started the AESTF initiative, with the number of the AESTF members reaching 140,000. By 2010, 1800 counties, accounting for 63 percent of the counties in China had implemented the AESTF.

Having experienced such developmental stages as an initial exploration by one local government, expansion and adaptation through local authorities to several regions, and holistic innovation supported by the national government, the AESTF system gradually manifested the following features: diversified profile of the AESTF members and services, increased coverage of beneficiaries, regularized service management, and legalized interest relations. The AESTF teams collaborated actively across sectors, regions and gradually formed a service network for the AESTF entrepreneurs. The quality of the AESTF service has seen greater improvement through such professional networking among the practitioners.

## Enabling conditions for scaling up the AESTF

The scaling up of the Nanping initiative to a national programme has benefited from several important factors. The “vision for scale”<sup>5</sup> was reflected in the original design of the initiative. Although the supplementation to the existing extension services with market oriented schemes seemed to be a spontaneous reaction to the natural disaster by the local government, it was responsive to

5 Hartmann and Linn (2008) identified the “vision for scale” a key enabler in the scaling up process: “To move from idea to reality and from scientific finding to practical application, a vision for implementing and scaling up the idea, innovation or model is critical. Ideally, such a vision should be developed while the first phase of an intervention, frequently called a pilot, is being put in place. Pilots should be designed in such a way that they could be scaled up, if successful”.

the broader rural development demand and had close linkages to national priorities. The unique feature of profit-sharing between AESTF practitioners and farmers catalyzed effective win-win partnerships and ensured the sustainability of the various initiatives during the process of local-level dissemination and adaptation, or in other words, the ‘scaling out’ process. The multisector collaboration at the national and subnational level was critical in creating an enabling policy environment for the eventual scaling up of AESTF to become a national scheme.

## *Alignment with national development priorities and trend*

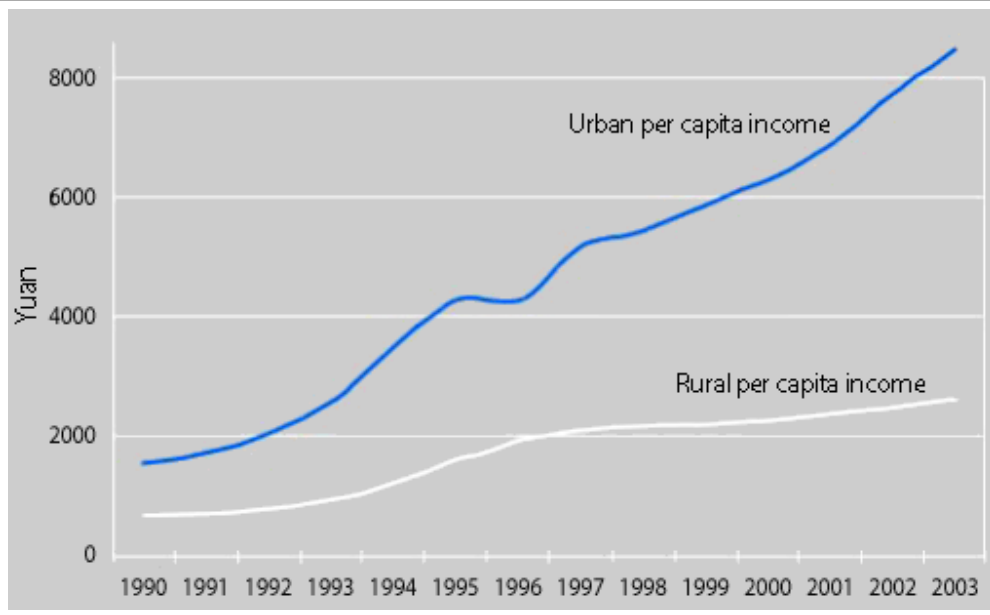
Although the seed initiative for the AESTF programme was launched as an immediate response to the natural disaster, it was designed with a vision that market-oriented schemes in promoting science and technology would be a most efficient and sustainable approach to increase agricultural productivity, address food insecurity, and balance urban and rural development. From a historical perspective, such a vision was supported by national development priorities, and was innovative in promoting the national economic reform.

Due to presence of a dual economic system tilted in favour of industrial and urban development that had dominated China’s economic policies since the 1950s, by the time of the late 1980s, when China started to open up to the world and to reform its economic system, the rural-urban development gap was already so wide that it became a bottleneck to further the socio-economic advancement of the country. The income inequality continued to enlarge between rural and urban areas during the past two decades.

The Government of China has been reforming its agricultural policies and rebalancing rural and urban development since the 1980s through a series of measures. From 1978 to 1984, China established and disseminated the Rural Household Responsibility Contracting System. Under this system, land was contracted to individual households for a period of 15 years. After fulfilling the procurement quota obligations set by the government, farmers were entitled to sell their surplus agricultural produce on the market at unregulated price or retain it for their own use. The household contracting system enhanced incentives and promoted efficient production. It is estimated that total factor productivity increased 15 percent as a result of the improved incentives inherent in the household responsibility system. During the period between 1978 and 1984, agricultural output increased by 45 percent (Lin, 1989).



**Graph 4: Trends in per capita income changes of urban and rural residents in China, 1990-2003 (at variable prices)**



*Source: UNDP National Human Development Report (2005) based on data of National Bureau of Statistics, 2004: 357.*

Together with the reform of the economic system in rural China, the political system was also undergoing reforms. In 1987, the People's Congress issued Village Committee Organization law, which laid the foundation for village-level self-governance structure.

From 1985 to 1997, China focused its rural reform on the marketization of food prices. In 1985, the government started to relax the government control on prices on some agriculture products and started the "dual-track" price policy as the intermediate from the state control price system to the free market price system. By 1992, most of the provinces in China lifted government control on food prices. In 1993, the Central Committee of the Communist Party of China issued several decisions to promote industrialization of agriculture. It had become a central task of the 9th 5-year plan of China in 1996.

