



Training - Infrastructure - Finance (TIF) Strategy

for Industrial Development in Sub-Saharan Africa

**A Report of the Research Group on Strategic Support
for Industrial Development in Sub-Saharan Africa (SSA)
Facilitated by JICA Research Institute**

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Executive Summary

1. Background

We fully support the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs) declared by the United Nations, which provide critically important development objectives—notably reducing and eradicating poverty—to be achieved by the international societies. In order to achieve such goals, it is imperative to create decent employment opportunities for the poor. Indeed, it is the development of labor-intensive manufacturing industries that provides ample job opportunities for women, youth, and other vulnerable groups, thereby making it possible to achieve inclusive growth in developing countries.

However, there is no universally accepted effective strategy to develop industries. Therefore, in this article we propose new policies to promote industrial development. We contend that the key to achieving industrial development is to design effective development strategy with a special emphasis on the investment in human capital in general, and managerial human capital in particular. Japan is uniquely suited for this task because it has ample experience supporting the miraculous development of East Asian countries. Thus, we attempt to propose a strategy to support industrial development in Sub-Saharan Africa (SSA), which is now eager to achieve industrial development, based on Japan's experience in East Asia as well as emerging insights generated by development economists and numerous findings from our own field studies in SSA.

2. A Proposal

There are industrial clusters in most countries in SSA that are most often characterized by the geographical concentration of micro, small, and medium-sized enterprises in a small area, even though they are not supported by the government. Examples are garment, leather shoe, weaving, metal processing, furniture, and food processing industries. Their development is spontaneous and obviously market-led. This strongly indicates that developing countries in SSA potentially have a comparative advantage in such clustered industries, even though they are mostly stagnant at present. Identifying such industrial clusters is a prerequisite for industrial development before implementing our recommended development strategy. It is also important to note that these

industries are highly labor intensive and, hence, appropriate for SSA, which is endowed with an abundance of unskilled labor.

We consider the following three major policy instruments: (1) investment in human capital in general and managerial human capital of entrepreneurs (owners and manager of enterprises) in particular; (2) investment in infrastructure, particularly the establishment of industrial parks or zones; and (3) financial support for competent entrepreneurs. We also recognize that the attraction of foreign direct investment (FDI) should be an integral part of long-term development strategy, as foreign enterprises provide not only capital but also advanced technology and management know-how. The central question is: given the limited budget and human resources for industrial development, how shall we combine these policy instruments for successful industrial development? To be specific, we would like to offer the following three intimately related components of the development strategy: sequential support, linkage with FDI, and continued investment in human capital.

Sequential Support

We recommend that official development assistance (ODA) for industrial development, as well as industrial policies in developing countries, should follow the sequence of support measures beginning with training of entrepreneurs followed by infrastructure investment and financial support. It is obvious that industry will not develop without competent entrepreneurs, even if we invest in infrastructure and provide financial support. Entrepreneur training is known to be effective not only in nurturing entrepreneurship but also making it possible to identify promising and non-promising entrepreneurs. Thus, targeted support for competent and promising entrepreneurs becomes possible following the training. This is why we argue that the first step for the support of industrial development is to invest in human capital of entrepreneurs, who are the major decision-makers. Specifically, we recommend the training of the Japanese-style Kaizen management, which is designed to facilitate coordination of the division of labor between managers and workers, between production divisions, and between workers. The total quality control achieved through joint participation of managers and many workers is just one of many successful examples of Kaizen management activities. To date, many studies have found that Kaizen management training has a significant impact on management practices and enterprise performance in developing countries.

As is well-known, investment in human resources tends to be socially suboptimal because of the financial constraints as well as positive spillover benefits. Furthermore, recent studies find that entrepreneurs in developing countries under-estimate the value of management and technological training. Thus, there are clear justifications for such training offered by the public sectors and donor agencies.

Promising entrepreneurs, who have acquired through training new useful technological and managerial knowledge, would likely introduce new ideas, which may not be labeled “innovations” but “important improvements,” and expand their businesses, including the establishment of new factories in industrial parks. Since industrial parks are equipped with public goods, including utilities and transportation and communication facilities, it is the role of government or donor agencies to construct them. While commercial banks will provide funds to expand current operations of innovative entrepreneurs, they may not support the huge investments required to build new factories and install new machinery and equipment in industrial parks. Thus, financial support for such investment by the public sector and aid agencies is likely to be indispensable, given the underdevelopment of financial sectors in many developing countries.

Thus, we propose sequential support for training, infrastructure, and finance (or TIF in short). We are not, of course, arguing that no infrastructure investment should ever be made until training of entrepreneurs is completed. The point is that the rate of return to investment in infrastructure tends to be higher when the ability of potentially promising entrepreneurs has been enhanced. In other words, the proposed sequence is logical, and in practice the steps may overlap rather than being completed one at a time. This point should be articulated to policymakers in developing countries, since the idea of starting with the investment in the human capital of entrepreneurs is novel. The identification of promising entrepreneurs, who should receive favorable locations in industrial parks is also important. For this purpose, the training of entrepreneurs is useful because competent entrepreneurs who have received the training can be identified through the changes they make in their management policies. Similarly, effectively targeted financial support is possible if promising entrepreneurs can be identified after the training. Therefore, the training of entrepreneurs must be an entry point to industrial development. There is supportive evidence that shows high returns to investment in the training of entrepreneurs even without any other policy supports.

Linkage with FDI

FDI has been increasing much faster than ODA and, as a result, the former exceeds the latter by a wide margin. Since FDI brings not only capital but also advanced technological and managerial knowledge to developing countries, it can potentially have more profound impacts on the development of industries in developing countries than ODA. This does not imply, however, that ODA is unimportant.

On the contrary, ODA must play the role of vanguard in attracting FDI. Multinational enterprises (MNEs) would not invest in developing countries without fully equipped industrial parks and certain development of supporting industries, such as machinery and metal-processing industries that can maintain and repair machinery

installed by MNEs and supply simple parts and components. MNEs would also hesitate to invest in countries where disciplined industrial workers are not available. All these arguments strongly suggest that ODA can play a critical role in attracting FDI by creating favorable production environments through the training of entrepreneurs, investment in industrial parks, and provision of financial support.

