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The Spirit of Food

-the transfer of environmental values in an agricultural development project

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Abstract

This dissertation concerns an agricultural development project in Zambia, carried out by the Japanese NGO Shumei International, and MBAWOFA, a Zambian women's cooperative. The project teaches the Shumei agricultural technique “Natural Agriculture”, an organic farming method. The purpose of the dissertation is to study the MBAWOFA-Shumei cooperation and evaluate to what extent, and to what effect, environmental values held by Shumei International as an organization has been transferred to the women of MBAWOFA through the teaching of the Natural Agriculture method. The dissertation is a Minor Field Study Report, based on field work conducted in the summer of 2010. The main method used was qualitative interviews. No transfer of environmental values is found, but rather a formulation of a different moral framework for the agricultural method. It is also found that the agricultural development goals of the Zambian government is not always in line with the needs of small-scale farmers, and that the Natural Agriculture method does have some real benefits for small-scale farmers in terms of self-sufficiency. Accordingly, the values justifying use of Natural Agriculture were centred around self-sufficiency. The dissertation also discusses the role of values in agricultural development in general, informed by the findings of the field study, and recommends that values underlying development projects should be sincerely showcased to allow development subjects make informed decisions.

Keywords: Agricultural development, environmental values, value transfer, organic agriculture

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1. Introduction

Most nations of Southern Africa are in a state of chronic food insecurity. Problems of bad governance, bad agricultural policies, sensitive soils and worsening climactic conditions have made sure this part of the world has been left out of the agricultural revolution the rest of the world experienced in the late 20th century. The situation of these countries is the gravest developmental problem of the day, and the ongoing climate change is likely to make the problem even graver.

I saw Alan Imai and Barbara Hachipuka-Banda speak in Klimaforum '09, Copenhagen, December 2009. The speech focused mainly on a project in Zambia carried out by a Japanese spiritual organization called Shumei International and a women's farmer co-operative union. They recounted how the project had developed, and what they thought they could teach others through their story. Their story interested me, because I was previously interested in such projects that seek economic development through self-sustainability. The project consisted of a specific agricultural method that Shumei International had taught the women of the co-operative union, an agricultural method that does not need any chemical inputs, and uses local-variety seed. When I learned that the basis of Shumei's Natural Agriculture was spiritual, I decided that I would like to study it more, and thankfully both Barbara and Alan were enthusiastic to my requests. In the summer of 2010 I travelled to Zambia to study how the project had developed, in what kind of context it was operating and what mark it had left on the participants. This is my version of their story.

Structure and overview

First, the dissertation will be put into the context of human ecology, and thereafter the theoretical framework and manner of investigation will be explained. In the second part, the context of agricultural development and policy in Zambia, as well as some particulars of the project investigated, will be investigated. The third part will showcase the findings of the field work. In the fourth part, the findings will be discussed with a lot of reference to the narratives of the second section. Finally in section five, some conclusions will be made from the discussion.

Statement of purpose

The purpose of this dissertation is to study the Mbabala Women Farmer's Cooperative Union(MBAWOFA)-Shumei cooperation and evaluate to what extent, and to what effect, environmental values held by Shumei International as an organization has been transferred to the women of MBAWOFA through the teaching of the Natural Agriculture method. I define values to be subjectively held but inter-subjectively formulated moral positions, which form the basis for ethical evaluation.

I believe that values, spiritually motivated or otherwise, inform every human activity, as the concept of value cannot be separated from the concept of a goal, and that every action requires a goal. In the

modernist narratives, goals are either taken to be given or argued to be “rational”. However, the rationality of modernist narratives implies instrumentality, so rationality can never be said to be a source of goals or values. Instead, there is need to focus on the cultural and individual origins of values and goals. I furthermore believe that cultural values are relatively inert, which means that they are slow to change once formulated. The reason for this is that cultural values are often reinforced socially through rituals or social and linguistic biases. Also, the practises that cultural values justifies reinforces the salience of the values when they are adhered to. For example the Western values of individuality and independence are reinforced by the one-person-one-vote electoral system, even though that system is justified on those values. For me this means that changed behaviour in a longer perspective than that of dire necessity or temporary disruption must be accompanied by changed values, or a changed instrumental rationality. Environmental values then become central in any attempt at conservation or sustainable development.

My hypothesis was that the environmental values held by MBAWOFA members had not changed much since the introduction of Shumei Natural Agriculture, mostly because of the short time elapsed since the start of the program. I based this prediction on the presumption that cultural and individual values are comparatively inert, and thus diffusion of environmental values through changed agricultural practice should take longer time. The project studied had been running for 5 years.

Relevance of the study for the field of Human Ecology

Human Ecology is the study of the relationship between the individual, culture and nature, and how it difference in different locations and time periods. My study is relevant to the discipline of Human Ecology in numerous ways. Firstly it concentrates on environmental values. Environmental values are the most important way in which culture influences the interpretation of and interaction with the natural of the individual. Secondly, development projects of NGOs from the North like Shumei International, driven by moral considerations in their home countries, influence the way people relate to nature in the South. To understand how values originating in a separate cultural context can have effects on an ecosystem in a different area of the world, one way is to study the way in which environmental values become translated across cultural contexts in the disguise of development "techniques".

Theoretical framework

I prefer to acknowledge, in the spirit of Polanyi, that my investigation is a product of my passions, rather than aspiring for objectivity. My epistemology will be based on a subjective approach to reality. I can see the worth in Lyotard's critique of the "grand narratives", but I feel that a bricolage will essentially benefit from usage of grand narratives, even those who claim universality. A grand narrative will further always have a narrator, interpreting the grand narrative in his formulation, which makes the subject of prime importance. A skilful narrator, my ideal as a social scientist, would be someone who can use different narratives to create a highly functional bricolage, functional in the sense of being understandable for

many others at the same time as being similar to reality. This would be most effectively accomplished through the elimination of the narrative subject, an impossibility, or the honest acknowledgement of the narrator's subjective colouring, which can give the reader a greater grasp of the origins of the narrative, bringing the reader one step closer to the reality behind.

As post-structuralists have, I take the subject not to be identical with the individual, and not to be a stable thing but a process[1]. I recognize that I influence the subjects that are my interviewees in two stages, first by the situation of the "interview", which poses the interviewee in a specific context, and more profoundly through my own interpretation of the information which is conveyed in the interview. I recognize that my presentation of the voices of my interviewees can be a kind of cultural imperialism, in that I by choosing one interpretation excludes another, but my stress on the subjectivity of knowledge makes me believe that this is an inevitability, and this colouring of the information should be showcased, not hidden. I am telling the story of the Zambian farmers, but the reader must know that this is my version of that story, and I have no pretension of telling the truth.

Method and Material

The main method used for this dissertation is qualitative interview. In Zambia I conducted 30 interviews, mostly with MBAWOFA members, concerning agricultural practices and values. I also interviewed other stakeholders in the agricultural development setting, including a state employed agricultural advisor, an alternative NGO, a representative of the National Farmer's Union and an administrator at the Ministry of Cooperatives and Agriculture. A reference group of farmers not involved in the MBAWOFA project was also interviewed. A comparison of these interviews helped me in making my analysis and my conclusions.

My interviews were semi-structured, with varying degrees of structure. In my interviews with MBAWOFA members and the reference farmer group I used a set questionnaire for ease of comparison. I however adapted follow-up questions depending on the replies of my respondent. My interviews with other stakeholders were of less structured kind. I experimented some with letting farmers ask me questions in the end of an interview, so as to establish a more equal relationship between me and my interviewees. I very much enjoyed this practice, and on a few occasions the questions posed to me gave me additional insights. For example one interviewee at the Pemba NAS asked me why Shumei International (SI) did not provide seed for farmers instead for making them produce their own. I did not get any such questions in the Mbabala area, a sign that farmers there have a better understanding of SI objectives, and the values of self-sufficiency has much more salience there. For references to interviews with MBAWOFA or other farmers, a reference number is only given. For interviews with other stakeholders, the name of the organization of their affiliation (MACO, ZNFU) or the title of their office (Extension officer) is provided. The stakeholder interviews were with a high ranking employee at the Ministry of Agriculture and

1 Alvesson (1994) pp.415-16

Cooperatives (MACO) in Lusaka, a middle-ranking local employee of the Zambian National Farmer's Union (ZNFU) in Choma, an extension officer in Choma, an employee at Swedish Cooperative Centre and the main coordinator on the Shumei International side of the MBAWOFA-SI project.

Even though the official language of Zambia is English, I had to use interpreters extensively. Zambia is a multi-ethnic nation, with 72 ethnic groups being officially recognized. Most rural Zambians speak local languages, and only those who have had the opportunity to go to school over many years command the English language well enough for an interview to be feasible without at least the support of an interpreter. Because it is mostly men who get sent to school for a longer time, and most of my respondents were women, I needed interpretation services. The ethnic group that dominates Southern Province is the Tonga people, and Chi-tonga is the dominant language. My interpreters were mainly male member of the youth branch of MBAWOFA. All of them had previous experience of interviewing. In 2008, a student affiliated with SI wrote a master thesis about the MBAWOFA-Shumei cooperation, and he used a participatory research method. He employed many unemployed young people in the area to conduct interviews, for quantitative data collection. Many of my interpreters had participated in this project, and thus had experience of conducting interviews.