Along with the marketization of agriculture, the non-agriculture sector in rural areas was also developed, mainly through the mushrooming of Township and Village Enterprises (TVEs). Although TVEs were collectively owned, they were given much flexibility to be market oriented. By 1987, the total output value of TVEs surpassed that of the agricultural production. With the government supporting policies increased after Deng Xiaoping's

South Tour Speeches<sup>6</sup> in 1992, TVE employment grew to a peak of 35 million in 1996. Its' share of gross domestic product (GDP) went from 6 percent in 1978 to 26 percent in 1996 (Bardhan, 2010).

However, with all these efforts, there remained unresolved bottlenecks in agricultural development. These included poor market services and agriculture circulation system, lack of business management personnel, and an unsustainable TVE business model. In order to resolve these bottlenecks and achieve accelerated progress in rural development, in October 1998, the Central Committee of the Communist Party of China issued Decision on Key Issues of Agriculture and Rural Work, raising agriculture, rural areas and farmers as key issues in

reform and opening up and modernization construction for the country as a whole. This document stressed that promotion of rural economic development and agriculture productivity would be the central part of rural development; all the policies should be helpful for revitalization of rural economy; and, agriculture science and technologies would be the basis of agricultural and rural economic development.

The AESTF initiative, since its inauguration, took steps to make positive changes in the domestic policy environment in support of rural development, agriculture and farmers. There were two clear features of the initial design of the AESTF initiative that were innovative which corresponded to the policy trend at the time.

First, the selection of the extension practitioners was based on criterias defined by the demand of agricultural and rural development. This improved the process in comparison with the old practice which merely depended on personnel being dispatched by local governments. In response to the policy of supporting both agriculture productivity and rural economical

<sup>6</sup> Deng Xiaoping, a reformer who led China towards a market economy, traveled to several cities in the southern part of China to deliver speeches and remarks, in order to reassure the local governments of the opening-up policy and economic reform. This was in response to some Communist Party leaders' reluctance to further the market oriented economic reforms after the 1989 Tiananmen Square political movement.

development, the practitioners were not limited to agricultural technicians. They also included practitioners with business education backgrounds and experiences, who assisted in the management of agriculture and rural enterprises. By linking agriculture to agro-processing and services such as tourism and food services, AESTF not only created more profit margins from agriculture but also generated more opportunities for farmers to migrate from the agricultural sector to manufacturing and service industries.

1997

- September: 15th Party Congress recognizes private ownership as an 'important component of the economy', — seen as a major breakthrough on ownership issues

1999

- March: Constitutional amendment places private ownership on an equal footing with public ownership
- Local governments immediately start relaxing restrictions on private enterprises

Second, incentives for the practitioners were designed in a way that profits earned by joint venture of the practitioners and the farmers could be shared among them based on their agreed contracts. This was made possible by the long-practiced rural household contract system, the supportive policies for the development of TVEs, and the overall policy change that upgraded private ownership to the equal footing of public ownership in economy.

However, such a practice was still very innovative at the time when the marketization process was just starting in the agriculture sector in China. As agriculture extension workers' salaries were paid by the government institutions, there were not yet clear policies granting them the flexibility of engaging in rural business partnerships with their clients. In other words, the AESTF initiative was still experimenting and exploring new policy space windows in this regard.

Till 2004, the AESTF initiative was still only able to 'scale out' to a number of other localities. This is partly due to the fact that the above mentioned policy changes did not yet touch the structural imbalance of rural and urban economy. Agriculture and rural development was still considered as merely a foundation in support of urbanization and industrial development.

During the first years of the 21st Century, the Chinese Government went through a transformation of its development paradigm in order to address the acute inequality in development, in particular, the disparity between urban and rural areas. In March 2005, the Working Report of the Chinese Government launched the strategy for the urban development to support rural development and for the industries to help the agriculture sector. One significant measure taken by the government was to completely abolish agricultural tax in 2005. And in the same year, the government launched a national programme of "new countryside development", featuring investments to improve agriculture production, enhance livelihood, cultivate community culture, ensure rural sanitation and improve grass-root level democratic governance.

These policy changes have greatly supported the scaling up of the AESTF initiatives. In 2006 and 2007, MOST, the Ministry of Personnel, and the Ministry of Agriculture issued corresponding sector and collaborative policies to promote the AESTF initiative at the national level. They also jointly launched a large scale cooperation programme with UNDP in support of further dissemination of the AESTF initiative nationally.

### *Responsiveness to opportunities and challenges brought by globalization*

Born in the context of China preparing to join the World Trade Organization (WTO), apart from being aligned with the domestic development priorities, the AESTF initiative was also consistent with China's efforts in expanding its globalization process.

In 1997, series of negotiations around China joining WTO already sent clear signals that China would be able to become a WTO member in the near future. It was assessed that accessing WTO would bring tremendous opportunities and challenges to China's agricultural development. Main challenges that China was facing at the time, was its limited capacity in producing high end value addition of agricultural products, modern logistics, marketing, and the management of the agricultural industry. There was a real risk that the agriculture industry in China would be gradually monopolized by foreign companies, leaving China merely as a base for exporting labour-intensive crops. The only way for China to overcome the challenges was to support agricultural industrialization. This would require a series of reforms in its agricultural sector.

First, since the inauguration of the Household Responsibility System Reform, China's agriculture has been mainly run by small-

scale farmers organized by households. Farming households were organized into associations or collaborated with enterprises in order to have scaled-up effects to compete in the market. These associations purchased agriculture produce from farmers, organized deep processing, sales, and transportation. Since processing, sales, and transportation needed additional workers, forming such associations or enterprises helped create jobs. This increased farmers' income and helped narrow the urban-rural income gap. With farmers' association, farmers not only had more income from economy of scale, financial investment and technical support but had better protection rights which mitigated their risks in a collective manner.