We would like to argue that from the beginning, the TIF strategy should aim at attracting FDI. For this purpose, it makes sense to invite MNEs interested in FDI in the future to participate in designing and supporting the training of entrepreneurs, because it is MNEs that are knowledgeable about the types of entrepreneurship abilities required for industrial development in developing countries. For effective training at this stage, it is critically important to generate a new cohort of highly competent management consultants in SSA.

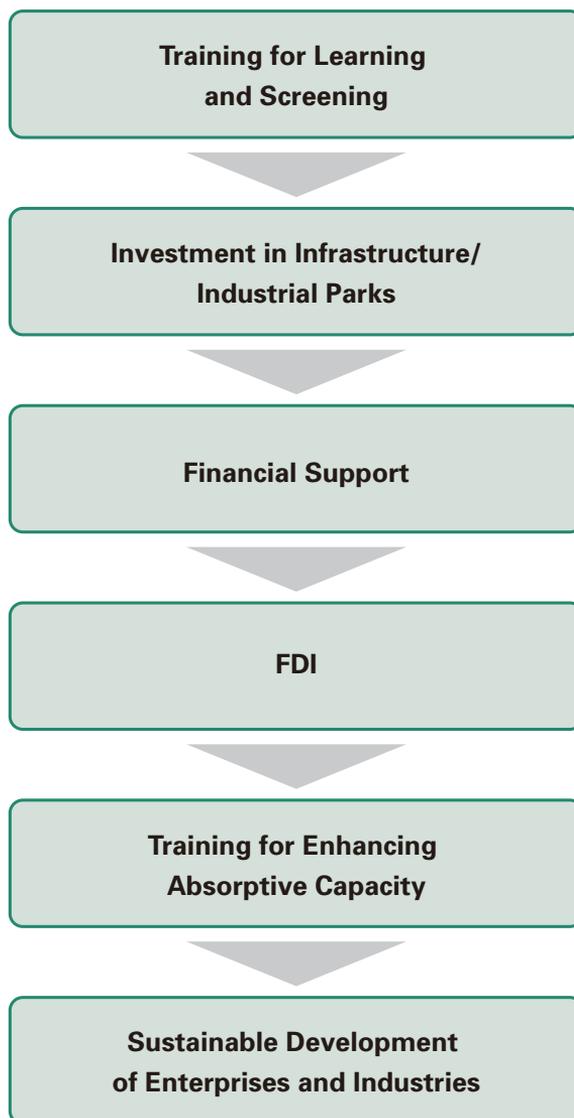
Need for Continuous Human Capital Investment

It is a mistake to assume that once FDI is made, domestic enterprises automatically learn advanced technologies and management methods and, consequently, develop rapidly. The reality is that affiliates of MNEs make every effort not to disclose their technologies and management knowledge to rival companies. In fact, it is a common observation that horizontal spillovers, i.e., non-market knowledge transfers from MNEs to domestic enterprises in the same industry, are largely absent. The major beneficiaries from MNEs are domestic enterprises in upstream industries, which provide parts and components to foreign affiliates. Typically, such enterprises are subcontractors, who receive orders from foreign affiliates with materials and production instructions. In order to secure cheap and high-quality parts, foreign affiliates have incentives to provide production training for entrepreneurs and workers in such domestic enterprises.

Those domestic enterprises are subordinate to foreign companies, as long as they are not engaged in marketing research, technology choice, the procurement of inputs, production design, or marketing including branding. These non-production activities are known to be core competencies of MNEs, and are a major source of profit. Thus, affiliates of MNEs do not have incentives to disseminate knowledge of pre- and post-production activities to competing domestic enterprises. In other words, domestic enterprises cannot improve profitability and productivity dramatically unless they somehow acquire knowledge and abilities to carry out pre- and post-production activities. This explains the further need for investment in human capital of entrepreneurs, particularly capacity to absorb advanced technologies and management knowledge from foreign affiliates, supported by the public sector and aid agencies. In all likelihood, such acquisition of new knowledge will lead to “innovations” or major changes in the efficiency and profitability of enterprise performance.

Figure 1 summarizes the logical steps of the TIF strategy supplemented by FDI and advanced training and investment in human capital, which is expected to lead to sustained industrial development. While the “training” is placed in the beginning and at the end in this figure, it’s important to note that since training takes time, it is likely to be more appropriate to continue training of entrepreneurs and human capital investment throughout the industrial development process.

Figure 1. A Recommended Logical Sequence of Industrial Development Policies



3. A Plea for Concerted Efforts

Concerted efforts of practitioners, MNEs, and economists are needed to design an effective TIF approach in practice. Due considerations must be given to the unique features of SSA, which can be significantly different from those of Asian countries. Furthermore, success or failure in each step of the TIF approach, including investment in infrastructure and financial support for competent entrepreneurs, hinges on the development of both managerial and technical human resources capable of effective operation and maintenance. In fact, the Japanese ODA has been especially successful when it has executed appropriate human resource development projects during each step. If concerted efforts are made successfully, we are wholly confident that the TIF strategy will be conducive to industrial development in SSA, because our proposal is based on Japan's ample experience in assisting with industrial development in East Asian countries and the findings of empirical studies on industrial development conducted in SSA and other developing countries.

I. Introduction

Eradication of poverty in the world is one of the main goals of the international society. Indeed, included among the United Nation's MDGs was the goal to cut the poverty ratio in half from 1995 to 2015. Some of the eight development goals, including halving poverty, were achieved, but some other goals were not. Hence, the SDGs were announced in 2016, with 17 goals and 169 targets with an unchanged or even increasing emphasis on reducing the incidence of poverty. Although we fully support the idea of setting up such goals, they are not very useful unless we find strategies to achieve them. Yet, to the best of our knowledge, there has been little discussion about effective development strategies to achieve the MDGs and the SDGs. Thus, there is no universally accepted effective strategy to develop industries.¹

In order to reduce poverty, build peace in conflict-affected countries, and rehabilitate the devastated economy in disaster areas, it is imperative to create decent employment opportunities for the poor and the vulnerable by developing labor-intensive manufacturing industries. Furthermore, the creation of factory jobs for women tends to improve women's economic and social status (Heath and Mobarak 2015). Thus, the development of industries ought to be a central theme of development issues.² The sole purpose of this proposal is to specify an effective strategy to develop industries for poverty reduction and inclusive income growth in SSA.

