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BAYER CROPSCIENCE MODEL VILLAGE PROJECT: CONTRIBUTIONS TO AGRICULTURAL SUPPLIERS' COMPETITIVENESS AND HUMAN DEVELOPMENT*

ABSTRACT

Bayer CropScience is carrying out a Model Village Project (MVP) in rural India as part of their supply chain management and their corporate social responsibility activities. The MVP includes actions related to future business cases and higher competitiveness as well as philanthropic activities. The preparation of future business case actions aims at creating prerequisites for win-win-situations. In the long run, these prerequisites, such as long-term business relations with suppliers based on trust from both sides, can lead to a higher competitiveness of the whole supply chain and simultaneously improve human development. The impacts on the latter are evaluated using the capability approach (CA) developed by Amartya Sen (2000, c1999). The case of the MVP indicates the potential of companies to contribute to human development on a strategic win-win basis. Actions have to be distinguished based on the living and financial conditions different supplier groups face. In the future, the MVP aims at assessing whether and how MNCs may be able to combine competitive enhancement with human development, provided that potential corporate risks for the villagers' human development are also taken into account.

Keywords: Competitiveness, social supply chain management, corporate social responsibility, human development and capability approach, rural India

1. Introduction

"The social responsibility of business is to increase its profits" (Friedman, 1970: 173) is the headline of the well-known, often cited article by Milton Friedman published in 1970 in the *New York Times Magazine*. He ends his paper with a quote from his book *Capitalism and Freedom*: "(...) there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud" (Friedman, 1970: 177). Nonetheless, Friedman points out that it might be important for the long-run business success of companies to follow corporate social responsibility practices when it is in the self-interest of companies and he explicitly advises against window-dressing activities. Carroll (1991: 43) clarifies that: "Most people focus on the first part of Friedman's quote but not the second part. It seems clear from this statement that profits, conformity to the law, and ethical custom embrace three components of the CSR pyramid—economic, legal, and ethical. That only leaves the philanthropic component for Friedman to reject."

Friedman's argument that companies have an obligation to fulfill the economic and legal framework established by the government and that it is the responsibility of the state to set the "rules of the game" might be achievable in countries with good governance furthered by government but has its limits in countries with large governance gaps and government failures (Moczadlo, Volkert, 2012). When states are incapable of setting and enforcing a legal framework that benefits its society and supports sustainable development of transactional actors – from multinational companies (MNCs) to local, national or international non-governmental organizations (INGO) – (the organizations) are expected by the public to act (Risse, 2007: 258-261).

Today the leading business managers acknowledge that the role of the private sector has changed during the last decades, especially when they are carrying out business in emerging and developing countries. By 2013, the United Nations Global Compact was voluntarily signed by nearly 8,000 companies from 140 countries (United Nations Global Compact, 2013: 2). These companies have committed themselves to aligning their businesses with the principles the UN defined for responsible business

conduct in the fields of human rights, labor, environment and anti-corruption. In 2013, Accenture and United Nations Global Compact (2013: 21-25) conducted a survey interviewing 1,000 global CEOs from 27 different countries. Almost all of them (93%) said they believe that sustainability will be important to the future success of their business. 80% of them see sustainability as a means to gaining competitive advantage in their industry. However, only one third of them believe that "business is making sufficient efforts to address global sustainability changes" and admit a variety of corporate performance gaps between "ambition and execution on sustainability" and "that the global economy is on a good sustainability track". Almost four out of ten see missing links of sustainability and business value as an obstacle. 38% think that they can accurately quantify the business value of their sustainable development activities (Accenture and United Nations Global Compact, 2013: 17).

Although transnational companies make commitments and set targets, a lot of work is still required in the areas of implementation, measurement and communication to make most of the corporate sustainability potentials. The "Model Village Project" (MPV) of Bayer CropScience, initiated in 2010, addresses these critical issues. The aim of the company is to create shared value with their supplying smallholder cotton seed farmers in rural Karnataka, India. From the beginning of the MVP, Bayer CropScience cooperated with independent scientific evaluators, who are the authors of this paper and with a local NGO.

The aim of this paper is to discuss potentials of the planned and partly realized activities Bayer CropScience is undertaking as well as challenges and limitations. It is related to the broader field of literature about impacts of FDI and CSR by MNCs in emerging and developing countries. The paper describes work in progress and is structured as follows: Chapter 2 delivers the theoretical background. It first briefly sketches the impacts of MNCs on emerging and developing countries and gives an overview of selected empirical findings in the literature. Therefore, we look at employment and income effects of FDI in the agricultural supply chain. Then we discuss the findings and consequences of international investors' CSR activities for developing host countries. In chapter 3 we specify the background of the MVP and the aims of Bayer CropScience. Chapter 4 introduces the methodology of evaluation and the

data base. Chapter 5 gives a short overview on selected issues describing the initial living situation of the people in the villages. We evaluate this situation from the perspective of the people centered capability approach (CA) developed by Amartya Sen (2000, c1999; 2008) and hence focus on areas of deprivation of the farmers. In the next step we mirror these findings with the villagers' own perceptions to identify activities they value and restrictions they are aware of. In chapter 6 we discuss exemplarily activities Bayer CropScience plans to carry out or has already started to implement. In Chapter 7 we discuss problems and limitations of corporate supply chain strategies for human development. Chapter 8 contains major results and a conclusion.

2. Theoretical background and empirical findings

2.1 Impacts of foreign direct investment on the agricultural supply chain

FDI can have both positive and/or negative impacts on emerging market and developing countries. Despite the positive spillovers that will come with FDI, MNCs possess a huge market and political power which can suppress competition and influence government decisions in favor of their own interest (Rugraff, Hansen, 2011: 15–16).