I used several different interpreters for my interviews. I think it would have been preferable if I only used one interpreter throughout my field study to ensure that my interpreter always knew what information I wanted to get out of my interviewees. Also, how my interpreters translated my questions seemed to, in some cases, influence the way the interviewees responded to the questions. An example is the question “What is fertilizer and why is it used?”. With one interpreter answers were exclusively about why chemical fertilizers are used, while many interviews where I used different interpreters yielded answers that also concerned the concept of a fertilizer. Not being able to talk Tonga, I was not able to discern whether the question was posed in a grammatically different way, but I do believe that was the case. It would have been better for my field study if I had discussed through my questions with my interpreters more fully.

I have also used literature studies extensively, mostly with the aim of mapping the context of the project studied, which in my study is a very important aspect of the investigation. I did some literature sourcing in Lusaka, where I used the excellent World Bank library. This source has provided me with precious insights into mainstream development thinking on agricultural development in Zambia, as well as most of the contextual quantitative data I use. I have used literature from the Lund University libraries, starting off with authors such as Anderson and Bateson that I have encountered before as course literature, and using these following referenced works I have expanded the literature sources. I have used the British Library of Political Science and Economics mostly for searching for electronic material, and some works on agriculture development. I have also used JSTOR for this purpose. Finally, observations have been an important part of my material. I participated in two Natural Agriculture Shows in Zambia and took notes throughout of things of interest to my investigation. I also visited the

84th National Agricultural and Commercial Show in Lusaka. Observations collected from these instances, combined with the experience of being in Zambia, in the same physical context as the project investigated, has added valuable insights to my investigation. I have also used oral and written sources collected in Zambia, such as conversations with agricultural staff or reading the magazine *The Zambian Farmer* to get a clearer picture of general sentiments within the agricultural industry. I have used articles from *The Zambian Farmer* for factual information regarding recent policy development in Zambia. I have used this source with care, as all my sources, because it obviously speaks for one of the stakeholders within the agricultural complex. *The Zambian Farmer* often speaks, it seems to me, according to the views of the ZNFU, and the opinions I found in discussions with ZNFU staff were very similar to those I found reading *The Zambian Farmer.* It is therefore a good example to show the importance of critical reading of text.

I considered understanding the context being of prime importance, because of the choice of qualitative interviewing as my main method, and in the end this work has come to take up as much time, if not more, than the quantitative interviews themselves.

My method has many limitations. I predicted that much of the answers from the MBAWOFA respondents would be overly positive of the Shumei Natural Agriculture method (SNA), because I would be identified as part of Shumei International, or at least affiliated. This would be a problem, because the farmers would reply more like they think SI or the MBAWOFA leadership wants them to answer than what they really think or what they really do. In practice, this was not a major problem for me. Almost all farmers, even those with high positions within MBAWOFA, had some reservation against SNA, and there was no hesitation to admit that the SNA technique taught was not always followed. The reason for this, I believe, is that SI has in fact no leverage over the MBAWOFA farmers, because of the nature of the project (no monetary transfer), which means that application of SNA is wholly on the terms of the individual farmer, and this has allowed the farmers to pick and choose aspect desirable within the technique, without seeing that selectivity as an action relative to SI.

“Gatekeepers” have been very prominent in my investigation and my relation to them has been very important for my success. The most important gatekeepers in my investigation was Mrs Hachipuka-Banda, the director of MBAWOFA, and the chairman of the youth branch of MBAWOFA. These two have allowed me access to people and resources that made my investigation possible. I have often reflected on my dependent status on these and other individuals, and have tried to accentuate my independent status towards them, but I think at the same time it is important to note that my investigation in all steps of data collection has been through them. I could have taken a more independent stance, but to get the same results that would have required much more funds for transport and accommodation, and time for contact-building. There were some instances of “snowballing”, most notably when interviewing staff within the Ministry of Agriculture and Cooperatives, as I started in Lusaka, talking to staff at the

headquarters of the ministry, and through consultation with them worked my way down the administration to the local level.

Definitions of key terms

D*evelopment*- This essay takes development to be the increased capability of the average person to realize his or her goals, by the way in which she or he chooses. This view is not a materialistic conception of development, but it does not preclude the importance of material improvements, as both material and social resources are recognized to be needed for goals to be fulfilled. Sustainable development is development that does not impinge on the ability of future residents of a locality the capability to realize his or her goals. Importantly, development must not reduce the capability of the ecosystem supporting the development.

Development subject- This term I use to describe the subjects involved in a development project, or being the aim of one. The development subject is very often thought of as a development *object*, but I prefer the active term to highlight the importance of the agency of individuals who are the aim of development projects. In my text I mostly refer to the development subjects as “the MBAWOFA farmers” because these were the development subjects of my particular project, but in the analysis this term is used to move the discussion to a general level.

Environmental values- This term I use to describe norms that relate to the physical environment. This would be contrasted against norms that relate to the social environment, or other human beings and organizations. Spiritual values can be either environmental values (do not kill insects because they are created by God) or social values (do not covet your neighbour's wife because the commandments tell you not to) or neither (Show respect for God as he is your creator and loving father). Modernist (rationalist) values can also be environmental values (do not pollute because that destroys the basis of human life and economic growth) or social (do not break the social contract of the law because we all benefit from it). What differentiates spiritual and modernist values is the “because” part, where spiritual values rely on accountability towards a spiritual subject or context, whereas modernist values rely on rational calculation of cost and benefits of adhering to the norm.

Environmental regime- This term I use to denote a cultural, political or economic system of beliefs, values, rituals and practices that regulate the use of natural resources. A sustainable environmental regime is one that regulates the use of natural resources in such a way as to allow them to be enjoyed in the same fashion also in the future. An environmental conservation regime is one in which values and practices do not produce consequences that decrease the supporting capacity of the ecological system that supports it.

2. Context

Zambia

Zambia is a large, sparsely inhabited and relatively urbanized southern African country. At 752 618 km^2 the area of Zambia is comparable to that of Turkey or Chile, while at a population of around 11,000 000 Zambia is comparable to Greece or Cuba[2]. Zambia is a multi-ethnic country with remarkably high social stability, and since 1991 it is a multi-party democracy.

As one of the poorest countries in the world, with a high incidence of malnutrition, one of the most important development tasks of the nation is to improve the lot for the rural poor. The rural population has much worse access to services and lower incomes than the urban population. Furthermore, the Zambian poor have been recognized by the World Bank as suffering from poverty of social relations[3]. That is, they don't have adequate access to informal networks of assistance. There are about 800.000 small-scale agricultural producer households in Zambia, and in contrast to urban households rural households are often very large, headed by a man with more than one wife[4].

Small-scale farmers in Zambia typically use hand hoes or oxen for tillage, only sparsely use hybrid seeds and chemical fertilizers, and produce mostly rain-fed maize, ground nuts, roots and tubers for own consumption[5]. Land is plentiful in Zambia and in 2005 only 4% of poor small-holders said that lack of land was the main reason for their poverty[6]

Zambia, along with most other sub-Saharan Africa is defying the global trend of greater food security. Southern Africa is the only region in the world where food production levels remained stagnant during the period 1970-2000 and this period has witnessed serious soil fertility depletion[7]. Traditionally the problem for Southern African agriculture has been taken to be inadequate use of fertilizers because of no capital for input purchasing and poor infrastructure[8]. This is because use of chemical fertilizers is very low in sub-Saharan Africa compared to other developing regions of the world, and the Green Revolution has worldwide been accompanied with a large increase in use of chemical fertilizers[9]. More nuanced accounts have recently been identifying soil and water misuse as the basic problems[10]. The World Bank for example, a good indicator of the ruling development paradigm, recognizes that increasing the

2 CIA World Factbook, retrieved August 2010

3 World Bank Report No. 32573-ZM p.iv
4 *Ibid* p.7
5 *Ibid* p.6
6 *Ibid* p.13
7 Sanchez, Pedro (2002) p.2019
8 *Ibid* p.2019
9 Morris, Michael et al. (2007) p.2
10 Lal, Rattan (1987) p.1069

quantity and quality of inputs, or introducing higher yield seeds are not enough: soil management must also be better[11].