Japan is uniquely suited for the task of formulating an effective strategy for industrial development because it has been assisting in the miraculous industrial development in East Asian countries. Thus, this proposal heavily depends on the Japan's experience in assisting East Asian countries in the last several decades as well as insights generated by recent empirical studies of industrial development including our own research in Asia and SSA (Sonobe and Otsuka 2006, 2011, 2014). We are hoping that this proposal contributes to the establishment of "public goods" useful for the development of manufacturing industries in many countries in SSA.

More specifically, we propose a logical sequence of support measures beginning

¹ For example, World Bank (2012) discusses the importance of creating productive jobs, but not a strategy to do so.

² Needless to say, the development of agriculture is also a critical development issue in SSA (Otsuka and Larson 2013, 2016; Otsuka et al. 2016). Agriculture, however, does not offer ample employment opportunities for the poor (David and Otsuka 1994; Otsuka et al. 2009; Estudillo and Otsuka 2016), so the development of the nonfarm sector is indispensable for inclusive economic development.

with training of entrepreneurs followed by investment in infrastructure and financial support, with the aim of attracting foreign direct investment (FDI) and facilitating learning from FDI. We call our strategy—consisting of training, infrastructure investment, and financial supports—TIF. The rate of return to investment in infrastructure, including industrial parks, will be low, if there are few promising entrepreneurs. Thus, investment in human capital of entrepreneurs should precede investment in infrastructure. While we do not argue that training workers is unimportant, we believe that the training of entrepreneurs, who are major decision makers, has often been neglected in the past. We also do not argue that the proposed sequences must always be followed strictly in a step-by-step way over time. In practice, training, investment in infrastructure, and financial support may be carried out simultaneously. In other words, the proposed sequence is logical, but not intended to be strictly followed as discrete steps. The point we would like to emphasize is that the rate of return to investment in infrastructure tends to be high when the ability of potentially promising entrepreneurs has been enhanced.

Training of entrepreneurs is useful not only for improving the ability of entrepreneurs but also for identifying promising and non-promising entrepreneurs. Thus, targeted support for admitting promising enterprises to industrial parks and providing financial support to them becomes feasible after the training of entrepreneurs.

More fundamentally, we advocate this approach because (1) adequate training of entrepreneurs and investments in infrastructure are not amenable to market mechanisms, (2) considering the underdevelopment of financial sectors in developing economies, there is a room for the government and aid agencies to provide financial support, and (3) the TIF approach is likely to play the role of vanguard in attracting FDI by establishing a favorable production climate for FDI. We must note, however, that FDI does not immediately lead to the development of industries in developing countries because foreign enterprises have incentives to protect production and management know-how from competing enterprises. In order to facilitate learning from FDI, further investments in human capital of entrepreneurs as well as workers are required so as to enhance the absorptive capacity of the local enterprises.

Our proposal must be compatible with self-help efforts of developing countries interested in industrial development. We are willing to discuss our recommended strategy with policymakers in SSA for deepening the understanding of the thrust of our proposal.

The rest of our proposal is structured as follows. In Section II we review the emerging literature on industrial policies in SSA, and explain why our approach, which emphasizes investment in human capital, is recommended. We discuss why the sequence of policy measures is expected to be effective for industrial development in Section III. Section IV concludes this proposal by recapitulating the essence of our proposal.

II. What Is Missing in SSA?

Lin (2014) argues that to be successful industrial development must follow the comparative advantage of the economy, whereas Chang (Lin and Chang 2009) argues that developing countries should adopt proactive industrial policy which takes into account a dynamically changing comparative advantage. We fully agree with their arguments that the industrial policy should support the development of industries which have and will have comparative advantages. However, it is not clear how to identify such industries or whether the government can find them without major failures (Kruger 2011). Yet, in principle, we advocate the development of labor-intensive industries in SSA, where cheap labor is abundantly available.

Lin appears to assume implicitly that there are no spontaneously developed industries in SSA, suggesting that promising industries are missing in SSA. According to our own and others' researches in SSA (Sonobe and Otsuka 2011; Higuchi et al. 2016; Mano et al. 2012; Oyeyinka and McCormick 2007), however, there are a large number of informal industrial clusters in SSA. They have spontaneously formed and, hence, are obviously market-led. Many of them are slowly developing but the fact is that such industrial clusters have emerged without any support by the government. This implies that these clustered industries have clear comparative advantages. We argue that we should support the development of such clustered industries, which have the potential to grow and become formal sectors. Our argument is in line with the finding of Hidalgo et al. (2007) that industrial development entails continuous processes of upgrading the quality of products and production processes and developing slightly new products, rather than the sudden emergence of new industries.

Without any doubt, a major source of industrial development is technological progress, whose major source is learning useful knowledge from abroad, particularly in developing countries. Since acquired useful knowledge spills over, the private benefit of knowledge acquisition is exceeded by the social benefit, which results in inadequate learning and "missing knowledge." Thus, Noman and Stiglitz (2015, 2016) recommend that the government in developing countries should play the role of catalyst in facilitating learning useful knowledge from abroad. We agree with their arguments and extend them by arguing that critically "missing" knowledge is that of the efficient management of enterprises, based on our own empirical research in SSA (Sonobe and Otsuka 2011, 2014). The acquisition of such missing knowledge will promote the structural change of Africa from a lower productivity sector to higher productivity sector

(Page 2015; Page and Tarp 2017; Newman et al. 2015, 2016).