On the positive side, FDI are expected to increase growth in the host country, have technological and knowledge spill-over effects, enhance human capital development and thereby deliver productivity gains. Productivity increase is a source for gains in competitiveness and can further be used to increase wages and income (Moczadlo, 2013a: 53). On the one hand, FDI in the agricultural sector is evaluated to be a mean for poverty reduction because it takes place in rural areas and includes a high amount of unskilled labor. On the other hand, it is argued that high product and process standards act as non-tariff barriers and hence exclude poor countries from international agricultural trade (Maertens et al., 2011: 2).

Gorodnichenko et al. (2013: 29–30) found positive efficiency spillovers increasing with direct interactions between domestic suppliers and MNCs. In the agricultural supply chain, the absorption potential is high when local companies have direct assistance

from MNCs, further demonstrating – to show, explain and reproduce agricultural techniques – has high and positive effects on the development of domestic farmers (Farole, Winkler, 2014: 3). Dries et al. (2014: 105) found for the dairy sector in Armenia that buyers provide support measures to suppliers, but discriminate in the sense that more costly measures are only provided to a smaller number of them. Further, suppliers received better support from international buyers and from buyers with whom they maintain a more exclusive relationship. Also Schipmann and Qaim (2011: 676) believe the relationship between buyers and smallholder farmers to be essential. They analyzed the integration of smallholder farmers in contractual arrangements for marketing in the sweet pepper market in Thailand. Smallholder farmers mostly sell to village traders. Maertens et al. (2011: 15–17) found no correlation between education and non-land assets for employment in Senegal's tomato export, thereby showing that these aspects do not lead to higher inequality. This correlation was found in other empirical studies for off-farm employment in rural Sub-Sahara Africa. The authors further found that the income effects for the households in Senegal's tomato sector increase due to the wage effect. They concluded agricultural wage employment to be a strategy for poverty reduction because it is accessible for less educated and resource-poor households. In the discussion, they pointed out that their results may be unique because of the characteristics of the region, the commodity and the company involved.

Schipmann and Qaim (2011: 676) however, referring to the results of Maertens et al. (2011), could not find positive employment and income effects for poor smallholder farmers in Thailand's sweet pepper sector because the technology intensive production process doesn't require a high number of unskilled labor.

Obviously, the impacts of international MNCs sourcing in emerging market countries can be, but are not necessarily beneficial for the smallholder farmers' sustainable development. To optimize corporate strategies, impacts on the farmers, their families and their villages also have to be assessed. This allows corporate win-win potentials that are beneficial for corporate competitiveness as well as for corporate stakeholders and sustainability to be realized. Responsible corporate and stakeholder management is key to strategic CSR. Therefore in the following, we briefly sketch CSR impacts on

host country stakeholders as major drivers of a corporate strategy to mutually strengthen competitiveness and sustainability.

2.2 *Impacts of CSR on emerging markets and developing host countries*

CSR activities can prevent harm resulting from market failures like public goods and externalities when buying from smallholders (Humphrey et al., 2014: 8) and at the same time improve long-term corporate competitiveness and performance. The latter is feasible through improved efficiency, higher productivity of employees, product market gains, better access to the capital market, improved quality of earnings and risk management.² However in the field of CSR activities, empirical findings about their impact are controversial (Jamali, 2010: 181). Schölmerich (2013: 29–30) uses the CA to analyze the consequences of companies' corporate social responsibility (CSR) initiatives on poverty reduction in Cambodia. She found that the CSR measures of the private sector had positive effects on their stakeholders. Further she distinguishes between built-in CSR strategies, where companies include CSR activities in their core business, and bolt-on strategies, where there is no connection to the core business. Her results show that built-in strategies are more effective than the bolt-on ones but the latter also contributed to poverty reduction. She confirmed the finding of Barrientos and Smith (2007) that outcome standards like health and safety are more often improved through CSR than process rights like freedom of association.

In their literature overview about MNCs' impacts on developing countries, Giuliani and Macchi (2014: 484–487) find contradictory positions with respect to CSR impacts on human rights. The optimists argue that MNCs can improve the living conditions in developing countries by the application of codes of conducts and CSR measures. Further they quote a study that calculated the social investments of 50 MNCs to be almost as high as the entire annual operating budget of the United Nations Development Programme (UNDP). Pessimistic authors argue that CSR is an inadequate mean to reach development goals. CSR activities with the focus on the business case are not enough to reliably improve living conditions of people in developing countries.

Regarding CSR's impacts on human development, major concerns, challenges and limitations relate to the need and feasibility of responsible supply chain management. Lund-Thomsen and Lindgreen (2014: 19) doubt that MNCs will be able to manage long-term, trust-based and close relationships with all of their hundreds of suppliers, which, for instance, are prerequisites to achieve and maintain working condition improvements. Instead they assume that this approach will be applied in some pilot projects for assessing functional alternatives of supply chain management.

The United Nations Global Compact (2013: 18–19) emphasizes that there is still a lot of need for improvement in the field of supplier sustainability. Among all 1,712 multinational companies interviewed, no more than 18% implement and monitor goals for the supply chain, just 16% use third party audits to monitor compliance in the supply chain and only 9% take action to verify remediation. Major obstacles that prevent companies from integrating CSR into the supply chain comprise lack of capacity, of knowledge, of supplier data, of a clear link to the business value and of financial resources. Altogether, they may contribute to the finding that for every third company, lack of priority is the major obstacle to extend sustainability strategies into their supply chain.

Obviously, supply chain issues are a major challenge for responsible corporate competitiveness and sustainability strategies. Therefore, we briefly discuss how supplier development can improve competitiveness before discussing these and further issues in the context of the Bayer CropScience MVP.