Choma district

Choma district is located in Southern Province, Zambia. The town from which the district derives its name, Choma, is a stop on the Lusaka-Livingstone rail road. The area along that rail road is one of the nation's most important economic areas, excelling in agricultural produce. The dominant ethnic group of Choma district is the Tonga people, and Chi-tonga is the most spoken language. The topography of Choma district is dominated by ultilsols and oxisols. Ultisols and oxisols together with related alfisols occupy 25 percent of African landscape and carry very low humidity and nutrition value, and are highly susceptible to erosion[12]. Both ultisols and oxisols are dependent on continuous nutrient recycling through vegetation to contain nutritions, as they are concentrated on the surface layer[13]. Because of climactic conditions with rainfalls growing increasingly sparse, timing is very important for effective agriculture. A farmer growing maize using conventional methods in Choma district must use inputs such as chemical fertilizers at the right time, just before the first rain, in order to have a profitable harvest, because otherwise the rainfall will not be enough for the crop to develop properly[14].

Rural infrastructure

Development of rural infrastructure in Zambia is highly contrasted between central and peripheral areas, commercial farmers dominating the centre and small-scale subsistence farmers dominating in the periphery. This pattern was established in the colonial era, as infrastructure development and land distribution was heavily biased towards the interest of white agricultural settlers[15]. In Southern Province the centre is the area around the Lusaka-Livingstone rail road, along which all major towns are located, and a tarred road follows the same route, connecting the towns to Lusaka and the national economy. At the end of the colonial era, the land along the Lusaka-Livingstone rail road had the most advanced system of commercial agriculture, because of a preference shown by white settlers to settle in the areas, and thus centre-periphery difference was greater here than anywhere in the country, as the rural infrastructure was only limited to the narrow strip of commercial farms[16]. The centre-periphery division in Zambia also has a legal aspect. Land tenure in Zambia is divided between the State lands and the customary tenure lands. The area of the centre region in Zambia roughly corresponds to the State Lands, which is governed by the formal land registry system. The peripheral region, which roughly corresponds to 93% of Zambian lands, is governed by the customary land tenure are[17]. Under the customary land

11 Lal, Rattan (1987) p.1069
12 *Ibid* p.1070
13 Mongia, A.D. and A.K. Bandyopadhyay (1993) p.44
14 Interview ZNFU
15 Wanmali, Sudhir and Yassir Islam (1997) p.259
16 Momba, Jotham C. (1989) p.331
17 Van Loenen, Sebastian (1999)

tenure system, land is leased from the community to individuals, through the authority of a local chief[18]. In Choma district the State Lands area closely follows the stretch of the Lusaka-Livingstone road and rail road. In recent years, a lot of investments in rural infrastructure have been done, and the MBAWOFA area is being connected to Choma via a tarred road, which greatly improves communication for farmers, especially those living close to the tarred road. A recent study of the MBAWOFA project area found that farmers living close to the newly constructed road had a better economic position because of better access to markets[19].

Maize

Maize is technically a vegetable but most often, and especially so in sub-Saharan Africa where it is an important staple, culturally considered a grain[20]. Among grains it is the most productive per labour and land unit input[21]. Maize arrived in Africa after year 1500[22], and was initially adopted as a vegetable addition to an existing complex cropping structure that included numerous different integrated crops rotated, with managed fires regulating soil fertility. This system of agriculture was well-adapted to Africa's capricious weather conditions and vulnerable soils, because it retained a lot of biomass permanently. First in the 20th century did maize become a large-scale mono-crop staple, the function it mainly plays in contemporary Zambian agriculture[23]. Maize is the staple of Zambian agriculture, and Zambia is the country in the world where maize constitutes the largest portion of calorific input of the diet of an average person, at about 58%[24]. Maize is usually eaten ground into meal (known as mealie meal) then boiled into a porridge, called *nshima*.

Zambia is a relatively urbanized country by Southern African standards. This combined with a strong cultural preference to eat maize, and little opportunity to import foodstuff, has made maize a highly political crop. With the legacy of the planned economy of the Kaunda regime 1964-1991, the state is perceived in the cities as responsible for keeping the price of maize low, and is perceived in the rural areas to be responsible for the provision of maize inputs and markets. In past times, state officials in some areas even visited farmers every year, providing them with seed and inputs for the coming growing season. The same official would return after harvest and purchase the farmer's surplus maize. The convenience of the old system makes many farmers nostalgic of the benefits of the planned economy of the Kaunda period.

18 Smith, Robert (2004) p.1644
19 Koyama (2009) p.35

20 McCann, James (2001) p.249
21 *Ibid* p.249
22 *Ibid* p.250
23 *Ibid* p.256
24 *Ibid* p.247

There are different channels available for the farmer to get inputs for maize cultivation. A common way of acquiring inputs is through farmer cooperatives or other farmer organizations, who can provide chemical fertilizers at subsidized prices, acting as government agents. This is the most common motivator for farmers joining cooperatives, and many cooperatives focus exclusively on providing inputs for members with government help. These cooperatives go under the derogatory name "fertilizer cooperatives", and their passivity and reluctance to challenge status quo has led to NGOs such as Swedish Cooperation Centre abandoning farmer cooperatives as partners in Zambia all together[25]. The parastatal supply of agricultural inputs is moreover very inefficient, and the timing of input access through this channel is very unreliable, which is a major constraint.

The system of state subsidization of maize inputs and control of maize prices is an institutional remnant of the Kaunda regime's planned agricultural economic policy. Today that system consists of the Farmer Input Support Programme (FSP), and the Strategic Food Reserve (SFR) . The SFR is operated by the Food Reserve Agency (FRA). After independence in 1964 the Zambian government tightly regulated maize prices, at huge costs. In 1986 the cost of price and input subsidies for maize constituted 17% of total government expenditures[26]. Attempts were made in the early 90s to remove maize subsidies, but when increased prices for maize led to food riots in the urban Copperbelt province these efforts were abandoned. In the run-up to the 1991 election IMF suspended assistance to Zambia because of failure from the Zambian side to cancel state subsidization of maize, which cost $500,000 every day. This is believed to have contributed to the success of the opposition[27]. When the new government implemented reforms, maize production fell by half by next year, also because of drought, which prompted the government to resume heavy involvement in the maize sector[28].

In 2006 the Farmer Input Support Programme (FSP) took 50% of the Ministry of Agriculture and Cooperatives' (MACO) budget, and the Strategic Food Reserve programme (SFR) was a further 13%[29]. MACO also administers a smaller programme called the Food Security Programme, which exclusively turns to vulnerable farmers, who get a small amount of inputs for free[30]. A 2002/3 study showed that 8% of small-scale farmers received FSP fertilizer, and a further 16% bought fertilizer themselves from private sector channels. The rest used no off-farm sourced fertilizers. However most FSP recipients were relatively well-off small scale farmers who could have afforded buying private sector fertilizer themselves[31]. Moreover this state intervention has been declared as producing negative returns, as the added value of the maize harvest was in fact smaller than government expenditure subsidizing maize[32].

25 Interview Swedish Cooperative Centre
26 Chuuba in the Zambian Farmers, 2010
27 Geisler, Gisela (1992) p.113
28 Chuuba in the Zambian Farmers, 2010
29 World Bank report no 32573-ZM p.22
30 Interview MACO
31 Morris, Michael et al. (2007) p.117
32 *Ibid* p.118

The FSP outlets have drawn a lot of criticism because its supply is unpredictable, and often inputs arrive at outlets too late for them to be efficiently used by farmers. Moreover the system is criticized for discouraging entrepreneurship[33].

The other way of acquiring maize inputs is through private sector agents. The other main alternative for input supply is to go through the private market. This alternative is more costly, but supply is more stable. Commercial farmers exclusively use this channel, and availability of private suppliers follows closely the spread of commercial farmers. In the periphery private suppliers of fertilizers find themselves in an unfavourable position, as small-scale farmers much prefer getting FSP inputs. Prices of inputs are subject to severe price fluctuations. There is very little production of agricultural inputs in Zambia, most is imported. The Zambian economy is heavily dependent on copper exports for foreign currency, and as the copper commodity market is a volatile one, Zambian exchange rates fluctuate heavily[34].

Hybrid seeds are supplied by private enterprises, mostly located in core areas. In 2005, 59% of Zambian farmers cultivated local variant maize, and 19% cultivated hybrid variants. For the poorest 20% of Zambian farmers, these numbers were 54% and 11% respectively[35]. So small-holders use relatively more local variant maize. Maize has decreased in portion of total value of crop output from two fifths in mid 90s to a quarter in the mid 00s, because of the problems facing farmers marketing maize and rising costs of inputs, most importantly chemical fertilizer[36]. To keep prices under control the government requires export permits for maize to be exported. Zambian maize is however not competitive compared to South African or Malawian maize, as production costs are relatively higher[37]. Cromwell (1996) concludes that due to the diverse ecological settings of farmers in Southern African countries, a diversity of genetic material is needed for maize production to be productive across different locations. Therefore governmental support for a few variants of hybrid maize is very problematic, and will fail to empower the broad peasantry[38].

The SFR works by putting an official maize floor price and buying a limited amount of maize at that price at over 600 buying depots. These depots buy maize from local small-scale farmers[39]. In 2010 that price is K1300 per kg, or $0.33[40]. The private sector often deviates from the SFR price, in June 2010 in Eastern Province one buyer was buying maize at K700 ($0.14) per kg , and another at K780 ($0.16) per kg[41].