It is true that not only management knowledge but also a trained workforce, infrastructure, and efficient credit markets are missing in most developing countries. There is no question that such missing factors are constraints on growth. Thus, it appears useful to remove major constraints, as is argued by Hausmann, Rodrick, and Velasco (2008). We must recognize, however, that if we remove one constraint, other constraints appear, so that we have to anticipate changes in major constraints when we formulate an effective industrial policy. For example, the lack of infrastructure may not be a major constraint when there is no growing firm. It becomes a major constraint, however, when a number of trained entrepreneurs plan to expand their operations. According to our research, training of entrepreneurs has high pay-offs even without investing in infrastructure and providing cheap credit, because trained entrepreneurs use the existing resources more efficiently (Sonobe and Otsuka 2011, 2014; Higuchi et al. 2016; Mano et al. 2012). Subsequently, those entrepreneurs who wish to expand their businesses face such constraints as congestion, the lack of spacious industrial parks, and credit for constructing new factories. That is why we argue for the logically right sequence of investing in entrepreneurial talents, infrastructure, and credit system is the key to the successful industrial development.

III. Major Components of Strategic Support

Although we advocate a logically sequential support for industrial development from training of entrepreneurs to infrastructure investments and financial support, we do not argue that investment in infrastructure or financial support should be delayed until the training of entrepreneurs is completed. Our proposed sequence is sequential but may overlap or may even be reversed over time. Thus, training, infrastructure investment, and financial support may be made in parallel or additional training may be required after investments in infrastructure are made because an inadequate supply of entrepreneurial talent is later found to be a major bottleneck on further development. The important point is that the training of entrepreneurs confers substantial benefits even without improving infrastructure and providing financial support (Mano et al. 2012; Sonobe and Otsuka 2014; Suzuki et al. 2014; Higuchi et al. 2015, 2016). Furthermore, we expect that such training will enhance payoffs to investment in infrastructure and provision of financial support by enhancing the ability of entrepreneurs and making it possible to identify promising and non-promising entrepreneurs. Thus, the training of entrepreneurs ought to be an effective entry point to industrial development.

Competent entrepreneurs, who take the training program, will likely want to apply newly learned management policies and adopt progressive management plans, e.g., employing more workers, installing more machines, and moving to industrial parks to construct new larger factories. It then becomes possible to offer targeted support for them by providing the space in industrial parks and financial support for the construction of new factories. Thus, the TIF approach relies on complementarity between training and investment in infrastructure as well as financial support.

Furthermore, the TIF approach is useful to lay foundations for attracting FDI. In fact, FDI is attractive to developing countries where industrial parks are set up and supporting industries have developed. Considering that the amount of FDI is nine times as large as ODA as of 2014,³ and that foreign firms bring about improved technologies and management practices, it is of utmost importance to attract FDI. Anticipating FDI in the future, it is highly desirable to let MNEs participate in the design and implementation of the training program for entrepreneurs from the beginning.

It is a mistake to assume that once FDI is made, domestic enterprises

³ FDI amounted to US\$136 billion, whereas ODA amounted to US\$16 billion in 2014 (<https://www.jetro.go.jp/world/japan/stats/fdi.html>, <http://www.mofa.go.jp/mofaj/gaiko/oda/files/000137908.pdf>).

automatically learn advanced technologies and management methods. It is commonly observed that horizontal knowledge spillovers from MNEs to domestic enterprises in the same industry are limited. The major beneficiaries from MNEs are domestic enterprises in upstream industries, which provide parts and components to foreign affiliates. Typically such enterprises are subcontractors, who receive orders from foreign affiliates as well as materials and production instructions. In order to secure cheap and high-quality parts, foreign affiliates have incentives to provide production training for entrepreneurs and workers in such domestic enterprises. But if these domestic enterprises passively receive orders and produce parts and components without undertaking market research, technology choice, procurement of materials, production designs, and marketing, they are unlikely to make sizable profits or grow. Such pre- and post-production activities are known to be core competencies of leading MNEs and a major source of profits (Humphrey and Schmitz 2002). In other words, in order to stimulate the development of domestic enterprises further, advanced management training becomes critically important after FDI is made. Thus, the TIF approach aims to attract FDI and to strengthen the absorptive capacity and management abilities of domestic enterprises.

III-1. Human Capital Investment

A variety of human resources with different skills, knowledge, and talents are required for economic development. For example, distribution systems must develop with economic development to transport goods from one place to another, and hence there must be competent staff capable of managing ports, airports, transportation and communication systems, and storage and distribution centers. This illustrates how important it is to invest in human resources for economic development. We believe that particularly scarce but critically important human resources in developing countries are competent managers and owners of enterprises, whom we refer to as entrepreneurs (Bruhn et al. 2010). They are major decision makers and must play the role of innovators.

To be innovative, entrepreneurs must invest in their human capital. A lot of time, effort, and resources are needed for such investments. However, they cannot know in advance the quality of trainers, instructors, and teachers from whom they will learn and, hence, returns to human capital investments are uncertain. Moreover, employers may not be interested in investing in hired managers who have the potential to become capable entrepreneurs, because they may quit the current job in the future.⁴ Therefore,

⁴ The story about the training of 130 newly-recruited employees for garment production in Bangladesh by the Daewoo Corporation of Korea is well-known (Mottaleb and Sonobe 2011). Within two years after eight-months of training in Korea, almost all of them left to start their own garment businesses.

we cannot assume that market forces lead to adequate investment in the entrepreneurial human capital. Governments in developing countries should guarantee the quality of trainers and support the training of entrepreneurs. If the government is not prepared to play such a role, donor agencies and international organizations should assist in the investment in the entrepreneurial human capital.

A useful lesson may be learned from the successful experience of Thailand's Eastern Seaboard Development Plan (1982-95). This was a regional development plan based on the construction of harbors, highways, and industrial parks with aims of reducing congestion in Bangkok due to successful industrialization and utilizing natural gas deposit discovered in Gulf of Thailand. The Japanese government supported of designing a development plan, provided loans, and assisted with FDI of Japanese companies in industrial parks. Furthermore, Japan invested in human capital of managers of infrastructures and employees of Japanese companies, particularly engineers and middle-level managers. As a result, huge industrial clusters of automobile production have been built with a large number of local enterprises and ample employment opportunities. According to ex-post assessment of the plan (Ariga and Ejima 2000), 30 thousand new jobs were created in Laem Chabang City, which is located in the middle of the plan, and more than 10 thousand new jobs were created in Map Tha Phut Industrial Estate in the 1990s when the plan was completed. This success was attributed to the coordination of investments in human capital, infrastructure, and factory buildings and other physical capital. Also noteworthy is the dissemination of Kaizen management, which emphasizes the participatory approach of workers to production management and quality control.