2.3 *MNCs' supplier development for increase of competitiveness*

Prices and qualities of suppliers directly influence MNCs' competitiveness. Their economic success therefore depends on their suppliers' performances (Modi, Mabert, 2007). In their literature review, Bai and Sarkis (2011: 13506) identify four major, partly overlapping categories of activities buyers use for improving the performance of suppliers:

1. Knowledge transfer (e.g. technological knowledge, training in optimizing the production process, quality assurance and human capital of the suppliers)

2. Investment and resource transfer (e.g. finance capital expenses, personnel transfer from supplier to buyer and vice versa, rewards and incentives)
3. Feedback and communication (e.g. supplier evaluation and feedback, setting of improvement targets, information sharing, auditing)
4. Management and organizational practices (e.g. long term contracts, Formal process to identify supplier cost reduction targets, cross-functional supply chain team).

Moreover, Modi and Mabert (2007: 43–44), building on a knowledge based view of a firm, propose certifications to ensure that suppliers fulfil minimum requirements and are able to absorb the knowledge provided to them by the buyer. Incentives are important for partnership development. Operational knowledge transfers can increase the performance and competitiveness of the whole supply chain.

Khan and Nicholson (2014: 1212) focusing on supplier development in emerging markets, point out that due to resource asymmetry, local suppliers are dependent on international buyers during the technological catch-up process. They differentiate three general steps in the supply chain development. In the first stage - due to a significant perception gap - suppliers often distrust buyers. The second stage is characterized by the development of relational capital through more frequent communication and interaction. This phase is the base for a strong partnership in the third stage. They conclude that managers should enhance the catch-up processes through communication and relation building with CSR strategies and be aware of perception gaps in the beginning of collaboration with suppliers in emerging markets (Khan, Nicholson, 2014: 1220).

Upgrading is an important element in both the compliance-based and the cooperation-based paradigm of global supply chain management where due to pressure from multi-stakeholder initiatives, CSR activities are integrated in the vertical supply chain. The compliance-based paradigm concentrates on corporates' codes of conducts and ethical guidelines to integrate social and environmental targets. Multistakeholder pressure here partly replaces local legislative gaps and governmental failures. In the cooperation-based paradigm the focus lies on value chain governance by international buyers. Long-term and trust-based relationships between buyer and supplier are core elements (Lund-Thomsen, Lindgreen, 2014).

3. Bayer CropScience Model Village Project³

3.1 Background

In 2002, Bayer CropScience acquired the French corporation Aventis with a subsidiary in rural India that operated in the production of cotton seeds. Due to this acquisition Bayer CropScience procured cotton seeds from smallholder farmers in rural India. About one year later the company was accused by NGOs of child labor in the fields of their supplying Indian farmers. Bayer AG, one of the early signatories of the United Nations Global Compact, being committed to a zero child labor strategy, faced major challenges. After substantial stakeholder pressure and an intensive learning process the company succeeded in remarkably mitigating child labor (Bayer CropScience AG, 2011). Several NGOs acknowledged the contributions of Bayer CropScience to diminish child labor (Subramanian, 2011: 7). Due to this success Bayer CropScience planned a rural development strategy, the MVP.

3.2 Aims of the MPV

The aims of the MVP are both to contribute to the human development of the model villages and enhance the efficiency of the supply chain. The project includes four villages, where the company was not sourcing during that time, two model villages and two control villages in rural Karnataka (South India).

In an internal communication, Bayer CropScience specified the aims of the MPV as follows: "... development of the villages in a clear win-win context by developing economically sustainable business in a triple bottom line perspective, by also providing and preserving social and environmental bottom lines."

A prerequisite for successful long-term relations in a supply chain is the development of trust between the business partners. Personal relationships are the key to develop trust, especially when dealing with farmers (Fischer, 2013: 213). Hence the outline and the carrying out of activities should simultaneously promote trust and personal interaction to build up relational capital (Cousins et al., 2006: 860).

4. Methodology and database

4.1 Methodology

Bayer CropScience decided to cooperate with independent evaluators for not only the development of MVP activities, but also for gaining profound insights into their effectiveness and continuous improvement. A team of economists (the authors of this contribution) evaluate whether the set of actions Bayer CropScience implemented can drive sustainable human development. The evaluation is based upon the capability approach (CA) of Amartya Sen (2000, c1999; 2008; 2009) and uses a combination of quantitative and qualitative methods.

The CA as a people-centered, normative approach focuses on multidimensional aspects of human well-being. "The capability approach to a person's advantage is concerned with evaluating it in terms of his or her actual ability to achieve various valuable functionings as a part of living." (Sen, 2008: 271).

The capability set of a person describes the functionings a person can achieve. Functionings - "the various things a person may value doing or being" (Sen, 2000, c1999: 75) - are the outcome or achievements a person attains out of his or her capability set after decision making and taking choices. Hence the CA also takes into account all the factors that impact the well-being of a person as well as the factors influencing the assessment of alternatives by a person. The decision-making process itself is triggered by preferences, social influence, the history of a person, psychology, etc. (Robeyns, 2005: 95–102).

As such, the CA is centered on the real freedoms that people value and have reason to value (Sen, 2000, c1999). The freedom a person has must be an achievable and realistic opportunity and not only theoretically or legally given (Alkire, 2005: 121).

Therefore, activities to improve human development hence should focus on the enhancement of people's capabilities – their freedom to advance or achieve beings and doings people value and take into account the constraints and opportunities of people's environments in their domestic, cultural, social, economic and political aspects (Biggeri, Ferrannini, 2013: 61).