33 Interview ZNFU and Swedish Cooperative Centre
34 Interview ZNFU
35 World Bank report no 32573-ZM p.14
36 *Ibid* p.15
37 Hamusibi in the Zambian Farmer, 2010
38 Cromwell p.130

39 Chuuba in the Zambian Farmers, 2010
40 1 ZMK = 0.000205761 USD www.xe.com 13 Sept 2010

41 The Zambian Farmer, 2010 p.14

The year of my field study, 2010, saw the greatest harvest in Zambian history. However this is a mixed blessing because farmers have no possibilities of storing crops, and have poor access to market information. This means that during years of good harvest peripheral farmers get less than ever for their surplus maize[42]. In such a year market access is crucial for the small-scale farmer. Some farmers will not even find any buyer for their maize, as private buyers focus on easy to reach areas, as transport costs are much lower[43].

Government farmer extension services

Because the agricultural methods of small-scale farmers are of prime importance for Zambia to reach its development goals, advising small-scale farmers on agricultural techniques is a major function of the government. This is however not as simple as a government providing a resource for its poor, because choice of agricultural method will always be underpinned by values and goals, which are not universal in nature. World Bank studies have shown that a lot of advice given to poor farmers in sub-Saharan African countries discourage use of resources readily available to the farmers themselves without purchasing inputs, like local variant seed saved from previous harvest, manure from own livestock or compost. The reason for this has been found to be that the economic rationale of agricultural policies and advice has been state-centric and hardly formulated with the well-being of poor farmers as a priority[44]. For example government policy is often in conflict with the interest of small-scale producers of local seed. The reason for this is that government policy normally aims at maximization of yield per unit land, whereas local varieties are usually grown with food-security aspects such as drought-resistance or pest resistance in mind[45]. Scherr (1994) identifies that agricultural policy to promote sustainability in Southern Africa must differentiate between the core agricultural production areas, where according to here market forces must be seen as the appropriate governing mechanism, and vulnerable ecologically fragile areas[46]. In vulnerable ecologically fragile areas, she identifies that markets function unevenly, and therefore investments are needed to improve local market performance. She identifies that external inputs are generally insecure and technically inappropriate, so new, locally sourced technologies are needed[47].

MACO is the governmental organ which provides farmers with agricultural and technical know-how. The Agricultural Advisory Services Branch of the Department of Agriculture is responsible for providing farmer extension services. This service is provided through officers called Camp officers. There are

42 Interview ZNFU
43 Hamusibi in the Zambian Farmer, 2010
44 Morris, Michael et al. (2007) p.11
45 Neuendorf, Ortwin (1995)
46 Scherr (1994) pp. 41-43

47 *Ibid* p.43

currently around 1700 camp officers on the MACO payroll, spread out over Zambia's 72 districts[48]. The camp officers are the "front-line soldiers"[49] of MACO, and any kind of interaction with farmers, in their capacity of being farmers, initiated by NGOs, should go through a Camp officer. MACO discourages NGOs dealing directly with farmers. They prefer to keep a monopoly on dissemination of agricultural techniques, so that suitable techniques can be chosen by more qualified staff at the ministry.

Techniques and practices advocated and taught by Camp officers is decided centrally in Lusaka, with recommendations from all camp officers, periodically submitted, being the basis of the decision. In the Lusaka MACO office, several so-called "packages" are developed, each supposed to cater for a specific type of farmer depending on such things as material status, problems encountered or climactic zone. So the model is supposedly bottom-top-down. There is an official way for stakeholders to influence this process. In every district, NGOs are invited to join the District Development Coordination Committee, where they can submit proposals on specific agricultural techniques being advocated by Camp officers. Advice from Camp officers is supposed to be free[50].

Zambian National Farmer's Union and the Conservation Farming Unit

Zambia National Farmers' Union (ZNFU) is a union of diverse stakeholders in the agricultural sector, mainly farmers and farmer cooperatives, but also private sector actors such as millers or input providing companies. The conservation farming unit (CFU) of the ZNFU advocates conservation farming through peer-to-peer education. Instructors are sent out to the country-side and have teaching seminars, and participants become teachers themselves. The target is said to be mainly small-scale farmers, but when I visit the CFU stand at the National Agriculture Show, what receives most attention is big tractor-pulled minimum-tillage machines. The CFU teaches crop rotation, minimum-tillage farming and organic fertilizer use. However pesticides are advocated within the CFU framework because they are "cost-effective, quick and clean"[51.] MACO cooperates with CFU, and some other NGOs in spreading CF practices. CFU however, doesn't go through Camp officers to spread CF, favouring peer-to-peer education, and therefore specific arrangements have been made with MACO to ensure that the two organizations don't compete for farmers' attention. Because of this arrangement with MACO, CFU has become the voice of mainstream conservation farming in Zambia. Their narrative is such: Traditional agriculture provided safeguards against soil erosion through leaf, mulch and canopy covers, nutritient addition through ash, pest control through polycropping and improvement of soil structure by plant roots. Tillage agriculture has increased the vulnerability of soil[52]. Conservation farming in Zambia

48 Interview MAVO
49 *Ibid*
50 *Ibid*
51 Interview ZNFU
52 Lal, Rattan (1987) p.1070

involves: dry season land preparation using minimum tillage, crop residue retention, seed and fertilizer application by fixed planting stations and nitrogen fixing crop rotation and fallows[53].

Shumei International

Shumei International is an international non-governmental organization, with observer status to the UN since 2004[54]. It is a non-religious branch of the broader spiritual movement Shumei Shinjikai[55], based in Japan with offices and programs across the world. Shumei follows the teachings of Mokichi Okada, a Japanese mystic active in the first half of the 20th century. Shumei doesn't consider itself a religion in the UN definition of the word, because it does not consider itself as being an exclusive source of spiritual knowledge for members, and the individuals engaged in Shumei activities may be adherents of other religious denominations[56].

Shumei has three main areas of activities. The first is Johrei, a kind of spiritual healing. The second is promotion of Natural Agriculture[57], a set of guidelines of how crops should be grown for best possible health effect. The third is appreciation of art and culture. So Shumei International's goals which it seeks by advocating the use of SNA can be described as spiritual, philosophic and philanthropic.

What distinguished SNA from most other agricultural doctrines is the non-use of fertilizers. This includes organic fertilizers such as cattle manure. The reason for this practice is a belief that nature is perfect, and the use of fertilizers is a reflection of human greed. As ecosystems were able to produce adequate food for humans for generations before the introduction of fertilizers, fertilizers are believed to be superfluous and negative, especially so chemical variants. SNA allows for use of organic compost. However even then, conceptually, the compost isn't supposed to be addition of nutrients to crops, but to preserve moisture, softness and warmth for crops to germinate and grow[58].

In Shumei belief, food has more value to the person than just the nutritional addition it gives. For life, a human needs energy from the three spirits of fire, water and earth. The spirit of fire is collected by the heart beating, the spirit of water is absorbed by the lung breathing, and the spirit of earth is provided to the human through foodstuff, entering through the mouth. This process is considered to be separate from the gastronomic process[59]. So foodstuff is important in a spiritual sense for Shumei believers, which is one of the motivators for use of SNA.

53 World Bank report no 36573-ZM p.16
54 Interview SI
55 From here on called Shumei for convenience
56 Interview SI
57 From here on called SNA (Shumei Natural Agriculture)
58 Interview SI
59 *Ibid*

Mbabala Women Farmer's Cooperative Union (MBAWOFA)

MBAWOFA is a women's farmer cooperative union, started in 2003 with the aim of making the lives of women in the Mbabala area easier. The founding members identified agriculture as the domain of females, and aimed at improving the conditions under which farmers operate in the Mbabala river area. The cooperative union is divided in 7 different societies, centred in different locations. The societies are further split in clubs, which contain a number of individuals, often neighbours, friends or relatives.

In 2006, the cooperation with SI was commenced. Barbara Hachipuka-Banda had before becoming involved in MBAWOFA travelled to Japan on a youth leadership forum held by SI, and had there encountered SNA. When in the MBAWOFA setting, Barbara identified that SNA could bring possibilities of economic betterment for the MBAWOFA members, and the cooperative union sent a request to SI for help with starting a SNA project. SI sent Alan Imai to Zambia, who developed a teaching pack specifically for the Mbabala setting, and initiated a sourcing of local maize varieties. In 2006 maize seed was collected and stored locally, and when planting season approached all MBAWOFA members received an amount of local variety seed, and received SNA training through a peer-to-peer method. Alan Imai subsequently left the area, but visits occasionally to monitor the progress of the project. There is no SI representative permanently residing in the area. SI does provide funds for some of the workings of the cooperative union, and in 2008 when the crop failed badly SI brought in relief maize, but these monetary transactions are not of central importance in the project. The cooperation between MBAWOFA and Shumei International is conceptualized by SI as a holistic development project. It addresses ecological concerns, food security and economic concerns through the agricultural methods, and social and cultural concerns through the NAS, with both these elements reinforcing each other[60].