The quality of management has increasingly received the attention of development economists as a major factor affecting the performance of enterprises in developing countries, because it is found that firms in lower-income countries are significantly more likely to suffer from poor management than their counterparts in high-income countries (Bloom et al. 2016). Thus, it is recommended that aid agencies and international organizations assist governments in developing countries in institutional building toward the goal of spreading good management practices. Indeed, there have been a number of such projects and programs. The World Bank and International Labor Organization nurtured a number of trainers who can provide business development services and master trainers who can train trainers in a large number of developing countries. There have also been assistances directly given to local firms, not through the government, such as the provision of training programs for entrepreneurs under the names of women entrepreneur programs and MSE (micro and small enterprise) training programs. Micro finance institutions have also provided business development services for their potential clients.

In recent years, there has been a considerable increase in interest among development economists in assessing the impacts of these kind of management training

programs on the trained enterprises by using randomized controlled trials (RCTs). Almost all such studies find that training has favorable effects on management practices, and several studies also find that training improved business performance measured in sales revenue, profits, productivity, etc. Nonetheless, such assistance programs and projects, to our knowledge, have not led to notable industrial development in the sense that a number of training participants have grown into large firms, thereby creating a large number of jobs, not to mention industrial development comparable to the Eastern Seaboard in Thailand. Presumably, the reason is that these assistances are intended to help those who start small or self-employed business and those who want to sustain their businesses. Few assistances are intended to help those who have been successful and are interested in substantially expanding their businesses by employing a large number of workers. Instead, they focused on financial literacy, how to make a business plan, elementary marketing, and entrepreneurship. Knowledge of these items is useful for any size of businesses, but it does not help entrepreneurs solve those problems that they would face when increasing the number of their employees. It is especially difficult to nurture an efficient work force with workers who are not educated, not accustomed to work as part of a team, or who do not aspire to acquire new skills. In industrial clusters or cities in developed countries in which a number of medium and large enterprises are located, small business owners can easily invite a former manager of a larger firm to teach them how to cope with the problems that arise from the expansion of operation and employment size. For the majority of entrepreneurs in low-income countries, however, such experienced advisors are unavailable and, hence, it is difficult for them to learn how to manage larger enterprises.

Potentially, low-income countries in SSA have a comparative advantage in labor-intensive industries due to the abundance of those who cannot earn high incomes and would accept the offer of low-wage jobs. Actually, however, such a potential advantage has not been realized because it is difficult to turn these people into efficient workers who supply effective labor at a low wage. For a low-income country to achieve industrial development on a large scale, the potential comparative advantage in labor-intensive industries must be actualized. It is true that the development of labor-intensive industries is not indispensable for high growth. It may be easy to raise the economic growth rate by making the country a focal point of outsourcing of call center services, data entry services, and other back office services from developed countries. As experienced already by India and the Philippines, however, this type of economic growth may end up with jobless growth that offer jobs to college graduates, but not to the less educated mass.

To achieve economic growth with equity, low-income countries ought to seek the development of labor-intensive industries, which in turn necessitate the dissemination of management practices and skills that allow firms to employ a large number of employees and turn them into effective labor force. Fortunately, there is an

inexpensive, human friendly approach to such management. It is called Kaizen. According to the Oxford Dictionary of English, it is “a Japanese business philosophy of continuous improvement of working practices, personal efficiency, etc.” It is not just philosophical but also scientific, in the sense that it has been developed through observations and experiments by a number of firms.

Kaizen management is designed to facilitate coordination of the division of labor between managers and workers, between production divisions, and between workers. The total quality control achieved through joint participation of managers and workers is just one of many successful examples of Kaizen management activities. Indeed, RCT (randomized controlled trial) of Kaizen management for medium-size enterprises in the textile industry in India found a significant impact of Kaizen management training on management practices and enterprise performance (Bloom et al. 2013). Similar RCT in the garment industry in Vietnam also found a significant impact of Kaizen management training on management practices and performance (Suzuki et al. 2014).

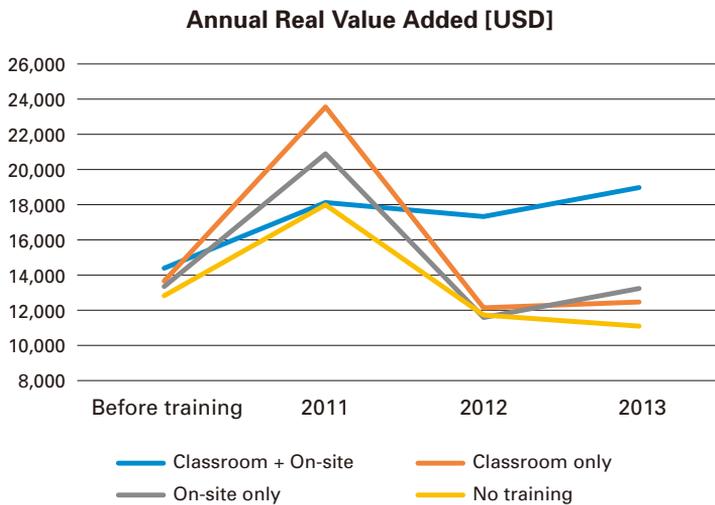
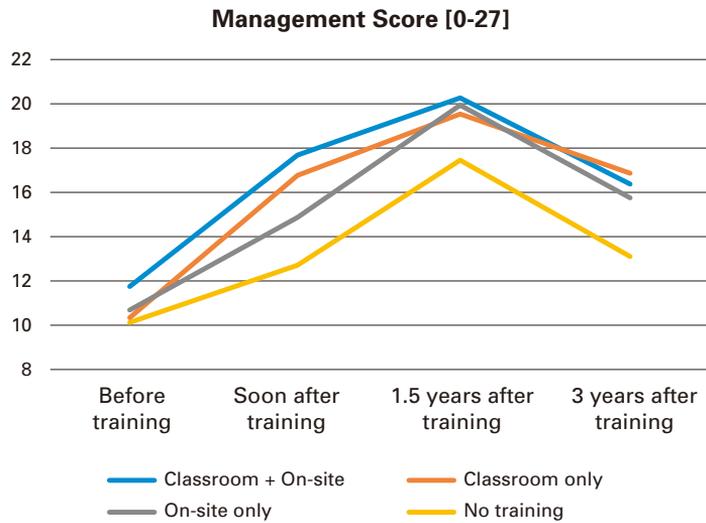
SSA has in general a comparative advantage in labor-intensive industries such as the textile, garment, leather shoe, and simple metal-processing industries, where Kaizen management training is found to have profound impacts on management practices and enterprise performance (Mano et al. 2012; Higuchi et al. 2015). Yet, the fact that many of these industries failed to develop strongly indicates the severe lack of managerial human capital in this continent, capable of managing a number of workers in a participatory fashion (Sonobe and Otsuka 2014).