For the enhancement of substantial human freedoms economic growth, technical progress and/or social modernization are instruments, not goals in themselves (Drèze, Sen, 2002: 3). Alkire (2005: 119) points out that the evaluation of poverty reduction activities should focus on functionings and further that not all functionings are relevant for every evaluation. This focus goes beyond an evaluation of income or expenditure poverty. Evaluation questions comprise e.g. the identification of the well-being dimensions people value and related constraints they are facing, selection and prioritization of functionings for particular poverty reduction initiatives and the actual expansion of capabilities, functionings and agency - the ability to realize goals she or he aims at.

According to Biggeri and Ferrannini (2013: 63) different stakeholders are able to initiate activities for improving conversion factors and agency on the individual and community level. The case of the MVP aims at exploring whether, and if so, how this role can be also overtaken by MNCs.

4.2 Database

A baseline household survey was conducted in the summer of 2011. Almost 1,000 households (75% of all households in the villages) of all castes have been covered. The survey includes data of more than 5,800 people and allows for assessment of villagers' status before activities are implemented. To be able to follow development over time, every third year the same households and individuals will be interviewed again. This panel survey will allow for identification of the consequences of activities carried out by Bayer CropScience.

After each interview the weight and height of the villagers were also measured to calculate the body mass index (BMI) defined as weight in kg divided by squared height in meters. This index allows an assessment of malnutrition. According to the definition of the World Health Organization (1995: 17), a person is considered to be malnourished if his/her body mass index (BMI) is lower than 18.5. Furthermore focus group discussions (FGD) on a diverse set of topics were carried out yearly since 2012 to understand the priorities, subjective needs and opinions of the people.

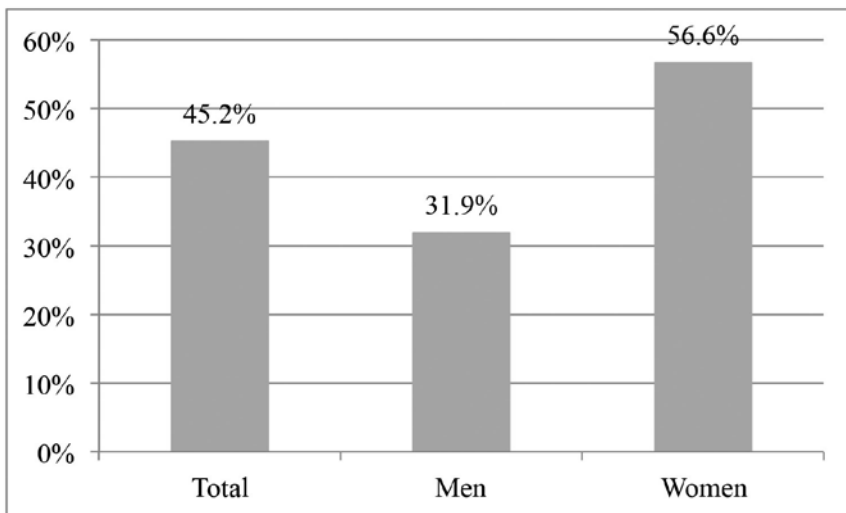
5. Initial situation in the villages

5.1 Financial resources

The CA as the methodological framework underlying the evaluation of the MVP perceives income and financial resources as instruments, respectively as means to achieve capabilities and functionings. In order to measure income poverty in the villages, threshold for extreme poverty of INR 420 has been used. However, as the CA challenges the neglect of intra-household inequalities of this widespread global measurement practice, we have also directly asked every respondent whether she or he is personally able to spend more than INR 420 per month.

As Figure 1 shows, expenditure poverty is a major issue in the villages. Almost every second villager (45.2%) lives in extreme poverty and cannot spend 420 INR or more per month. The situation is better for men than for women, thereby confirming major intra-household income inequalities. This extreme expenditure poverty is a major driver for high indebtedness in the villages.

Figure 1 Expenditure poverty (Share of villagers aged 15+ years who are unable to personally spend more than INR 420 per month)



Source: Model Village Project Baseline Survey (2011)
Own data and figure.

Already two thirds of the villagers are indebted: eight out of nine of those who have debts report that they sometimes or often face problems to finance their debt service. Hence, the majority of villagers would run considerable risk when taking on more loans (Volkert et al., 2014: 25-28).

As an evaluative framework, the CA also allows for identifying further MVP impacts on multiple non-financial dimensions of villagers' well-being that may be directly or indirectly relevant for the company. For instance, FGD carried out for the evaluation showed that some villagers may have to make compromises related to health, like buying food versus buying medicine due to the lack of income.

5.2 Nutrition and health: the objective status

Bayer CropScience initiated health camps to assess the objective health status of villagers. They found about 45% of the villages' population aged 15 or older to be malnourished. Basic sanitation and access to safe drinking water are crucial elements for healthy living. As basic sanitation is not available in the villages, open defecation (99.3% of the villagers) is widespread.

Anemia has been observed to be common and malnutrition has been identified to be a major causative factor for illnesses. Also, villagers were found to use medicines haphazardly, often without consultation from a doctor. A number of diseases can result from this habit. More than 70% of the people chew tobacco. As a result, the dental status of the people in the MVP is very poor. Around 40% suffer from stains, 80% from chronic generalized periodontics (Moczadlo et al., 2014: 10–12). In FGD alcoholism has been reported to be widespread among men.

5.3 Financial means, health and nutrition: the subjective perception

To gain trust as a basis for a long-term corporate cooperation, it is decisive to take seriously what people perceive to be essential for their well-being and foster their opportunities to improve such issues when they find themselves restricted in a certain respect. Therefore, we have investigated this in the quantitative baseline study. We find that a relatively high share of respondents who exceed the average of all dimensions of well-being, say that a good income is extremely important. The same holds for the ability to live a long and healthy life, which includes being well-nourished. However, an above-average share of interviewees say they feel restricted in their freedom to achieve a good income. This is consistent with the objective data of high extreme poverty headcount ratios in the villages (Volkert et al., 2014: 11).