60 *Ibid*

3. Field study

I here present the result of my field study, which mostly consisted of interviews.

Results of reference group

In order to get a better understanding of the context of farming in Choma district, I decided to do interviews with farmers who were non-members of MBAWOFA. The first round of reference groups interviews were carried out in Choma, with five farmers there to sell maize being interviewed. All were male, and small-scale farmers. Their descriptions of this year's harvest ranged from poor to better than usual. One interviewee described himself as being poor, the other classified themselves as average, or "not bad".

When asked what would improve their farming, Two responded that removing the uncertainty of relying on oxen for labour would help them, the problem being that oxen often get sick when their labour is needed. One said diversification into soy beans would be the most beneficial step, as this crop was described as "easier". Two said more fertilizers were needed, one needed better quality of seed. Those who experienced a bad harvest explained this by referring to lack of rainfall, bad timing of access to fertilizers through cooperative or too little fertilizers applied. When asked "What makes a crop grow?" all replied fertilizers, 2 mentioning manure as a poorer substitute for chemical fertilizers. All considered purchasing and using fertilizers to be profitable, but 3 reserved this statement against price fluctuations, and one on rainfall being adequate. When asked why they use fertilizers, tradition and experience were invoked as evidence to the propriety of doing this. All used the conventional method of adding fertilizers after weeding, just after germination. What I gathered from this part of my interviews, and which was confirmed by almost all my later interviews, was that fertilizer is considered an essential part of successful agriculture by Zambian small scale farmers. The problems with inefficiency of parastatal input supply channels was also identified.

All agreed that pests were negative and preferably eradicated. 1 said that pests could "teach" the farmer to crop rotate, which in the long run would enrich the soil. All others could find no positive aspect of pests. All considered pesticide purchase and use as profitable practice, but 2 expressed concerns that pesticides could be dangerous to health upon application. All used pesticides when need arose, or would do so if they had money for it. All had sought the advice of camp officers, and most reported having consulted and received advice that helped them with problems such as pest infestations, bacterial infestations, and bad harvest. Advice was typically to use a specific kind of pesticide or to increase use of fertilizers. All seemed to have a high regard for the knowledge of camp officers, though one expressed that as it came with a price, he would often have to cut back in inputs because of seeking camp officer advice (this interviewee exhibited good knowledge of conventional farming methods)

Results of MBAWOFA interviews

My interviews with MBAWOFA members was mostly geared at understanding their thinking about chemical and organic fertilizers and different kind of maize seed, but my questions also dealt with other crops and general thoughts about agriculture.

This year's harvest was described as average to good, with responses being generally more positive than those of the reference group. Problems with this year's harvest included flooding, causing corn to rot in the fields, and drought. When asked how they could have improved their harvest this year many different answers came up. One woman suggested having a bigger vegetable garden. One farmer named better farming skills, one using crop rotation. Two farmers said more fertilizer use would have been most important in improving this year's harvest, and two farmers said better use of SNA.

The MBAWOFA farmers were asked how they could improve their harvest in coming years. The replies can be divided into 3 categories. First those that envision improved farming operations in ways unconnected to fertilizer use. Second we have those who want to apply mainstream conservation farming methods. Thirdly we have those replies in which improvements are in line with SNA.

Among those who wanted to improve their farming in ways unconnected to fertilizer use, one woman wanted to double seed input, but she said she could not afford buying the extra seed. Because SNA seed has no purchasing cost, most of the envisioned increased by this woman would be in conventional agriculture. The same woman said in connection to another question that she would like to increase cultivated area, but that this would mean that her own cattle manure would be insufficient. Many answers concerned the labour aspect of agriculture, as was common in the reference group. One man wanted more ploughs. A single woman wanted oxen to save money, as she had to buy labour for tilling. One wanted to buy livestock for diversification. One wanted better types of seed. One would plant earlier.

Two farmers suggested changes that can be described as mainstream conservation farming. One woman said: "The system of crop rotation improves the soil. All along I used to use fertilizer. Now I don't use fertilizer and don't get a lot of problems from the yield I got. It's more profitable than using fertilizer and makes the soil better."[61] Another woman wanted to use more manure, compost and animal. These farmers, and other farmers, described many benefits they had reaped from conservation farming techniques they had learned within MBAWOFA, or more commonly from a Camp officer. The impression I got from these answers was that at the time of the study, a lot, probably most, of the information geared at small-scale farmers in Choma district was about conservation farming. The farmers were very positive about real benefits from conservation farming. However, as the Camp officer I interviewed in Choma said, conservation farming makes a lot of "noise" but little "action", and worried that

61 Interview 22

conservation farming projects lead to gains in the short run but only to certain level, after which conservation farming keeps down the possibilities of development[62].

Many, but far from all, focused their answer about improvement on use of SNA. One woman said increasing her agricultural knowledge would be most important to increase yield in the future. This woman emphasized that her harvest was getting better every year by using SNA. Another woman said "We want to use more natural agriculture maize. Because it saves money"[63]This woman wanted to use more SNA maize as a proportion of total maize production, as this would save her a lot of money from inputs. One woman named making more compost manure. Another wanted to use compost manure instead of cattle manure. This was the most clearly statement of SNA preference in reply to the question of future improvements that I got. In my questions about agricultural improvement, I saw that MBAWOFA members, more than the reference group, were focused on conservation farming techniques in order to improve their farming. However, these were not only SNA conservation farming techniques, and the farmers did not really distinguish between SNA conservation farming and conventional conservation farming, even though they acknowledged that at times they had gotten conflicting information from the two sources, as this conversation displays:

> -Could you describe the difference [between growing SNA and conventional maize]?
>
> -In both, if the land is good the harvest is good. And if the land is bad the harvest is bad with both ways. What is needed is to love what you have planted. The management is important to the plant.
>
> -In both cases?
>
> -Yes.
>
> -But what is the difference?
>
> -Nothing apart from crop rotation. The fields for natural agriculture are separate, for crop rotation we use one land rotating natural agriculture crops, for chemicals we rotate crops who need chemicals on the same land.

A couple of questions dealt with fertilizers and their use. I wanted to see if the members of MBAWOFA had changed their view of fertilizers in any way from mainstream thinking, and if they had adopted any of the Shumei values on fertilizer use. However, most were very positive towards fertilizers. When asked "What is fertilizers?" the most common description was that it is a chemical used for enhancing plant growth, or "Fertilizer is food for a crop"[64]. "I need it but it is too expensive."[65] was a common type of answer, and illustrates well the way the members of MBAWOFA look at fertilizers. They see that their yields would be greater using fertilizers, and most think of fertilizers as being cost efficient. However very

62 Interview Extension Officer

63 Interview 24
64 Interview 22
65 Interview 14

few say that they use fertilizers every year, some say they never use it, quoting the high costs as the problem. A typical view on fertilizers:

> -Fertilizer is a chemical which helps a plant to grow and we use it to grow crops faster.
>
> -Do you use fertilizers?
>
> -Yes I do, every year.
>
> -Why do you use it?
>
> -I use it because I want my crops to grow
>
> -Does a farmer profit from buying and using fertilizers.
>
> -Yes, I get a little bit of profit when I sell. Every year.[66]

Most named some difficulty with fertilizers, mostly about access and pricing. "Fertilizers are very expensive so there is no profit, even after you use fertilizers there is a problem, so I am very excited about what is happening here[67]."[68]. One farmer got subsidized maize seed. Most farmers thought it was profitable to buy and use fertilizers, but most said this was on the condition of good rainfall, proper tools or proper management. Some farmers commented on the sustainability of using fertilizers. One woman explained why she used fertilizers, but saying that she believed this practice to be unsustainable in the long run:

> -Our land, new land you can harvest without fertilizer, and old land you have harvested for a number of years you need to [use fertilizer]… When there's no fertilizer you have bad harvesting
>
> -Why?
>
> -The land becomes poor.
>
> -Do you know why?
>
> -Why the land is poor?
>
> -Why it is becoming poor.
>
> -I don't know. Because… *laughs* I have a small land, a new field. I don't apply fertilizer. Then I harvest. But next season I plant maize, but other season I don't harvest. Then I apply fertilizer. Then again I can harvest. Fertilizer is to better the land again. Some people say that it kills the land, but once we don't have fertilizer- no good germination. But this time, we are improving *slowly* because of nature farming. Because fertilizer is getting expensive every year. Goes higher and higher pricing. So we won't be able to buy fertilizer as we go on. So we need to learn more and use more nature farming, [because if not] there will be no harvesting. So it will be difficult.[69]

66 Interview 21
67 The speaker is referring to the Shumei-MBAWOFA project
68 Interview 22
69 Interview 17

Only one farmer had a definitely negative view on fertilizers. This was a widow. She was the only farmer who said she would not use fertilizers if they were provided for free.