Figure 2 shows the results of RCT in the garment industry in Tanzania by Higuchi et al. (2016), where not only classroom lectures but also on-site training by instructors was offered. It is clear that improved management practices, measured by a management score,⁵ were increasingly adopted more or less equally for a while after the training by the groups receiving both classroom and on-site training, only classroom training, and only on-site training. The control group receiving no training also adopted some improved management practices due to imitation. The management score, however, began declining 1.5 years after the training, presumably because the trainees sorted out irrelevant practices. A major finding is that only the group receiving both classroom and on-site training continued to increase value added, which indicates that the combination of conceptual training in the classroom and practical training on site leads to sustainable growth of enterprises.

The finding of RCT that Kaizen management training improves enterprise performance by improving management practices, even without improving infrastructure and providing subsidized credit, strongly indicates that the Kaizen management training is an effective first step for industrial development. Thus, it seems clear that it is

⁵ This is measured by the number of improved management practices out of 27 recommended ones.

Figure 2. Results of RCT of Kaizen Management Training in Tanzania in Terms of the Adoption of Number of Improved Management Practices and Value Added



desirable to train a number of specialists of Kaizen management and offer a number of Kaizen management training courses, thereby increasing the number of competent entrepreneurs. This is what has been happening in Ethiopia, where the government established the Ethiopian Kaizen Institute, where Japanese Kaizen experts have been sent to train selected Ethiopians about Kaizen management, who will later be dispatched to factories and training centers (Sonobe, Jin, and Otsuka 2017).

If competent entrepreneurs are nurtured by the management training, many enterprises will develop, which will lead to congestion in the existing industrial clusters as well as in other original locations. Then the demand for industrial parks in the suburbs of cities will increase. Investment in industrial parks will have high pays-offs if the government allocates space to promising entrepreneurs. If the government also provides financial support only to those promising entrepreneurs, the risk of failure in the allocation of investment funds will be reduced. In this way, the TIF approach is likely to enhance the likelihood of the success of industrial development significantly.⁶

Finally, it should be stressed that the policy of increasing the number of competent entrepreneurs by means of training will contribute to the establishment of competitive markets, which, in turn, is expected to reduce corruption and preferential treatment of specific industries and enterprises (Otsuka and Sonobe 2011).

III-2. Investment in Industrial Parks

Industries tend to be concentrated geographically. This is because of the benefits of agglomeration economies, including saving of transaction costs between enterprises due to the locational proximity, development of labor markets of skilled workers, and spillovers of useful information, such as innovative new ideas (Sonobe and Otsuka 2006). Indeed, there are many promising informal industrial clusters in SSA, such as a car repair-cum-metal processing cluster in Kumasi in Ghana, a leather shoe cluster in Addis Ababa in Ethiopia, and garment clusters in Dar es Salaam in Tanzania (Sonobe and Otsuka 2011). In addition to the agglomeration economies, clustering contributes to saving investment costs in infrastructure, because the construction of industrial parks equipped with transportation and communication infrastructures and water and sewage facilities is less costly than investments in such infrastructures over wide areas. Thus, the establishment of industrial parks which house enterprises produce similar and related products, e.g., part-suppliers and assemblers, ought to be a part of effective

⁶ Although we did not discuss it explicitly, general education of labor force particularly through schooling is extremely important. We did not take up this issue, as it is a part of overall economic and social policies, rather than of specifically industrial development policy.

strategy to develop manufacturing industries.⁷

The establishment of industrial parks, however, may fail to invite domestic enterprises to the parks, unless there are growing enterprises looking for larger spaces to expand the operation of their businesses. This is why we advocate the training of entrepreneurs as a first-step for industrialization. It is also worth emphasizing that the success of Thailand's Eastern Seaboard Development Plan (ESDP), which was alluded to before, rested on the fact that the construction of industrial parks and other infrastructures coincided with the congestion of industrialized areas in Bangkok and the transformation process of the entire economy from light-industry dependent to heavy-industry centered structures, which created huge demand for production space with a sufficient supply of infrastructure (Ariga and Ejima 2000).⁸ According to our own observations, industrial parks were constructed outside of the old urban industrial centers, when the original locations became congested due to the expansion and development of clustered enterprises in China and Taiwan. The relocation of the production bases to industrial parks led to the transformation from informal to formal clusters in these countries.

The establishment of industrial parks will help attract FDI, which is widely recognized as a conduit to transfer improved production technologies and management practices from developed to developing countries. FDI, however, will not be attracted without the availability of disciplined workers, experienced middle-level managers, suppliers of simple parts and components, and the certain development of supporting industries, such as machine repair sectors. Also needed are the liberalization of FDI policies and a variety of supports for FDI. The quality of industrial parks also matters. Since construction companies and general trading companies in Japan have accumulated experience in the construction of industrial parks, public-private partnerships can be deployed for the construction of industrial parks in SSA. Such partnerships will stimulate FDI of private manufacturing companies.