As indicated above, health camps have also shown that the people are objectively deprived in their capabilities to live a long and healthy life and to be well-nourished (Moczadlo et al., 2014). However, contrary to these objective findings, only a small share of those who believe in the importance of being healthy or having sufficient nourishment, feel restricted in their real freedom to achieve these goals. Those gaps between objective facts and subjective perceptions are well-established in the development economics literature, i.e. by Sen (2009: 285–286) who explains: “The internal view of the patient may be seriously limited by his or her knowledge and social experience. A person reared in a community with great many diseases and little medical facilities may be inclined to take certain symptoms as “normal” when they are clinically preventable.” These kinds of misperceptions have been found in FGD in

which villagers agreed that they have the freedom to live a long and healthy life, despite widespread malaria and dengue fever as the latter are considered to be “normal”.

5.4 Challenges of the initial situation for Bayer CropScience

Extreme poverty and high debts restrict Bayer CropScience's suppliers from investing in agricultural business opportunities like buying seeds from the company and result in low productivity of the supply chain, which in turn reinforces the persistence of low incomes (Strotmann, Volkert, 2013: 85). Moreover, high debt services further reduce the disposable income for investment and household expenditures.

Dercon and Christiaensen (2011: 169) showed that poor households in Ethiopia protect themselves against downside risks in times of low income by reducing the usage of items like fertilizers that may further productivity, but might at the same time be costly. Thus households cannot always manage the high costs and associated financial risks of conventional agriculture technology which feeds back on their poverty (Moczadlo, 2013b: 96).

A multidimensional CA perspective allows for the identification of further direct and indirect challenges. For instance, extreme income poverty has been found to be a major driver of child labor which is at risk of reducing school participation. In severe cases, untrained application of agricultural chemicals by child workers may also challenge the health and life of the children (Strotmann, Volkert, 2013). As such, child labor is of major concern for Bayer CropScience as their CSR strategy is explicitly committed to a zero tolerance child labor policy.

Severe health problems as well as addictions which are very common in the villages result in substantial expenditures which further restrict disposable income for investment and other household purposes. Above all, the overall poor health status and alcoholism of men leads to corresponding restrictions on productivity and income improvements.

Malnourishment is an underlying cause of diseases and correlates with lower productivity, especially in agriculture as it requires a lot of physical work. Additionally, malnourished children experience reduced cognitive potential and education under

attainment which can discourage children from attending school, paving the way for child labor as a more promising short-term alternative.

As such, increasing productivity, income and investment are essential for the competitiveness of Bayer Crop Science's supply chain and require a strategy that addresses both financial and non-financial issues of development. As people in the villages perceive income as a mean for personal well-being and are at the same time well aware of their restrictions, corporate contributions to higher incomes can be a good starting point to gain the villagers' trust and support.

However, this is a rather complex undertaking. Low income and widespread, high indebtedness hamper the ability of corporate suppliers to sufficiently invest and increase productivity. Microloans which are usually considered as a solution may in fact further the issue by increasing suppliers' indebtedness. Moreover, an exclusive financial solution neglects the dynamics of non-financial causes of low productivity and incomes, e.g. malnourishment and lack of health. Furthermore, the baseline results show that the people are unaware that they are malnourished and the consequences this may have on their health status. Therefore, Bayer needs to raise awareness and inform the villagers of these issues before implementing corporate measures to gain their trust.

The following section will discuss how Bayer aims at addressing and overcoming these challenges.

6. Bayer CropScience's MVP strategy: identifying and preparing business cases by corporate sustainability strategies

We have shown that Bayer CropScience faces the challenge of finding a competitive, comprehensive strategy which must also include other complexities like improving income, capital accumulation, health and nutrition.⁴

One question that comes to mind is how Bayer CropScience can improve capital accumulation, productivity and income without increasing the risks that suppliers will become even more indebted and end up in bankruptcy. Offering more loans to men who have already accumulated challenging amounts of debt and who may have an alcohol addiction is no alternative.

In FGD, women have indicated that they would like to save in order to improve the financial situation of their households, and were willing to establish their own businesses to do so. Compared to their male counterparts, women usually had zero or low debts, did not abuse alcohol and were more willing to reduce their tobacco consumption. However, women face their own specific challenge, the substantial intra-household inequality highlighted in section 5.1 which explained that women had considerably lower disposable income than man. Therefore, it would still be very risky to start a microloan initiative among these women. "Rotating Savings and Credit Associations" (ROSCAs), organized by local NGOs have turned out to be a feasible and more promising alternative. ROSCAs enable members of informal groups to organize and commit to saving and borrowing amongst themselves (Raccanello, Anand, 2009). In this case, one of the advantages is that loans are only provided on the basis of prior savings. As such, by saving first, group members demonstrate their ability to accumulate capital as a decisive precondition for the later ability to pay back loans.

As a result of ROSCAs, women have successfully been able to finance goat, sheep and chicken rearing activities. The groups also receive advice and practical support from local NGOs which are financed by Bayer. These initiatives can help increase the income of households, as well as contribute to better nutrition and health. Bayer CropScience is also focusing on the latter by raising awareness of health and nutritional issues via the ROSCAs. Furthermore, some women directly devote a part of the accumulated capital for important health care measures which may also lead to increase in productivity.

However, as human development is a multidimensional process, Bayer CropScience, which continues to carry out health camps, has started to support the strategy with accompanying initiatives like water management activities. In one of the model villages a water purification plant has been constructed where people can buy purified water at low costs. In the other model village Bayer CropScience plans the introduction of rainwater harvesting which can considerably strengthen the competitiveness and sustainability of Bayer CropScience's core business. Rainwater harvesting can also benefit the new animal rearing activities which are financed by the new ROSCAs. The first set of farmers have been encouraged to experiment with drip irrigation with the

hope that it may also increase the productivity and sustainability of agriculture and help strengthen incomes in the long run.