Second, from the government's perspective, the WTO accession would regulate how the government could support agriculture development. In China, there was great potential for strengthening the structure of the Green Box support including research, training, extension services, marketing and promotion of service networks for agricultural products. In particular, there was a wide gap between China and developed countries in terms of agricultural technology transfer. The agricultural technology transfer rate and technology to agricultural growth accounted to only 30 percent and 45 percent respectively compared with 70 percent and 85 percent in developed countries. Low and slow transfer and adoption rate of modern science, technology and knowledge was a critical development bottleneck in rural China mainly due to the following factors; technologies were not timely and effective in responding to the practical needs of farmers and market signals; the agricultural production system was comprised of a large number of small farm households in adverse geographical locations creating difficulties for traditional extension system to organize and establish value chains; and technology adoption mechanism and transfer were limited in rural communities. Moreover, government and public financing for new technology development and transfer was insufficient.<sup>7</sup>

In light of this context, the AESTF initiative was launched to strengthen the government's support to the agricultural sector and to address the challenges brought by WTO.

The AESTF practitioners played an important role in supporting the organization and operation of farmers' cooperatives. Some practitioners particularly encouraged farmer associations/cooperatives to apply for their services and sponsored projects. Others directly helped farmers who received their services to organize and set up specialized cooperatives. The practitioners

also helped farmers' cooperatives set up governance structures, operational procedures, and management systems. They supported the cooperatives to collectively organize supplies, sales and negotiations.

In 2009, in Qingshiwan village of Gansu an AESTF practitioner helped farmers set up their first cooperative, which specializes in vegetable growth and trade. The practitioner helped the farmers' cooperative to access local supermarkets directly by building their negotiation capacity. Being able to directly negotiate with local supermarkets, without going through a third party broker, farmers could get higher prices than before. In 2009, the cooperative bought and sold 200,000 kg vegetables generating an additional income of RMB 40,000 Yuan in total.

The government's support played a fundamental role in launching and spreading the AESTF initiative. The government provided many supportive policies for the AESTF. The practitioners were usually seconded from government agencies or affiliated public institutions. Apart from continuing paying the practitioners' salaries, the government also gave favourable promotion policies for AESTF practitioners based on their agricultural extension achievements. Meanwhile, local governments provided funds to support the technical projects led by the AESTF practitioners.

In Ningxia region, the regional government specified several incentive policies towards supporting AESTF practitioners. Practitioners could fully claim their due share gained through the joint ventures with farmers; they have the freedom of negotiating with farmers on how much technical in-kind share they can have in the joint ventures; and government agencies or public institutions encouraged their employees to start-up joint ventures with farmers on voluntary basis. Furthermore, practitioners who had outstanding contribution toward local development were rewarded monetary incentives ranging from RMB 10,000 to RMB 30,000, approximately USD 1,500 to 4,500. Those who demonstrated clear achievements in reducing poverty and promoting local development were rewarded with one-step up promotion in salary; and awarded the honour of being an "Outstanding Government Worker".

### *Innovations on incentives and win-win partnership*

At the individual level, AESTF is market-oriented and incentive-driven to ensure income generation for all key shareholders, with particular attention to farmers. Win-win incentive mechanisms are the key to ensuring sustainable partnerships between farmers and AESTF practitioners. In practice, several business models were developed through which the AESTF practitioners and farmers would share profits from their joint efforts. For example,

<sup>7</sup> [www.undp.org.cn/projectdocs/50692.pdf](http://www.undp.org.cn/projectdocs/50692.pdf)

some practitioners set up joint ventures with farmers and share the profits according to their signed agreements.

In 2009, two practitioners managed to convince 60 farming household in Baisha Village in Hainan to join them in producing honey melon. The two practitioners first invested out of their own pocket some seed funding into the joint venture. Each participating household invested RMB 10,000 yuan. The new technology introduced by the practitioners helped farmers gain two harvests of melon in one year. By the end of the first year, each household gained RMB 14,400 yuan from the melon production base. The two practitioners also gained profits from their investment.

Some practitioners had set up demonstration bases to help train framers on how to produce certain products using new technology. Farmers then became standardized suppliers to the production base which helped generate additional income.

In September 2004, a practitioner in Liangping County established the Dashun Waterfowl Breeding Demonstration Base with UNDP's support. The base established a technical service group which included a leading expert, nine experts from academia, and 13 AESTF practitioners from Liangping Waterfowl work stations. The base standardized the waterfowl breeding through providing breeding eggs, vaccination and adequate nutrition. The base also provided technical training for framers that focused on management, branding, and sales support.

By 2006, the AESTF team delivered technical support to many farmers in Liangping County, benefiting 836 poor households. Each household bred more than 2,000 commercial ducks per

year, which produced an additional income of RMB 10,000 yuan. The base also extended technical service and provided breeding eggs to other counties in Three-Gorges Reservoir Areas and other provinces such as Yunnan, Jiangxi, Hunan, etc. The base was able to benefit more than 10,000 households in Liangping and other counties of Three-Gorges Reservoirs.

At the institutional level, the AESTF initiative has many stakeholders; central and local governments,

private sector agencies, academia, farmer association, media, and international organizations. All of the involved stakeholders contributed to many diversified and tailor-made models that assisted in scaling up the programme.

### **A Public-Private Partnership:**

In Pingluo county of Ningxia region, the government partnered with the Rural Credit Union to launch a new credit service scheme targeting AESTF practitioners. The assessment done by the credit union indicated that AESTF practitioners were actively engaged in technical advancement, had steady incomes, and enjoyed better credit history and repayment capacity compared to individual farmers. The practitioners also assisted farmers' associations improve their income generation streams and strengthened their governance structure. To address this market opportunity; the Rural Credit Union jointly established a partnership programme with the county government, called Green Financial Channel for AESTF. The loan scheme has three levels of credit lines to support individual practitioners to start-up joint venture activities with local farmers or farmer associations. The allowable loan amount is based on the practitioner's credit score which ranges from RMB 60,000 yuan to RMB 100,000 yuan (about US\$7,500 to US\$12,500). The AESTF start-up loans enjoy flexible repayment schedules and lower interest rates in comparison to other commercial loans.