ODA is expected to contribute to the attraction of FDI. This is particularly the case in Japanese ODA (Kimura and Todo 2010). In order to do so, ODA must be allocated to human capital development and the establishment of infrastructure, which are not amenable to market mechanisms. In particular, we advocate the training of

⁷ According to Hashino and Otsuka (2016), producer associations play an important role in introducing new technologies and assuring the product quality in dynamically growing clusters. If such producer associations exist, support for and cooperation with them can be an effective way to develop industrial clusters.

⁸ According to Mieno (2013), ESDP was initially designed with two major aims in accordance with the fourth and fifth Five Year Plan in the 1970s: one was to reduce the excessive concentration of industries in the Bangkok metropolitan area by shifting growing light industries to the Laem Chabang port area, and the other was to construct government-led petrochemical industry utilizing natural gas in the Gulf of Thailand, based in Map Ta Phut port. Industrialization since the mid-1980s has oriented to FDI-led machinery industry, which is different from the envisaged initial plans to develop light industries and government-led petrochemical industries.

entrepreneurs and the construction of industrial parks, because these are expected to be cost effective and directly conducive to the industrial development.

III-3. Financial Support

Since the main function of financial intermediation is to allocate an appropriate amount of investment funds, the development of a financial system is indispensable for the development of the entire economy. In order to achieve this function, the financial sector needs the capacity to assess the potential performance of enterprises and the profitability of their projects. While information asymmetry generally impedes efficient transactions in the credit market, financial institutions must reduce inefficiency by means of information processing.

It is widely observed that the development of the financial sector is slow in many developing countries, which means that the problem of asymmetric information is not overcome in a number of countries. Consequently, the financial sector fails to allocate enough funds to promising investments. In order to improve management of the financial sector, human resources must be trained and, at the same time, continuous and long-term lending experience needs to be accumulated. Furthermore, legal and institutional governance systems must be in place to facilitate efficient financial transactions. In addition, monopolistic elements of the financial sector by large conglomerates, if any, must be removed to reduce distortions in financial markets.

Therefore, the general support for the development of the financial sector can be efficiency-improving. On the other hand, it may be desirable to introduce selective financial support by aid agencies and international organizations, which supplement the insufficient function of the underdeveloped financial sector. In particular, selective support for promising entrepreneurs within a context of the TIF approach can be highly desirable.

Japan has developed the two-step loan program for the purpose of targeted financial support.⁹ Under this program, Japan provides loans to development-oriented public or semipublic financial organizations in developing countries, which, in turn, provide loans to end-users who would not otherwise have access to formal loans. The

⁹ As another attempt to apply Japan's experience of SME financial support to developing countries, credit guarantee schemes also seem promising. Recently, the schemes are being applied to a few Southeast Asian countries (e.g., Yoshino and Taghizadeh-Hesary 2016). Apart from Japan's experience, the International Finance Corporation (IFC) launched the SME Ventures Program in 2007 in order to create jobs and promote robust economic growth by providing the risk capital and strategic advice to SMEs in developing countries. For example, one of the IFC's projects, Central Africa SME Fund (CASF) targeting at the Central African Republic (CAR) and the Democratic Republic of Congo (DRC), provided the risk capital of debt and equity to over 30 companies during the period from 2011 to 2015, which resulted in the creation of some 500 jobs at the targeted companies. This IFC program is worth analyzing further.
<http://xsmcapital.com/funds/central-africa-sme-fund/>

main end-users used to be small-scale farmers in Southeast Asia. Since the 1990s, loans to small- and medium-sized enterprises (SMEs) through public-sector organizations increased, as their demand for such loans increased with increases in FDI. It is critically important to recognize that the two-step loan is one way to support SMEs, whose production and management efficiency can be improved by the training of managers.

Although there are many successful two-step loan programs, the reasons for their success are not necessarily clear (Hayashi 1995). One possible though unlikely explanation is that local financial institutions possess sufficient capacity to identify promising enterprises and projects and the two-step loan programs simply utilize their latent capacity. Another possibility, which we believe is more plausible, is that the two-step loan provides opportunities for local financial institutions to accumulate lending experience to new loan users and thereby develop their abilities to find the promising projects, which otherwise would not have been supported.

Recently, variants in two-step loans have arisen. For example, Japan's experience offering a package of loans and management training to SMEs run by the Small Business Finance Corporation, which has been implemented in Japan, are now being applied to Asian countries. This attests the complementarity between the two, which is consistent with the TIF approach. In other words, we recommend providing two-step loans to those competent entrepreneurs who have participated in Kaizen management training programs. Since Japanese SMEs also launch production in developing countries, the two-step loans are used to support them. Recently, not only public-sector financial institutions but also private institutions have become involved in two-step loan programs. In any case, we recommend the use of two-step loans as a part of the package of the industrial development policies. At the same time, we must recognize that the economic rationale for why two-step loans have functioned well as an aid scheme is not yet completely understood. Therefore, further academic research in this field is called for.¹⁰

In the literature on finance in developing countries, there is a debate as to whether market-based or bank-based financial systems work better to facilitate economic development (La Porta et al. 1998; Levine 2002). The history of development of financial sectors in developing countries in Asia, however, strongly suggests that the development of a financial intermediary, instead of a capital market, should receive the first priority. This is because the commercial banks do not function well in providing loans to SMEs and, as a result, informal inter-business trade credit plays a major role in promoting their development (McMillan and Woodruff 1999; Allen et al. 2005). To build a better functioning financial system particularly for SMEs, the process of shifting from informal trade credit to formal bank credit through the enhancement of the

¹⁰ The loan program discussed here must be distinguished from micro-finance, which is designed to reduce poverty of poor households without regard to the industrial development.

capacity of commercial banking sector is key, and the relevant policy scheme is a vital agenda (i.e., Hellman, Murdock and Stiglitz 1997). On the other hand, it may not be an unrealistic assumption that in the long-term process of developing a financial system, well-targeted two-step loan programs can assist both the development of banking sectors and the TIF approach to industrial development.