In 2014 a livelihood training center was established. Farmers shall have opportunities to learn and to train new agricultural cultivation techniques. The planned trainings by demonstration and direct assistance might have a high absorption potential as mentioned by Gorodnichenko et al. (2013: 29–30) as well as by Farole and Winkler (2014: 4) Positive spill-over effects can further be expected in the fields of technology and human resource development as shown by Rugraff and Hansen (2011: 15–16). Moreover the LTC can enable the farmers to improve organizational learning what Martinuzzi and Krumay (2013) evaluated as a powerful tool for competitiveness increases.

These are only some examples of the potential to prepare and strengthen business cases and competitiveness by multidimensional corporate supply chain strategies which may at the same time foster human development. In the best case, corporate and human goals work in harmony and allow a successful win-win strategy. Nevertheless, in other settings business cases may not be strong enough or even violate human development, which we discuss in the following.

7. Problems and limitations of corporate supply chain strategies

7.1 Lack of business cases and neglect of human development

Some human development issues may have a certain relevance for business cases, however costs may be prohibitively high or impacts not substantial enough to profitably include initiatives into corporate supply chain strategies. An example is the issue of primary education. Primary education may have a positive long-term impact on the educated future adolescents that will later become business partners or employees of the company. However, for most of the primary school participants this will not be the case. Here, the high corporate costs outweigh the future expected gains. Nevertheless, Bayer CropScience has decided to also foster primary education.

This can be helpful for the MVP because among all dimensions of well-being, education is considered extremely important; at the same time a relatively high number of people say they feel restricted in this dimension. Therefore, improvements in primary schools are a suitable starting point to build trust in the model villages. However, the costs of this undertaking may well surpass the benefits and result in no business case. It is therefore rational that Bayer CropScience has started a scholarship and additional educational programs, financed by donations from its employees in India and not by corporate means. Such a donation strategy is consistent with the lack of a business case, but certainly not suitable to scale up beyond the model villages. Scaling up needs other approaches for trust building such as demonstration effects of successful model villages and train the trainer approaches.

7.2 Risks of human development violations by corporate business cases

In other cases companies may not only neglect human development issues due to insufficient or unknown business cases; rather, existing business cases may be at risk of violating human development. For instance, it is estimated that every year 3 million people are poisoned by the use of pesticides, 355,000 of them die and 750,000 end up with chronic diseases. Most of these incidences occur in the developing world (Atreya et al., 2011: 53). As illiterate, less informed customers may not be able to adequately apply these products, also in this core business field, systematic training and information on safe use and health issues of the products are essential for a win-win situation.

However, when established business cases are conflicting with human development and sustainability issues, it is hardly possible in a competitive environment that companies voluntarily change their strategy in a less profitable, though more sustainable direction. Among the CEOs of 1,000 multinational companies, 83% have acknowledged that government policy making and regulation will be necessary to overcome the lack of corporate business cases and sustainability performance (Accenture and United Nations Global Compact, 2013: 17). This is certainly economically plausible.

However, in 2009 an attempt to internationally ban a highly toxic pesticide failed as a result of Indian government's resistance which aimed at protecting a state-owned Indian company's production of this pesticide (Ahrens, 2011). Hence, (re-)regulation by governments can certainly be successful but only with good governance by regulating governments.

8. Discussion and conclusion

Our paper has provided an overview of work in progress. Already in this early phase of the MVP some promising potentials can be seen for MNCs to enhance the living conditions of smallholder farmers. The proceeding of Bayer CropScience indicates the potential and necessity of a well-managed strategy that integrates corporate, economic as well as social determinants of human development to gain trust prepare and later improve business cases and competitiveness in the supply chain. For experimenting with promising approaches, Bayer CropScience finances a local NGO based development coordinator to optimally take account of and benefit from the interdependencies of multiple human development dimensions.

Bayer CropScience's strategy is related to the co-operation-based paradigm of global supply chain management with long-term and trust-based relationships as proposed by Lund-Thomsen and Lindgreen (2014). Knowledge transfer and information

sharing will be key elements. Bai and Sarkis (2011) as well as Lund-Thomsen and Lindgreen (2014) evaluate such a procedure as promising. With their health related activities Bayer CropScience also aims on trust development and tries to overcome the distrust Khan and Nicholson (2014: 1212) mentioned to be normal in the first phase of collaboration between MNCs and local suppliers in emerging markets. The cooperation with a local NGO in the planning and implementation process is another element in the strategy of trust building. The Bayer CropScience case shows that MNCs may have potentials to create win-win-situations which could be beneficial for the whole supply chain. Prerequisites are long-term business relations with the suppliers and trust from both sides.

Nonetheless we can conclude that in general lack of business cases will result in a limited scope for win-win strategies for corporate supply chains and competitiveness. This can also cause corporate strategies to neglect important human development issues. Missing links between sustainability and business value as well as difficulties to precisely quantify business values have been reported to be severe obstacles. (Accenture and United Nations Global Compact, 2013: 17). Scientific evaluations like in the Bayer CropScience MVP can help in identifying, specifying and extending the scope of supply chain strategies to increase competitiveness in the long run.