In 2003, Pingu Rural Credit Union branch issued at total of RMB 0.98 million yuan in loans to AESTF practitioners. The loans enjoyed high on-time repayment rate at 98 percent. By 2005, the AESTF credit programme had expanded to 13 additional cities in the region. Many AESTF practitioners benefited from the credit loans which amounted to a total of RMB 16.908 million yuan in loans that supported start-ups and expansions of joint ventures in the rural areas. In 2006, the credit programme covered 21.4 percent of the practitioners in the Ningxia region. This was both a strong promotion of the AESTF initiatives and also an innovative business model for the Rural Credit Union.

### **A Government – Civil Society Partnership:**

From May 2006 to April 2008, Bifan Cai, a female teacher from Zhejiang Forestry College, worked in Qili Village, Kecheng District in Quzhou City as an AESTF practitioner. During her two year secondment, she supported the development of a local agri-tourism business by bridging the partnership gaps

*Media plays a critical role in promoting the sustainable development of the AESTF programme. During the snow storm disaster in 2008, AESTF played an important role in helping farmers recover. UNDP and MOST worked closely with the major media outlets in China to report on how AESTF helped farmers mitigate their loss and recover from the snow storm disaster.*

between the local government, tourism associations, and the media.

The practitioner initiated the work by conducting 20 training workshops about agri-tourism, engaging more than 500 participants, which included local officials, farmers, local media, etc. On July, 2007, she sat up the Qili village Agri-tourism Training School to ensure the long-term sustainability of the training. By early 2008, more than 62 households started their agri-tourism business, generating more than 111 direct and 538 indirect employment opportunities.

She also assisted the local government with the preparation and implementation of the "Agricultural tourist attractions of Zhejiang Province" and the "National Agri-tourism demonstration" programmes, planned several tourism events such as "Kecheng Rural Carnival", and effectively raised the popularity of Qili Village through the media. Moreover, she coordinated with the local government on the establishment of the "Village Agri-tourism Service Centre" and "Village Agri-tourism Cooperative". The main responsibilities of the cooperatives were: organizing villagers to participate in tourist activities such as local artistic performances, tour guidance, home hotel management, maintaining public sanitation, coordinating profit distribution between farmers, and cooperating with local government to deal with complaints.

In 2006, Qili Village received 168,000 tourists, with a total tourism income reaching RMB 6.8 million yuan. In 2007, Qili Village received 258,000 tourists, and a total tourism income of RMB 10 million yuan, an increase of 47 percent from the previous year.

The farmers' income also increased. In 2004, the average annual income of a farmer was RMB 1,646 yuan; by 2007, the figure increased to RMB 3,858 yuan, an increase of 134 percent.

The success of the agri-tourism initiative earned Qili Village numerous awards such as the 'Demonstrative Village of Agri-tourism in Zhejiang Province' award and the 'National Agri-tourism Demonstration' award. Its success was later benchmarked in the Zhejiang Province.

During the scaling up process of the AESTF initiative, MOST carried out wide cooperation agreements with UNDP, IFAD, GTZ, JICA and other international organizations to improve and promote the AESTF programme. This was done by strengthening the systematic coordination among government sectors, improving

monitoring and evaluation frameworks, and engaging the media to ensure the continuous sustainability and development of the programme.

### *Multi-sector coordinated policy support across national and local levels*

The scaling up of AESTF has been supported by coordinated policies across several government sectors at both national and local levels.

### **Decentralization of the Chinese Agriculture Extension System**

*Prior to the economic reforms that began in 1979 in China, there were many separate agricultural agencies serving farmers at the county and township levels. During the early 1980s, an integrated grassroots extension system, through County Agriculture Extension Centres (CAEC) and Township Extension Stations was pilot tested in 29 counties. The model later on was expanded throughout the country during the 1990s. Till today, all the counties in China have adopted the CAEC model.*

*In 1993, China passed the Agricultural Extension law, which made each level of government fully responsible for funding its extension system, including the provision of capital support for facilities and equipment and operating funds to cover staff salaries and programme costs (Nie, et al., 2002).*

At the early phase when MOST started to recognize the good practice of AESTF and to encourage other provinces to learn from Nanping, the Ministry reached out to the Central Organization Department of the Communist Party of China, and the Ministry of Personnel. In 2002, the three ministries formed a joint investigation team, with several joint missions to Fujian, Ningxia, Gansu, Qinghai, Xinjiang, Zhejiang, Jiangxi and other pilot provinces to investigate the piloting experiences.

MOST and the Ministry of Personnel jointly issued an official policy document to recognize local AESTF practices as a promising initiative to push forward rural development and to encourage local governments to try out innovative ways to further advance the AESTF experiments through addressing local demands for sustainable rural development. The document served as a formal endorsement from the central government to support rural development which formally started the promotion of the AESTF

system at the national level. With this document many provinces, cities and counties obtained the momentum to develop local AESTF policies and modified them quickly as conditions changed. A series of regulations were formulated at the local level to better manage and regulate AESTF in a consistent and systematic manner. The local policies are comprehensive from scientific and technological policies to industrial policies, providing personal incentives as well as institutional incentives.

In the same year, the People's Bank of China joined force with MOST. They co-organized a policy forum to discuss how to leverage rural credit services to support AESTF initiatives in the piloting provinces.