> -I am a widow. I don't use fertilizers. I just use natural farming.
>
> -But why would someone use fertilizers?
>
> -They use it to get better yield.
>
> -Does a farmer profit from buying and using fertilizers?
>
> -Depends on the rainfall, if there is a flood or drought it is not profitable.
>
> -But if it was for free it would always be good to use it?
>
> -Personally I would definitely not stop using natural agriculture. It would be necessary to be given fertilizer every year, and there can be no continuity to getting fertilizers for free. At the end of the day it one day it will stop.[70]

All other farmers would use fertilizers if they were provided for free. A male farmer said that he thought chemical fertilizers were sustainable, because that way soil fertility is guaranteed. So the result of my questions about fertilizers was undoubtedly that Shumei values had very low penetration into the MBAWOFA members' values about fertilizers.

I asked the farmers about their views on pests and pesticides. All farmers in MBAWOFA agreed that pests were exclusively negative, in contrasts to the reference group where there was one interviewee who could imagine a possible pedagogical role of pests. Only a few reported using chemical pesticides, and a few more said they would but it's too expensive. Some said use of pesticides is dangerous for human and plant health. Some said they use traditional local pesticides, such as the tree *myongoro*, which can be ground into a powder and applied on affected plants, or *mururoe*, another traditional organic pesticide.

There was one interesting answer that recognized ecological dangers of pesticide use, using a religious statement to justify her concern for insects: "Some part good some part bad. The disadvantage is that those natural things are being destroyed, the land will be destroyed, even some insects that are made by God will be destroyed."[71] This didn't stop her from considering pesticides a good thing on the whole. A thoroughly positive view of pesticides was common, even when negative aspects were taken into consideration:

> -They are good! They will stop the pests.
>
> -Do you use pesticides?
>
> -No.
>
> -Why?

70 Interview 18
71 Interview 16

> -Sometimes, but I have no proof yet, they say the soil becomes poor after using pesticides. I could not prove that. But it is good also, it protects the plants from damage.

So in the case of pesticides, again it seems Shumei values had very low penetration.

All farmers were asked to explain what SNA meant. All descriptions of SNA contained the element of not using chemical fertilizers. Five added than no chemicals at all are to be used with SNA. Only three mentioned seed saving and using local seed variants. However, all said, at a different question, that they practised seed saving. A standard reply was the natural agriculture was good because it reduces input expenditure. Resistance and resilience were also named as positive aspects of SNA,

> We plant local seed which can [be] harvested by using manure only, not applying any fertilizer. Once you put manure on local seed you can have good harvest again. These chemicals, some of us, we don't know the effect if you eat them, but nature farming don't have any chemicals.
>
> If you eat a lot of food you will have no stomach pain. But with chemical food then they will give you so much ache and even diarrhea. Because some people treat maize [with chemicals] before harvesting and someone eats it, it brings bad stuff to the stomach. Even vegetables [are] sprayed with chemicals you use for cotton.[72]

One mentioned the importance of fertility:

> -What is natural agriculture?
>
> -Where you apply natural fertilizer, like manure and compost.
>
> -Why do you practice it?
>
> -It keeps the fertility of the soil for a much longer time than normal agriculture.[73]

Interestingly this was a man, and the only other farmer to stress the important of improvement of soil fertility was a man, saying when describing his natural maize production: “It has improved. It has also made my soil more fertile. My soil is getting better using natural agriculture.”[74]. Other long-term aspects of SNA was observed. All but one of the farmers who grew natural maize had improved their yields from the first year of growing natural maize. The man who didn’t report this said his harvests were “more or less the same”. Eight farmers said their natural maize yields were improving because of better knowledge of how to do it, or through experience applying the method. Most important, it seems, is the timing of planting, weeding and preparing land, as natural maize generally takes longer time to mature than hybrid variants or fields where fertilizers are applied. The proportion of the farmers' maize cultivation that was being done using SNA varied from none to all, with three (female respondents) using only SNA. The biggest problem with SNA is that the production of compost manure requires a lot of

72 Interview 17
73 Interview 28
74 Interview 19

work: “Natural agriculture is easy if you have a lot of labour. Because, preparing manure… weeding… then putting manure is heavier than carrying a bad of fertilizer. But it is not very difficult.” [75]

I also asked about seed saving. 8 farmers said nothing would make them fail to save seed, 4 said a very bad year could force them to eat all grain needed for seed saving. I asked them how they felt about MBAWOFA members failing to save seed. All said they felt bad, some saying that the club as a whole would suffer, because they together have a seed bank. Many said they would offer help: “We go and help her. We give information and we even give seed.” [76]. Finally I asked them concerning how they used the channels available to them for information on agricultural techniques. Only one didn’t consult with his demo farmer, the others could give examples of asking their demo farmers about seed saving, spacing or compost manure making. Most also said they consulted camp officers for help. The examples given of such occurrences were mostly on conservation farming techniques, like ripping, crop rotation or making plant stations.

I asked women who grew both maize and sweet potatoes who decides how they grow the respective crops. About sweet potato, the women all answered that they by themselves decide entirely about cultivation. About maize, all women either co-decided with their spouses, or their husband decided everything, except for one woman who was single.

Evidence from the Natural Agriculture Shows

The inspiration for the Natural Agricultural Show comes from the national Agricultural and Commercial show held in Lusaka every year. The Agricultural show in Lusaka coincides with Farmer’s day, which is a national holiday, allowing people from outside Lusaka who wish to attend the show to come in. It’s an event that stretches over 5 days in which every major player in Zambian agriculture has a stand. This year’s Agricultural show was the 84th. It was a massive event with fireworks, brass orchestras and mass coordinated dances. Mostly agricultural suppliers and buyers and government departments have stands, and input suppliers typically showcase crops grown using their products. There are also other displayers than agricultural ones. Because it is such a popular even it has taken the character of a massive open air market. The word “sustainable development” is sported on everything from washing detergents to refrigerators. People come to the show mainly to make deals, as stores who come to display products tend to sell them cheaper at the market than in stores. When hearing about the Agricultural and Commercial show, Alan Imai decided that there would be a Natural Agricultural show in the MBAWOFA area[77].

75 Interview 17
76 Interview 22
77 Interview Alan

The NAS is similar to the Lusaka show in some ways. It is really a popular party. Before the start of the NAS, there were few other excuses for people to get together in the countryside except for weddings and funerals. The NAS has grown in popularity every year and has drawn attention even outside the MBAWOFA area: in 2010 a group of young people from nearby Pemba, in Pemba District, came to compete in the football tournament and to study NAS, as they plan to organize their own similar event. It is also in some ways like a market, as a couple of sellers sell plastic toys, clothes or candy in a specially designated area of the show grounds, but this activity is rather limited. The show grounds is a quadratic area, surrounded on three sides by stands. On one side is the commercial area, and on two sides are stands displaying the best produce of the member clubs of MBAWOFA. Here members and non-members alike are invited to come and see produce grown using SNA, or household items produced locally. In the middle is a small scene where there is always some dance or some kind of performance. Every member is given the chance to perform and there is always some interest show, albeit varied amounts.

A couple of stands are occupied by NGOs active in the area, such as International Development Enterprise Zambia, showcasing a hand-driven water pump and seed preservation techniques. There was also Mbabala Youth Resource Centre, teaching how to set up beehives using mostly local material, to a total cost of K75,000. Children's drawings are on display in an effort to involve children, who otherwise have no activity catering for them. The teaching material that was used by Alan Imai to introduce SNA is also on display at the show, but receives scant attention.

The plays performed are typically about lives changed after the formation of MBAWOFA and application of SNA, but this is not the only theme. One play depicted one group growing crops using chemical fertilizers, and another using SNA. There is an argument between them but when the SNA side shows their superior crops the other side is convinced. Songs are often connected to SNA, or Shumei, and offerings like maize, ground nuts or vegetables are often handed over to Alan Imai or Barbara during song numbers. Parallel to performances there are football and netball games on adjacent fields. This is where the men mostly hang out during the show. Prices are given for winning teams in netball and football competitions, best play performed, best song or dance number and best produce display. The judges are local Ministry of Community Development staff.

Some interviews were done with the women displaying produce. They often said that maize was the display product that they were the most proud of. The reasons for that feeling were that natural maize was hard to grow. Many have failed growing natural maize or faced bad yields in the first years of growing it. The women who had succeeded in getting good big maize cobs felt that they had accomplished something by growing it. However, only two reported having exchanged information about maize. Most information exchange reported concerned vegetable growing without using fertilizers, jam production of preparation of foodstuff. Some clubs showed how local organic pesticides or insect

repellents could be grown and used, such as integrating Marigold plants. These said they gave seeds for free to anyone who wanted to try starting using Marigold.

I had the opportunity to see the first attempt at arranging a NAS in a new area, the Pemba area, towards the end of a trip. The community there had requested help from MBAWOFA and SI to start their own SNAP. The community already had an annual sports event, so the NAS was added on to this. There was relatively little interest in displays or exchanging agricultural knowledge, and much focus on the sports. The Pemba show was in its first year and the Pemba members have little experience with SNA, so this should not come as a surprise. Still, this experience made me realize that the Mbabala show is a serious accomplishment, and shows how important SNAP has become for the lives of the MBAWOFA women.