REFERENCES

1. Accenture and United Nations Global Compact (2013), *The UN Global Compact-Accenture CEO Study on Sustainability 2013: Architects of a Better World*.
2. Ahrens, R. (2011), "Langlebige Gifte erfolgreich gebannt" (durable poisons successfully banned), available at: <http://www.ingenieur.de/Branchen/Chemie-Pharmaindustrie/Langlebige-Gifte-erfolgreich-gebannt> (accessed on: October 20, 2014)
3. Alkire, S. (2005), "Why the Capability Approach?", *Journal of Human Development*, Vol. 6, No. 1, pp. 115–135.
4. Atreya, K., Sitaula, B.K., Johnsen, F.H., Bajracharya, R.M. (2011), "Continuing Issues in the Limitations of Pesticide Use in Developing Countries", *Journal of Agricultural and Environmental Ethics*, Vol. 24, No. 1, pp. 9–62.
5. Bai, C., Sarkis, J. (2011), "Evaluating supplier development programs with a grey based rough set methodology", *Expert Systems with Applications*.
6. Bayer CropScience AG (2011), *Investing in the future of our children: The Bayer CropScience Child Care Program*, Monheim am Rhein.
7. Biggeri, M., Ferrannini, A. (2013), "Opportunity Gap Analysis: Procedures and Methods for Applying the Capability Approach in Development Initiatives", *Journal of Human Development and Capabilities*, Vol. 15, No. 1, pp. 60–78.
8. Carroll, A.B. (1991), "The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders", *Business Horizons*, July-August, pp. 39–48.
9. Cousins, P.D., Handfield, R.B., Lawson, B., Petersen, K.J. (2006), "Creating supply chain relational capital: The impact of formal and informal socialization processes", *Journal of Operations Management*, Vol. 24, No. 6, pp. 851–863.
10. Dercon, S., Christiaensen, L. (2011), "Consumption risk, technology adoption and poverty traps: Evidence from Ethiopia", *Journal of Development Economics*, Vol. 96, No. 2, pp. 159–173.
11. Drèze, J., Sen, A. (2002), *India: Development and Participation*, Oxford: Oxford University Press.
12. Dries, L., Gorton, M., Urutyan, V., White, J. (2014), "Supply chain relationships, supplier support programmes and stimulating investment: evidence from the Armenian dairy sector", *Supply Chain Management: An International Journal*, Vol. 19, No. 1, pp. 98–107.
13. Farole, T., Winkler, D. (2014), *Does FDI Work for Africa? Assessing Local Spillovers in a World of Global Value Chains*, Washington, D.C.: Economic Premise.
14. Fischer, C. (2013), "Trust and communication in European agri-food chains", *Supply Chain Management: An International Journal*, Vol. 18, No. 2, pp. 208–218.
15. Friedman, M. (1970), *The Social Responsibility of Business Is to Increase Its Profits*, *New York Times Magazine*, New York, pp. 122-126.
16. Giuliani, E., Macchi, C. (2014), "Multinational corporations' economic and human rights impacts on developing countries: a review and research agenda", *Cambridge Journal of Economics*, Vol. 38, No. 2, pp. 479–517.
17. Gorodnichenko, Y., Svejnar, J., Terrell, K. (2013), *When Does FDI Have Positive Spillovers? Evidence from 17 Transition Market Economies*, Bonn: IZA DP.
18. Humphrey, J., Spratt, S., Thorpe, J., Henson, S. (2014), *Understanding and Enhancing the Role of Business in International Development: A Conceptual Framework and Agenda for Research*, IDS Working Paper, 2014th ed. Brighton.

19. Jamali, D. (2010), "The CSR of MNC Subsidiaries in Developing Countries: Global, Local, Substantive or Diluted?", *Journal of Business Ethics*, Vol. 93, No. S2, pp. 181–200.
20. Khan, Z., Nicholson, J.D. (2014), "An investigation of the cross-border supplier development process: Problems and implications in an emerging economy", *International Business Review*, Vol. 23, No. 6, pp. 1212–1222.
21. Lund-Thomsen, P., Lindgreen, A. (2014), "Corporate Social Responsibility in Global Value Chains: Where Are We Now and Where Are We Going?", *Journal of Business Ethics*, Vol. 123, No. 1, pp. 11–22.
22. Maertens, M., Colen, L., Swinnen, J. F. M. (2011), "Globalisation and poverty in Senegal: a worst case scenario?", *European Review of Agricultural Economics*, Vol. 38, No. 1, pp. 31–54.
23. Malik, M. (2014), "Value-Enhancing Capabilities of CSR: A Brief Review of Contemporary Literature", *Journal of Business Ethics*, Vol. 94, No. 1, pp. 1–20.
24. Martinuzzi, A., Krumay, B. (2013), "The Good, the Bad, and the Successful – How Corporate Social Responsibility Leads to Competitive Advantage and Organizational Transformation", *Journal of Change Management*, Vol. 13, No. 4, pp. 424–443.
25. Moczadlo, R. (2013a), "Foreign Direct Investment: A Mean for Poverty Reduction", in Fakultät für Wirtschaft und Recht der Hochschule Pforzheim (Ed.), *50 Jahre - 50 Thesen: Wirtschaftspolitik, Wirtschaftsethik und International Business*, Pforzheim, pp. 51–56.
26. Moczadlo, R. (2013b), "Malnutrition and Poverty - Impacts of Intra-household Distribution", in Moczadlo, R., Jautz, U. and Turkalj, Ž. (Eds.), *Innovativeness as a source of regional competitiveness: 33rd Scientific Symposium; January, 17-18, 2013, Osijek, Croatia, Faculty of Economics, Josip Juraj Strossmayer University, Osijek*, pp. 93–104.
27. Moczadlo, R., Strotmann, H., Volkert, J. (2014), "Health Investments in the Social Supply Chain - The Case of Bayer CropScience", *Atiner Conference Paper Series*, Athens.
28. Moczadlo, R., Volkert, J. (2012), "Wettbewerb und nachhaltige Entwicklung bei globalen Governancelücken" (Competition and sustainable development with global governance gaps), in Enke, H. and Wagner, A. (Eds.), *Zur Zukunft des Wettbewerbs: In memoriam Karl Brand (1923- 2010) und Alfred E. Ott (1929 - 1994)*, Marburg: Metropolis-Verlag, pp. 275–296.
29. Modi, S.B., Mabert, V.A. (2007), "Supplier development: Improving supplier performance through knowledge transfer", *Journal of Operations Management*, Vol. 25, No. 1, pp. 2–64.
30. Raccanello, K., Anand, J. (2009), "Health Expenditure Financing as Incentive Participation in ROSCAs, *Desarrollo y sociedad* (2): 173-206", *Desarrollo y sociedad*, No. 64, pp. 173–206.
31. Risse, T. (2007), "Transnational Actors and World Politics", in Zimmerli, W. C., Richter, K. and Holzinger, M. (Eds.), *Corporate ethics and corporate governance*. Berlin, New York: Springer, pp. 251–286.
32. Robeyns, I. (2005), "The Capability Approach: a theoretical survey", *Journal of Human Development*, Vol. 6, No. 1, pp. 93–117.
33. Rugraff, E., Hansen, M.W. (2011), "Multinational corporations and local firms in emerging economies, An introduction", in Rugraff, E. and Hansen, M.W. (Eds.), *Multinational corporations and local firms in emerging economies*, Amsterdam: Amsterdam University Press, pp. 13–47.
34. Schipmann, C., Qaim, M. (2011), "Supply chain differentiation, contract agriculture, and farmers' marketing preferences: The case of sweet pepper in Thailand", *Food Policy*, Vol. 36, No. 5, pp. 667–677.
35. Sen, A. (2000, c1999), *Development as freedom*, 1st ed., New York: Anchor Books.
36. Sen, A. (2008a), "Capability and Well-Being", in Hausman, D.M. (Ed.), *The philosophy of economics: An anthology*, 3rd ed., New York: Cambridge University Press, pp. 270–293.