In 2006, MOST approached UNDP to help promote the AESTF nationwide. With support from UNDP, an inter-departmental cooperation mechanism was established at the national, provincial, and county levels to provide comprehensive policy support in areas of technology, human resource development, fiscal and financial support, logistics, etc. MOST, Ministry of Personnel and the Ministry of Agriculture mobilized their local departments to coordinate the local policies and implementation. Thus, a multisector multi-level policy network was developed in support of the national dissemination of the AESTF. Even the Communist Party School of China was engaged through the UNDP project to disseminate knowledge and policy lessons from the AESTF among the senior leadership in the country to promote its national dissemination.

In June 2009, MOST, the Ministry of Human Resources and Social Security, the Ministry of Agriculture, the Ministry of Education, the Ministry of Publicity, the National Bureau of Forestry, All China Youth Federation, and the China Banking Regulatory Commission jointly established the Leading Coordination Group for the AESTF Initiative. The responsibilities of the national level leading coordination group include: developing key policies and measures related to AESTF efforts; coordinating and addressing critical issues in AESTF work; finalizing AESTF strategies and annual work plans; monitoring and evaluation; and exploring the sustainable mechanisms for AESTF work. The Leading Coordination Group was composed of ministerial leadership from all the participating ministries. The group organized a national coordination meeting for the AESTF initiative and released "Several Opinions on Deepening the AESTF's Entrepreneurship Campaign in Rural Areas". The national office of the leading group arranged for daily operation and management. The office director is Vice Minister of MOST. The deputy directors and members of the Office are Director-General level and Division

Chiefs of member ministries. The main functions of the Office include: implementing decisions made by the leading group; coordinating among member agencies and assisting in the implementation of member agencies.

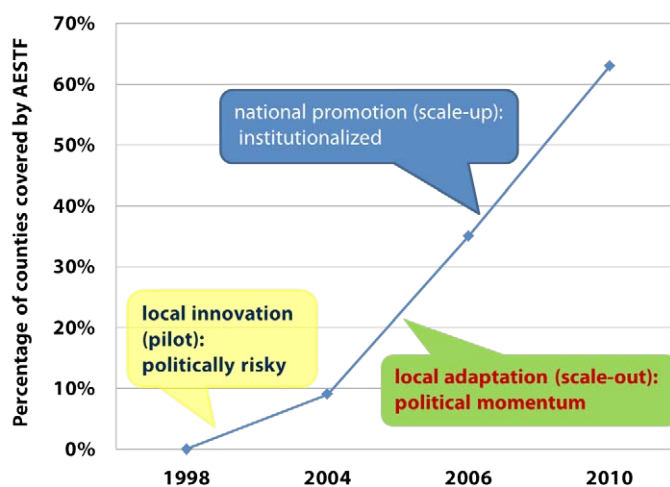
Similar coordination mechanisms were established at the provincial level and below in most provinces. Coordination offices were established at all levels with full-time staff. While AESTF is personally supervised at the national level by a vice minister, at the provincial level it is supervised by a vice governor or even the governor him/herself in some provinces, and at the county level it is usually led by the head of the county. Such a systematic arrangement of coordination mechanisms and leadership ensured that the AESTF will enjoy a comprehensive supportive policy environment for its implementation and scaling up.

## Conclusion

The AESTF initiative experienced a well-managed process, from a local level small-scale innovation, to a scaled-out programme in several localities, which eventually gained national support and coverage. It has scaled-up to have an impact on the country's agricultural industrial reform, serving as an important complementary measure for government provision on agriculture extension services. Graph 5 provides an illustration of the scaling out and scaling up process of the AESTF initiative.

Graph 5 shows that at the beginning, the initiative was an innovation and piloted by only one or a few local governments. It was seen as 'politically risky' and its prospect for scale or

**Graph 5: The scaling out and scaling up process of AESTF**





sustainability was uncertain. However, with the spreading of the practice to a number of other localities, the model was adapted and tested out by several local governments. The political momentum was then built up, when 10 percent of the counties in the country adapted the AESTF initiative locally. For certain, the size of the critical mass that could trigger political momentum for a local initiative varies from case to case. The accumulation of experiences in various local AESTF adaptations finally brought the initiative up to a 'tipping point,' where the systematic promotion at national level took place. International cooperation was invited in by the national government to catalyze the scaling up of the initiative nationwide, when 35 percent of the counties already piloted it locally. It then became institutionalized with necessary mechanisms, policies and legal framework to ensure its effectiveness and sustainability.

The main lessons emerging from the AESTF scaling up process point to the following important enabling conditions.

**First, driven by local demand, aligning with global context and riding on the domestic policy trend were the key vision and strategies of the initiative.** During the initiation and the scaling up of the AESTF initiative, there has been a constant

interaction between global context, national development trend, and local policies. The pathway towards its successful scaling up was featured by the mutually reinforcing linkages established between national level processes, global contexts, and the local level experiments.

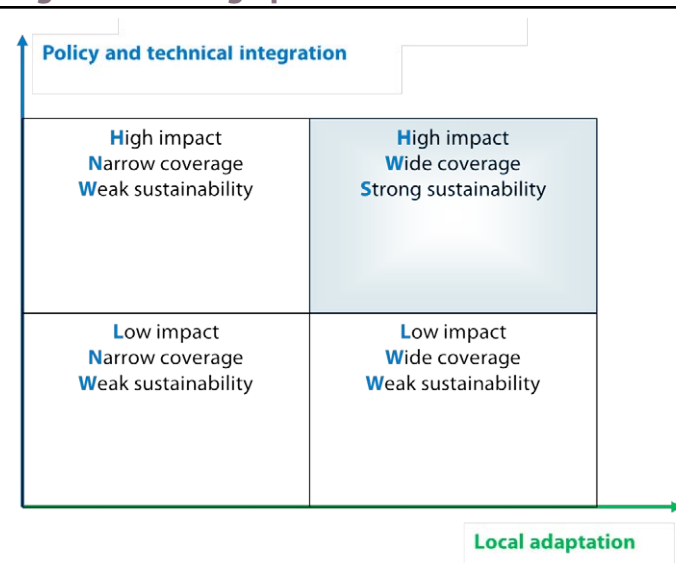
**Second, the design of the initiative itself had awarded all stakeholders incentives to foster win-win partnership.** The initiative was born in an era when the economy was transforming from planned to market oriented economy. The majority of local governments adhered to the principle of combining government action and market forces in undertaking the AESTF initiative. Government action is used to integrate various resources and create an enabling policy and legislative environment for the AESTF system, while market forces – interest-based incentive policies in particular – provides returns on investment in the industrial application and promotion of agricultural technology. Local governments helped AESTF members start industrial entities and profit-sharing entities with farmers to realize optimal allocation of personnel, capital, land, information and management expertise. Such practices set up a platform for entrepreneurship and injected impetus to the practitioners' innovation and application of agricultural science and technology.