4. Analysis

Selection of agricultural method

Before analysing my findings on the transfer of environmental values in the MBAWOFA-SI project, I must qualify the importance of this discussion by showing how important I think environmental values are for the broader problem of agricultural development. As has already been recognized, the state of agriculture in southern Africa is a problem of dire magnitude. I have also illustrated that in Zambia, the flow of information to peasants about agricultural practise is jealously guarded by MACO. Why is this so? What is there to protect?

To answer these questions, the questions of agricultural development studies must be examined. The goal of development studies is to achieve development. What development is is not a simple question, and the answer to this basic question will colour any observation or recommendation made relating to development. However, in many instances, most even, the meaning of development is not even stated. The effect of this is that the meaning and effect of development projects and policies will be fractured and discourse will often differ from reality.

The particular aspect of agricultural development that I am looking at in my case study, is the selection of agricultural method. The importance of this choice for the development question is obvious. However, it is equally obvious that any evaluation of a choice of agricultural method will be based on evaluating that particular method against the goal of development. And as development is such an illusive yet taken to be obvious concept, the choice of agricultural method is not an obvious one but a battleground for different perspectives. The modernist way of looking at selection of agricultural methods within development studies is by a rational choice model. Farming households are theorized to act upon unstated, (being pre supposedly "rational") goals, rationally evaluating the pros and cons of different methods. This is a model borrowed from economic science. A good example of this presupposition is pronounced by Cromwell, who writes: "Farm households' attitude towards agricultural innovations /.../ is determined by relative factor scarcities, household production objectives, and resource allocation mechanisms in the wider economy."[78]. With the failure of conventional agricultural development research and policy in solving the southern African food crisis, there are good grounds of scrutinizing this simplistic view. In fact, small-scale farmers do not have the same preferences when selecting crop varieties as other producer groups. This is because small-scale farmers rely on crops for more functions than more well-endowed farmers, who can afford to buy inputs for those other functions. Also, small-scale farmers have to be more risk-averse in their selection of seed variety. As a result attributes not normally taken to be of prime importance becomes very important for seed choice. Cromwell gives as example: "low labour requirements; pest and disease resistance; particular processing, cooking and taste

78 Cromwell (1996) p.15

qualities; storability; and good yield of non-grain biomass[79]. Other more obscure factors can have a decisive role in farmers' selection of seed: Cromwell reports that average length travelled to source maize seed in Zambia is 2-6 km, indicating that proximity is an important factor of choice[80].

I have earlier illustrated that in Zambia the development policy of the state has been oriented towards a goal differing from the goals of the individual small-scale farmers of the country, because the framework the development problem is posed in is different for the two actors. For MACO, food security means enough food on the market every year to allow the urban population to feed itself at a reasonable cost. For the small-scale farmer, food security means being able to produce enough to support one's own family every year. As noted, government policies have often discouraged farmers from using all available local resources, as it is preferable to MACO that the Zambian farmers are as integrated in and dependent on the food and agricultural input markets as possible.

This essay takes development to be the increased capability of the average person to realize his or her goals, by the way in which she or he chooses. This view is not a materialistic conception of development, but it does not preclude the importance of material improvements, as both material and social resources are recognized to be needed for goals to be fulfilled. This definition stands closer to the view point of the Zambian farmer than that of MACO. Furthermore MACO is part of a political establishment that has other goals more highly regarded than agricultural development. Morgan and Solarz notes that in 1987, even though agriculture contributed around 33% of the GDP of sub-Saharan countries, the average state expenditure on agriculture was 7% of the budget[81]. Moreover, many authors agree that sub-Saharan governments have used the food market for short-term political gain rather than long-term development gain[82]. It is easy to see how Zambia fits into this pattern. So it seems modernist agricultural development policy and the politicization of agricultural development has disempowered the Zambian farmer by putting her agricultural development concerns within a framework whose starting point and instrumentality are of a different kind than hers.

The transfer of values

The point of starkest conflict between mainstream Zambian environmental values and Shumei environmental values is in my opinion on the function and role of chemical fertilizers. Therefore, I will start my analysis with examining whether Shumei environmental values had any penetration into the life of the MBAWOFA farmers. The reference interviews and interviews with the ZNFU representative, and study of other material showed that fertilizers are seen very favourably in Zambia, as an essential tool for

79 Cromwell (1996) p.17

80 *Ibid* p.19

81 Morgan, William B and Jerzy A. Solarz (1994) p.65

82 *Ibid* p.65

agriculture. Lack of fertilizers and bad timing of supply of fertilizers are perceived by mainstream culture as the main problems facing Zambian agriculture. Fertilizers are used because this is what camp officers, tradition and experience tells brings good yields. This is understandable considering the soil conditions in Zambia. Long use of tillage and chemical fertilizer techniques, with fluctuating access to inputs, have put soils in bad condition, which means some method of nitrogen addition or fixation is necessary for good yields. Moreover many farmers use hybrid seeds that require and benefit more from use of fertilizers than conventional seed.

By contrast, non-use of fertilizers is arguably the most important aspect of SNA. SNAP has been encouraging farmers not to use chemical fertilizers, and has provided many justifications for this, functional (saving on input-costs, more resilience to drought and pests, no health hazard) and spiritual/moral (nature is perfect, the three spirits). The non-use of fertilizers is used by many farmers, but it doesn't seem to have acquired any moral status. It seems the functional reasons have predominated. Only one respondent thought of fertilizer use as unsustainable practice, and then the focus was on social sustainability. The other respondent farmers who practise non-use of fertilizers do this because it is a cheaper alternative to the superior mode of using fertilizers.

Seed saving of local seed is the first step in SNA and means big savings annually for a farmer. Even though being contrary to the culture of the conventional, this practice has gained firm footing among the members of MBAWOFA, and the majority seem firmly emotionally dedicated to continuing the practice. Seed saving has of course always been practised by the farmers in the area, but SNA introduced many refinements to the seed saving practises. Farmers had little knowledge of anti-contamination procedures, and most just saved seed from the biggest cobs of the harvest. As local seed was often mixed with hybrid seeds, most often hybrid maize was saved. Hybrid seed is unsuitable to seed saving, as the genetic material is unsuited for uncontrolled reproduction. Thus, even though hybrid seeds give bigger cobs, the seed saved often gives low yields or no yield at all. SNA introduced a sharp separation between hybrid and local variant maize seed, which in fact is preferable both for local variant seed cultivation and hybrid seed recycling. An additional effect of this separation is that the farmers become enabled to compare the performance of hybrid seeds and local variant seed over a longer time. SNA has also encouraged farmers to use land cultivated with SNA methods exclusively with those methods, in order to prove the positive effects of SNA on soil fertility. The practice of proper seed saving is justified in the Shumei context by the intrinsic value of unaltered nature, with local variant seed being less altered by humans than hybrid seed. When applied in the MBAWOFA context however as we have seen, it was used instrumentally, because there was an identified economic benefit. Also a kind of social value was connected to this practice, as seed saving made the community self-sufficient. A practice justified by environmental values in the Shumei context became justified by social values in the MBAWOFA context. Probably, environmental values can develop from the sustained use of this practice, especially if environmental benefits become apparent.

Why was the seed saving aspect of SNA more readily accepted than the non-use of fertilizers? The use of fertilizer is much more than the use of hybrid seeds culturally and politically favoured in Zambia. The market for fertilizer is moreover recognized as a central problem to Zambian agriculture. The use of SNA seems to have convinced many farmers of the benefits of not relying on the fertilizer market, but not of the benefits of not using fertilizers at all. Again, the values that seem to have gained hold in the MBAWOFA context are of primarily social nature.

The reference group and members alike had thoroughly negative views on pests, finding no positive aspects of them. Non-use of pesticides is a part of SNA and part of the education pack, with functional (less hazardous, less expensive) and spiritual (nature is perfect) justifications. Both groups generally said they used chemical pesticides or would if they had the money. The MBAWOFA respondents seemed to use traditional pesticides more, and they exchanged information about traditional pesticides and pest-prevention intercropping at the NAS. The motivational focus of the increased use of organic pesticides was, as with the fertilizers, very focused on self-sufficiency. So again the values justifying changed practice seem to be social values.