37. Sen, A. (2009), *The idea of justice*, London: Penguin.
38. Strotmann, H., Volkert, J. (2013), "Transnational Cooperations: Driving, Ignoring or Violating sustainable Human Development?", in *Fakultät für Wirtschaft und Recht der Hochschule Pforzheim (Ed.), 50 Jahre - 50 Thesen: Wirtschaftspolitik, Wirtschaftsethik und International Business*, Pforzheim, pp. 84–88.
39. United Nations Global Compact (2013), *Global Corporate Sustainability Report 2013*, New York.
40. Volkert, J., Strotmann, H., Moczadlo, R. (2014), *Sustainable Human Development: Corporate Challenges and Potentials - The Case of Bayer CropScience's Cotton Seed Production in Rural Karnataka (India)*, Leipzig: UFZ Discussion Papers.
41. World Health Organization (1995), *Physical status: The use and interpretation of anthropometry report of a WHO Expert Committee*, WHO technical report series, Vol. 854, Geneva: World Health Organization.

(ENDNOTES)

- * The paper was presented at the 35th Symposium Osijek – Pforzheim held at the Faculty of Economics in Osijek 16-17 October 2014
- 1 Google Scholar delivers for the keywords "Milton Friedman+1970+social responsibility of business" around 26,000 results.
- 2 Malik (2014) provides a detailed overview about the empirical findings in her review article.
- 3 A more elaborated description of the background and the project aims can be found in Volkert et al. (2014: 5–7).
- 4 The complexity is actually higher; however, within the scope of this paper we have to restrict our analysis to interdependencies of incomes, debts, health and nutrition. For a more comprehensive analysis see Volkert et al. (2014).

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PROJEKT OGLEDNOG SELA TVRKE BAYER CROPSCIENCE: DOPRINOS KONKURENTNOSTI DOBAVLJAČA POLJOPRIVREDNIH PROIZVODA I LJUDSKOM RAZVOJU

SAŽETAK

Tvrtka Bayer CropScience provodi projekt oglednog sela (Model Village Project - MVP) u ruralnoj Indiji u sklopu upravljanja lancem opskrbe i aktivnosti vezanih uz društvenu odgovornost tvrtke. Projekt oglednog sela obuhvaća radnje vezane uz buduće poslovne pothvate i povećanje konkurentnost kao i filantropske programe. Priprema aktivnosti vezanih za buduće poslovne pothvate ima za cilj stvaranje uvjeta za situaciju u kojoj svi dobivaju. Dugoročno gledano, ovi uvjeti, poput dugoročnih poslovnih odnosa s dobavljačima zasnovanih na povjerenju obiju strana, mogu povećati konkurentnost cijelog opskrbnog lanca i istovremeno unaprijediti ljudski razvoj. Utjecaji na ljudski razvoj procijenjeni su primjenom metode sposobnosti (capability approach) koju je razvio Amartya Sen (2000, c1999.). Projekt oglednog sela pokazuje potencijal koje tvrtke posjeduju u smislu pridonosa ljudskom razvoju na strateškoj osnovi gdje svi dobivaju. Aktivnosti se moraju razlikovati ovisno o uvjetima života i financijskim uvjetima različitih skupina dobavljača. U budućnosti projekt oglednog sela ima za cilj procijeniti mogu li i na koji način multinacionalne kompanije spojiti povećanje konkurentnosti s ljudskim razvojem, pod uvjetom da se potencijalni korporativni rizici za ljudski razvoj mještana također uzmu u obzir.

Ključne riječi: konkurentnost, društveno odgovorno upravljanje opskrbnim lancem, korporativna društvena odgovornost, ljudski razvoj i metoda sposobnosti, ruralna Indija