**Thirdly, multi-sector and multi-level management mechanism and coordinated policies ensured the institutionalization of the AESTF.** Different departments at all levels cooperate with clear segregations of duties. The coordination work is conducted systematically through planning, implementation, monitoring and joint evaluation. Policies were formulated in a coordinated manner, comprehensively supporting all aspects of the programme, including agricultural industrial development, fiscal space, human resources, and mass communication.

**The enabling conditions analysed above are about two fundamental dimensions of a scaling up initiative. One is about policy and technical integration.** This is reflected in the AESTF through both its multi-sector coordination mechanism and the innovative partnerships among governments, private sector, academia, media and individuals to combine expertise and resources. The AESTF gained high level integration in both policy and technical aspects. **The other dimension is about local adaptation or adaptability.** This is supported by the design of the programme where incentives are provided for individuals to innovate based on local demands. Various modalities of profit-sharing and win-win partnerships mushroomed benefiting from highly motivated individuals. It is also ensured by the decentralized way of managing AESTF so that local governments are empowered to make most appropriate policies that suit the local context. It is the local governments that can decide on their concrete budgetary support, management mechanisms, as well as performance management incentives, under general policy guidance from the national government. The graph below demonstrates the two dimensions and shows how different levels of integration and adaptation may relate to the eventual result of the initiative.

**Only when an initiative gains both high level of policy and technical integration and abundant local adaptations, it is most likely to have high impact, wide coverage, and strong sustainability.** This is indicated at the upper right quarter of figure 1. This is an ideal scaled up scenario (HWS). When the initiative was widely adopted and adapted, but lacks integration on its related policies and technologies, the initiative was only scaled-out with wide coverage, but not necessarily sustainable or having high impact. This is the scaled-out scenario (LWW – lower right case). Often scaling out can be a necessary step alongside scaling up. Missing broad local adaptations and rushing for centralized institutions often result in a highly centralized approach, whereby the initiative may have high level policy integration and impact, but cannot be sustainable due to its top-down approach and not rooting into local realities (HNW – upper

**Figure 1: Scaling up scenarios**



left case). It is important to point out that here narrow coverage itself does not constitute the reason for weak sustainability. Targeted approach to population groups may appear to have a narrow or rather focused coverage, but the sustainability can be strong in many cases. The cases that fall into this quarter are those highly centralized policies or programmes that restrict local actors from adapting the models. The narrow coverage and weak sustainability are result of such restrictiveness. The lower left quarter refers to mostly the pilots and the ‘islands of successes’, which are neither disseminated nor strengthened through integration, and therefore only have low impact, narrow coverage and weak sustainability (LNW).

While figure 1 illustrates the four scale-up scenarios, figure 2 uses a diamond compound as an analogy to show how the varied processes, opportunities, and actors involved in the process of scaling up are organically linked. Using AESTF as an example, it also shows the key elements to grasp in order to be able to scale up the initiative. These key elements are by no means exhaustive of the factors that influenced the process. They are meant to highlight only a few ‘dots’ among others in the package of *enabling factors for scaling-up*.

The diamond compound in figure 2 also illustrates that there are multiple pathways to scaling up. The key is to “connect the dots”. Firstly, along the pathway of scaling up, there are national-level policy trends as well as local practices. National reforms influence local practices and vice versa, local practices could feed or counter national policy trends. Their alignment would pave the way well for a local initiative to gain national prospect. The AESTF was a typical example of how local solutions designed to meet local



needs were in line with national reform trends and development priorities. It also situates well with the globalization context. Secondly, a unique feature by design in a local initiative would need to link up with reform trends, policy development and legislative evolvement. In the AESTF programme, the designed feature was the incentive to the practitioners and farmers to share the profit. This feature was at the beginning an experiment in potential policy space, but was accompanied by positive policy development along the way. Thirdly, a local innovation may start from within one sector. But scaling up would always need to connect related sectors to integrate at policy level. In this case, eight ministries and authorities joined hands in coordinating policies. This creates the enabling environment for its sustainable development.

The pathway to scaling up the AESTF is all about “connecting the dots” in a strategic manner. Such pathways may well differ in different political and economic contexts, but the enabling conditions revealed from this particular scaled-up case can be important reference for others.

### *Moving forward: Potential challenges in scaling up AESTF*

The success of the AESTF programme is a case of dedication, commitment and innovation by the government, extension workers, and farmers to enhance their standard of life. The success of programme was accomplished through a unique partnership model that simultaneously benefited both the farmers and

the AESTF practitioners, with the government playing both a subsidizing and facilitating role. For this project to be scaled up at the national level a number of considerations and associated risks should be addressed.