III-4. FDI and beyond

Globally the amount of FDI has been increasing dramatically since the mid-1980s, as has FDI from Japan (Ito and Kruger 2000; Lall and Urata 2003). Both deregulation of financial transactions in developed countries and the liberalization of FDI policies in developing countries have contributed to the expansion of FDI. Japanese FDI also increased because of the appreciation of the Japanese yen, which led to the relocation of production bases to other Asian countries. Interestingly, Japanese FDI is characterized by a high concentration in the manufacturing sector, which reflects the comparative advantage of Japanese MNEs in manufacturing sectors in developing countries.

One of the purposes of such a rapid increase in FDI is the shift from exports to local production for sale in developing countries. Another major reason for the expansion of FDI is the fragmentation of production processes in which the best production locations across country borders are selected, in order to create global value chains. In this globalization process, the role of domestic enterprises as partners of MNEs has become increasingly important.

A large accumulation of literature demonstrates that FDI contributes to the development of recipient countries through various channels (Crespo and Fontoura 2007). In particular, FDI brings new technological and managerial knowledge that is useful for local upstream enterprises (e.g., suppliers of parts), but not for enterprises in the same sector as foreign firms (Javorcik 2014). This means that while foreign firms effectively protect know-how from their rival firms, they order the production of specific parts and components by local enterprises with instructions detailing the production methods. In other words, the initial effect of FDI is to stimulate the development of industrial sectors producing parts and components. The other side of the same coin is that in order to attract FDI, the development of part-supplying industries is very important.

The part-supplying sectors, however, will not develop dramatically, if part-suppliers passively receive production materials and the production instructions from foreign enterprises. They may be termed as captive suppliers (Gereffi et al. 2005) or traditional subcontractors. As is cogently pointed out by Humphrey and Schmitz (2005), production design, procurement of appropriate materials, marketing research, and marketing are core competencies of leading MNEs, and are a major source of profits. In other words, the management abilities of local entrepreneurs do matter.

Managerially competent entrepreneurs will try to absorb not only the knowledge of production methods but also knowledge of management, encompassing pre- and post-production activities. Only if local entrepreneurs learn advanced management methods, their enterprises can become independent and earn a large share of profits. This view on the importance of management ability for the absorption of advanced knowledge is consistent with the recent literature referenced earlier, which argues that what is really missing in developing countries is managerial human capital (Bloom et al. 2013, 2016; Bruhn et al. 2010; Sonobe and Otsuka 2014).

Thus, foreign companies are willing to provide training in production, but not in management. This means that the attraction of FDI is not the end of industrial policy but the beginning of a new phase of industrial development in which management ability must play a key role. Therefore, we recommend the provision of training programs by the government and aid agencies to enhance the absorptive capacity of local enterprises (see Figure 1). Such training may lead to “imitative innovation,” which can have path-breaking impacts on productivity growth and industrial development in developing countries (Sonobe and Otsuka 2006, 2011). In order to realize such industrial development, it is critically important to generate a new cohort of highly competent management consultants in SSA.

IV. Proposal for Industrial Development in SSA

Unlike modern service sectors, such as those related to ICT and the financial sectors, which employ highly educated workers, light manufacturing industries are capable of providing ample employment opportunities for the uneducated, women, and youth, thereby making it possible to achieve inclusive growth. The starting point of our proposal is the recognition that there are many developed spontaneously industrial clusters in SSA, producing garments, textile, shoes, processed foods, furniture, metal products, and simple machineries. Their development is market-led and obviously in line with their comparative advantage. In our view, these industries fail to develop because of the market failures, ranging from socially inadequate investment in managerial human capital and infrastructure to the absence of efficient financial markets. Thus, our proposal aims to correct these market failures by supporting management training, investment in infrastructure, and the provision of credit.

Our second premise is that the transfer of useful technology and management knowledge from advanced countries is the prerequisite for industrial development in SSA. Based on Japan's experience of supporting the miraculous development of East Asian economies and empirical evidence accumulated in SSA, we propose to disseminate Kaizen management in this continent.

The unique feature of our proposal is its recognition of the complementarities among policy measures. It seems obvious to us that rates of return to investment in industrial parks will be very low unless there are many promising and growing local enterprises. Similarly, the provision of cheap credit does not make sense if there are only a small number of promising enterprises or if promising entrepreneurs cannot be identified. In contrast, empirical evidence clearly shows that management training of entrepreneurs is effective even without any other policy supports. Thus, we recommend the TIF approach, beginning with the training of entrepreneurs, which is useful not only for enhancing entrepreneurial abilities but also for identifying promising entrepreneurs, followed by targeted supports for promising enterprises by means of investments in industrial parks and provision of credit (see Figure 1).

Considering the increasing importance of FDI as a conduit to transfer advanced technologies and improved management practices from developed to developing countries, we propose that the TIF approach should be designed to attract FDI from the beginning. For this purpose, we recommend private enterprises interested in FDI, practitioners of foreign aid, and development economists participate in designing the

TIF approach in practice.

It is a mistake to assume that once FDI is made, local enterprises will learn useful knowledge and grow accordingly. While the presence of FDI provides an opportunity to learn, whether the host country enterprises learn useful knowledge and grow depends on their absorptive capacity. At this stage, advanced management and technical training becomes crucial. In all likelihood, if such investments are made, local enterprises will continue to grow, which will lead to the development of local industries and stimulate the development of the entire economy.

Finally, it must be stressed that the concerted efforts of practitioners, MNEs, and economists are needed to design the effective TIF approach. Due considerations must be given to the unique features of countries in SSA, which can be significantly different from those of Asian countries. Furthermore, success or failure in each step of the TIF approach, including investment in infrastructure and financial support for competent entrepreneurs, hinges on the development of both managerial and technical human resources capable of effective operation and maintenance. If concerted efforts are made successfully, we are wholly confident that the TIF strategy will lead to sustainable and inclusive industrial development in SSA.

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