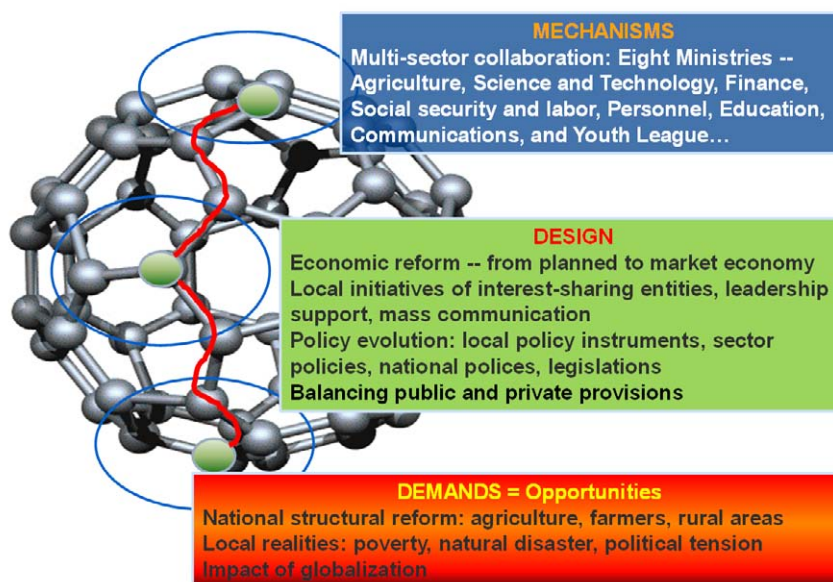
First, the role of government was of critical importance during the piloting phase when it subsidized the initiatives by paying the salaries of the practitioners while creating the policy space for their engagement in profit-sharing with their farmer clients. As the AESTF model becomes mature and more individuals are motivated to join the taskforce, the question of whether the government should continue subsidizing the programme in such a manner is being asked. A more efficient way of using the public resources could be for the government to focus on its role of a policy facilitator to encourage and guide the farmers and their associations to manage their affairs and on provision of enabling environment for the agro-businesses to grow. The envisaged impact of the AESTF scaling up will depend to a great extent on the governments’ policies, engaging private investors, and the managed strategic use of public resources.

Second, the vulnerability and exposure of small farmers to many challenges requires a risk aversion mechanism embedded in the programme to cover and support the farmers from commercial and climatic risks. The emerging concept of “index insurance” may be introduced which is a market based product that protects farmers during years of poor harvest. Under the activation of such scheme the farmers’ cooperatives would be able to receive a payout for their bad/poor harvest that would help them reengage

into productive activities. This initiative may also incentivize the private sector to invest in the AESTF project. Likewise easy access to finance for farmers especially small farmers is another important factor for the success of the project. The public sector subsidy would initially serve to achieve commercial variability of these projects; however, in the long run the financing backbone has to be shifted onto the private sector. The involvement of private financial institutions in the project will improve the flow of financial resources to small local projects. For an effective and efficient running of the programme, subsidies cannot be maintained as a life-line for too long rather a systematic approach to incentivize commercial financial institutions would be a rational move in right direction.

The size of the Chinese rural economy and scope of AESTF makes it a specifically designed initiative

**Figure 2: Scale-up pathways by “connecting the dots”**



to target mass population. Limited scale projects are relatively easier to manage and often achieve objectives, however, large scale projects needs strategic vision and planning, qualified human resources, and solid systematic monitoring & evaluation mechanism in place. The monitoring and evaluation mechanism is critical to identify problems along the way and help the AESTF initiative to adjust itself during its further scale up nationwide.

## Prospects for South-South Cooperation

The international Assessment of the MDG achievements conducted by UNDP in 2010 points out that UNDP should promote production increases and food security by supporting agriculture through farm input provision (fertilizers, credit, improved seeds and water management), facilitate structural

change by expanding non-agricultural private sector activities and promote public investment in infrastructure, transfer and diffusion of technology (UNDP, 2010).

It is expected that the findings of the case study will be of reference to UNDP development practitioners, our partners, and policy makers, who seek to disseminate knowledge from local and small-scale innovations, introducing policy reforms, and contributing to transformational development changes in rural and agricultural development.

This case study is also important for informing South-South cooperation initiatives that promote solution and knowledge exchanges in agricultural extension services. In context of strengthening its cooperation with China to boost poverty

**Table 1. South-South learning elements**

	<b>Ethiopia</b>	<b>Chiina</b>
Each has home-grown past experience of up scaling extension programmes	The Participatory Demonstration and Training Extension System (PADETES) was introduced in 1994 to 1995 following a demonstration programme led by Sasakawa Global 2000. Over a 10-year period, PADETES reached about 40 percent of the roughly 10 million farm households in Ethiopia.	During the early 1980s, an integrated grassroots extension system, through County Agriculture Extension Centres (CAEC) and Township Extension Stations was pilot tested in 29 counties. The model later on was expanded throughout the country during the 1990s. Till today, all the counties in China have adopted the CAEC model.
Similar goal	Build a market-oriented model to complement public provision of extension services.	Construct a sustainable and inclusive pluralist extension system.
Innovative practices to exchange	Staff of Office of Agriculture facilitate producers linking with local food factories, exporters or potential buyers; Farmer training centres demonstrate entrepreneurship.	Profit-sharing partnerships between extension workers, company, farmers cooperatives, and farming households (AESTF).
Different coverage	Innovative market-oriented practices in some localities.	AESTF scaled up nationally.
Need to improve targeting	Missing-out small holders.	Small-holders organized through farmer associations and cooperatives.
Different level of institutionalization	Currently, extension is provided primarily by the public sector. No systematic government promotion of the market-oriented practices yet.	National promotion and multi-ministry coordinated policy framework for AESTF.
Similarity in policy environment	Extension is a high priority for the government. Extension is implemented at the woreda (district) level.	AESTF is in line with the long-term development strategy of the nation. Extension is managed in a decentralized manner.

Possible South-South learning elements:

- give extensions agents, together with farmers, more space to experiment on technology advancement, sustainable partnership, and business models.
- make consistent and coordinated policies based on evidence of local practices and experiments; and
- enable extension agents to play a key role in facilitating government-financed credit to small farmers;

reduction efforts in other developing countries, UNDP is working with China and other countries in Asia and Africa to promote exchange of experiences in sustainable extension services.

Since 1960, among the Chinese agricultural aid projects in 44 African countries, 20 percent of China's turn-key projects have involved agriculture (Brautigam 2009). As part of the 2006 Forum on China-Africa Cooperation (FOCAC) action plan, 104 senior agricultural experts have already been sent to 33 African countries. Between 2006 and 2009, China established 14 agricultural technology demonstration centres in Africa (Brautigam and Li 2009). While this will boost Chinese companies' investment in Africa, it will also couple with the effect of influencing the on-going reform of agriculture extension systems in African countries. In this regard China and African countries have a lot to learn from each other.

Although it is important to bear in mind that the enabling conditions of the scaling up of the AESTF programme in China are rooted in the country's political economical context, one can also consider how elements of such a practice can be transferrable to other country contexts. Table 1 compares the issues and solutions attempted in Ethiopia and China on agriculture extension reforms as an example to reflect on possible South-South learning elements to address common challenges. This table does not mean to exhaust all aspects of the comparison, but only to highlight some elements to exchange.

Many developing countries face common challenges in constructing a pluralist extension system. These include top-down and non-participatory approaches, supply-driven modalities, low capacity, low morale and high turn-over of practitioners, shortage of funding and facilities, leaving out small holder farmers, etc. These were also faced by China before the introduction of the AESTF initiative. While various innovations were attempted in countries to reform the traditional extension systems, complementing public provision by providing market-orientation and incentives is the key to ensure an effective, sustainable and scalable approach. In this regard, AESTF initiative and its up-scaling process can offer valuable lessons and experiences to the developing world.

## References:

- Ajieh, P.C., Agwu, A.E., and Anyanwu, A.C., (2008). Constraints to privatization and commercialization of agricultural extension services as perceived by extension professionals and farmers, *African Journal of Agricultural Research* Vol. 3 (5), pp. 343-347, May.
- Bardhan, Pranab, K., (2010). *Awakening Giants, Feet of Clay: Assessing the Economic Rise of China and India*, Princeton University Press.
- Binswanger-Mkhize, H.P., de Regt, J.P., and Spector, S., (2009). *Scaling Up Local and Community Driven Development: A Real World Guide to Its Theory and Practice*. February, World Bank.
- Consultative Group on International Agricultural Research, (2000). *Going to Scale: Can We Bring More Benefits to More People More Quickly?* Philippines.
- Gebremedhin, B., Hoekstra, D., and Tegegne, A., (2006). *Commercialization of Ethiopian agriculture: Extension service from input supplier to knowledge broker and facilitator*, IPMS (Improving Productivity and Market Success) of Ethiopian farmers project, ILRI (International Livestock Research Institute), Nairobi, Working Paper No. 1.
- Hartmann, A., and Linn, J. F., (2008). 'Scaling Up: A Framework and Lessons for Development Effectiveness from Literature and Practice.' *Global Economy & Development*, Working Paper 5.
- Lin, Y., (1989). 'Rural Reforms and Agricultural Productivity Growth in China', UCLA Working Paper No. 576.
- Linn, J. F., et al, (2010). 'Scaling Up the Fight Against Rural Poverty: An Institutional Review of IFAD's Approach.' *Global Economy & Development*, Working Paper 43.
- Nie, C., Swanson, B.E., and Feng, Y., (2002). 'Financing of Extension: Lessons from China,' *Extension and Rural Development Workshop*, Washington, DC: The World Bank,.
- Pachico, D. and Fujisaka, S., eds. (2004) 'Scaling Up and Out: Achieving Widespread Impact through Agricultural Research.' Colombia: International Center for Tropical Agriculture.
- Rivera, W.M., Qamar, M.K. and Crowder, L.V., (2001). *Agricultural and Rural Extension Worldwide: Options for Institutional Reform in the Developing Countries*, Food and Agriculture Organization (FAO).
- Swanson, B. E., (2008). 'Changing paradigms in agricultural extension', Lead paper, International Seminar on Strategies for Improving Livelihood Security of Rural Poor, September 24–27, Goa, India.

- Swanson, B. E., (2007). 'Developing a market-driven extension system to increase farm income and employment: Lessons learned from China, India, Egypt and the United States.' In Proceedings of the 18th European Seminar on Extension Education, Prague, Czech Republic.
- Swanson, B. E., (2006a). 'The changing role of agricultural extension in a global economy.' *Journal of International Agricultural and Extension Education* 13 (3): 5–18.
- Swanson, B. E., (2006b). 'Extension strategies for poverty alleviation: Lessons from China and India.' *Journal of Agricultural Education and Extension* 12(4): 285 – 299.
- United Nations, Department of Economic and Social Affairs, Population Division, (2009). *World Population Prospects: The 2008 Revision, Highlights*, Working Paper No. ESA/P/WP/210.
- United Nations Development Programme (UNDP) and Government of the People's Republic of China, (2006). *Project Document: Promoting Innovative and Sustainable Science and Technology Support to Poverty Reduction in Rural China*. Beijing.
- UNDP, (2010). *Evaluation of UNDP Contribution to Strengthening National Capacities*, UNDP, New York.
- Uvin, P., (1995). 'Fighting Hunger at the Grassroots: Paths to Scaling Up.' *World Development* 23.6, .
- Uvin, P., Jain, P. S. and Brown, L. D., (2000). 'Think Large and Act Small: Toward a New Paradigm for NGO Scaling Up.' *World Development* 28.8.
- Xia, Jingyuan, (2009). 'Reflection and Prospect of the 30 years' agriculture extension reform in China,' *China Agriculture Extension Journal* 25 (1): 4-14.
- Zhao, Y., Wang, H., Ma, Y., and Lin, X., (2004). *Green Box Support Measures Under the WTO Agreement on Agriculture and Chinese Agricultural Sustainable Development*, Chinese Academy of International Trade and Economic Cooperation.

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