A large part of Zambia's agricultural woes can be attributed to the capricious climactic environment[83]. Diversity of crops and strategies are needed to counter this adversity. For example in the case of seed selection, hybrid or improved variants could have some use, if local variants are also used. Wholesale adoption of SNA moral aspects wouldn't permit this. As Anderson establishes, an ethical code of environmental management must be developed from practice, and not the other way around[84]. Cultural values or practices, when superimposed on a social and environmental framework not tuned in to them, will often produce unexpected and unwanted effects. In the MBAWOFA-SI project, SI has been sensitive to this problematic. The Shumei language, symbols and values that function to justify environmental conservation have only sparsely been introduced, and play a minor role in the MBAWOFA culture. What has been in focus in the transfer from SI to MBAWOFA, has been practice. An important resource needed in order to be a critical development subject is access to information. The NAS has in the MBAWOFA-SI project connected farmers who are in similar economic circumstances, and put them in a context where the main topic of information exchange is agriculture. Even though the information exchange at the NAS was not all that much about maize, the information exchange seemed to expand the range of crops available for food and other uses for the participants. The display farmers also said that they shared seed for free with interested people, and in this way they are helping each other to achieve self-sufficiency, to diversify their crop base and income, and how to decrease input costs. The NAS, by bringing people together in an environment that encourages information exchanges, greatly increases the social capital of the MBAWOFA members, and this should mean increased resilience in the community.

83 Zambian report to FAO Commission on Genetic Resources for Food and Agriculture Sept 2008 p.44
84 Anderson (1996) p.169

The place of values and spirituality in agricultural development

One of the questions that have been of most difficulty for me is the question whether SI *should* be actively spreading its own environmental values. The ways of approaching this problem is many, and the answer always depends on the moral priorities one considers.

One problematic at work is that of ideological imperialism. Portraying one's own ideology as superior is, it seems, a human need, but often leads to conflict and oppression. The world we live in today, where white men in the west enjoy most of the resources consumed on earth, is sustained by the ideology imposed by white men over the rest of the world during centuries of brutal colonization. It is therefore a moral obligation of any relationship between the developed world and the developing that the developed world does not attempt to fully impose its own world view on the developing, as this would obviously reinforce the problem of unequal development.

However, I do believe that ideology is an integral part of agency, and that the two can not be fully divided. Ignoring the motive that is the source of action, removes all parties to that action away from an integral understanding of that action. In the case of the SI-MBAWOFA project, that motive is spirituality. In an article that describes the "spirituality taboo" in development literature and practice, Ver Beek (2000) identifies the negative consequences of ignoring the spirituality of both development subjects and development actors. He states that withholding a view of reality that you believe to be superior is an arrogant position. He says: "People's spirituality is viewed as weak and to be protected, in the way that quaint traditions should be protected, but with the silent conviction that science and development ultimately will allow people to leave behind their spiritual and 'unscientific' beliefs. "[85]. Among the negative consequences coming from the spirituality taboo, Ver Beek laments the most that the development subjects are bereaved of the possibility to perform a discussion between their own traditional world view and the modern world view that motivates the development project that target them. This discussion has the possibility to provide an important understanding that will truly empower the people of the South. Ver Beek concludes that both the development researcher and the development worker must disclose his own ideological biases before commencing his task, to allow the development subjects to engage with him in a meaningful way. So according to this view, SI should be more instructive about its own values, and display how important they are to the way they do agriculture. Such an approach, that still shows adequate respect to the ideology of the Zambians, something I am convinced SI is able to do, would make the project a more meaningful exercise for the Zambian farmers.

Habermas's concepts of lifeworld and system can be used to explain this position as well. Habermas divides the social world into lifeworld and system. The lifeworld is the communicative aspect of the social world. This is the cultural context that we relate to and negotiate during communicative actions. In

85 Ver Beek, Kurt Alan (2000) p.39

a way highly resemblant to the concept of culture, the lifeworld gets reinforced every time a communicative action produces an agreement between two subjects[86]. It is these shared agreements upon which we can build the communicative basis for critical thinking and advancement of human knowing. Even though the concepts of the lifeworld is not correct, they are necessary for communicative action, and we can only change a lifeworld in piecemeal, like language[87]. According to Habermas, actions that fall under the categories of “power” and “money” are conditioned into pre-existing patterns of instrumentality. This hides the selection of instrumentality, which itself is a construct that feeds into the interest of those who have a lot of power and money. In this way, in these domains, the actions though apparently self-helping and rational are in fact feeding into an unequal system, because the ideology that motivates it is hidden. For Habermas this aspect of system made critical thinking much less available to the subject here than in the lifeworld[88]. The way in which this discussion relates to my study, is that the development of critical thinking can only be accomplished in a setting where the selection of instrumentality is openly showcased. A such setting requires moral and spiritual values that motivates selection of instrumentality to be openly showcased. Thus, SI should be promoting its spiritual values, as this will allow the MBAWOFA members to evaluate the SNAP in a critical way.

There is another way of approaching the appropriateness of religion in environmental regimes that Anderson showcases. Anderson portrays religion as a cultural system that can "sell" a moral code by embedding it[89]. He views religions as not as much creating a defined standard as supplying emotional involvement to motivate moral behaviour. World religions, in this view, are truly minimalist communities, with a common justification for morality rather than a common practically elaborated morality. Religion, in this light, must fall into the realm of the lifeworld, as it can provide a framework for critical thinking and discussion. In my case study, however, the different parties are not part of a common spiritual minimalist moral community. Therefore it would be a stretch to apply this perspective on the importance of religion in my case study.

Social sustainability

Any discussion on moral environmental regimes must include a social sustainability aspect, especially so in a development setting. A socially sustainable environmental regime will build on such relations that seasonal, cyclical or occasional shocks will not strain social relations providing life sustaining services, to the point that they cease to function. If the social relations humans usually rely on for life support fail them, they will strive to find alternative ways to sustain themselves. In such circumstances culturally and politically prescribed behaviour, often aimed at preserving natural resources, are most easily broken. The

86 Finlayson (2005) p.51-53

87 *Ibid* p.53

88 *Ibid* (2005) p.55

89 Anderson (1996) p.162

classic example of this is cultivation of marginal lands in areas of chronic famine. So when social relations sustaining life breaks down, moral prescriptions on resource use are insufficient to guarantee sustainability.

The situation in Choma district for small-scale farmers is socially unsustainable. The conventional way of cultivating maize, the all-important staple in Zambian diet, required purchasing fertilizers and hybrid seeds every year, and potentially pesticides should there be need. This requires cash that is to be obtained from selling maize output. However this source of cash is unreliable because of highly fluctuating maize price and the deep problems of marketing for farmers. Moreover the prices of inputs are highly variable. The informal networks of assistance that exist for small-scale farmers are so strained they can provide little relief. It is also ecologically unsustainable. The farmers recognize that land when cultivated using conventional methods becomes poor. The soil conditions and climactic conditions of Zambia conspire to make the soil vulnerable when left without vegetation cover. Even though land is abundant in Zambia, that is not an ecologically sustainable state of being.

SNA has the potential of eliminating the importance of the price of inputs for maize cultivation, by sourcing all inputs locally. This would make the farmer in a more socially sustainable position, because the insecure social relation between him and the fertilizer providing state and private enterprises become unimportant. Moreover the ecological sustainability of his agriculture will rise. If SNA is done together with minimum tillage the problems of soil erosion, acidity and nutrition leaching will be alleviated. If SNA would be practised instrumentally in Choma district, this would go a long way to solving the acute problems of social sustainability. Of course there must be other measures such as diversification of crops and other economic activities, to ensure that households still have access to cash. But proper use of SNA should ensure food security for the farmers, which is the basic requisite for social sustainability. If the moral aspects of SNA were also adopted this would go a long way to supporting ecological sustainability in the long run.

5. Conclusion

My hypothesis was that the environmental values held by MBAWOFA members had not changed much since the introduction of Shumei Natural Agriculture, mostly because of the short time elapsed since the start of the program. My findings also indicated that the environmental values of SI have not had any significant penetration into the value system of the MBAWOFA members. Nevertheless, the MBAWOFA-SI project has been significant for the lives of the MBAWOFA members. They have been provided with a platform of exchange of agricultural knowledge, with the other actors on that scene being people in the same situation as them. This will allow them to engage with the question of selection of agricultural method in a more critical way. The MBAWOFA members have also been provided with an alternative to the market-dependent agricultural method most stakeholders in the Zambian agricultural setting wants them to participate in. Even though few see this alternative as wholly preferable, it is still a resource and a framework of reference for the farmers to evaluate agricultural methods.

The way the project was carried out has allowed the farmers of MBAWOFA to develop their own goals and values of SNAP, and these values have been mostly social in nature, focusing on the value of self-sufficiency. The moral space for this to happen was provided by SI because SI put a lot of focus on the local ownership of the project. SNAP has improved the social sustainability of the farmers in the MBAWOFA area and with the apparently strong social values that have developed in the project, reinforced by use of SNA and the annual NAS, the project has a lot of potential.

There are some arguments to be made for a more prominent position of values in development projects. The values of SI are spiritual in nature, and it can seem at first that focusing on the moral origin of the agricultural methods championed by the organization would be a case of ideological imperialism. This could bereave the development subjects with rationality as a basis for self-interested evaluation of agricultural methods. However, as a reading of Habermas and Anderson reveals, values and spirituality is the basis of critical evaluation. Also, any development project rests on a normative base, a set of values and goals with development, with often the voice of the government or mighty donors overpowering the voice of the weak targets of development efforts. Hiding this aspect or pretending that it does not exist is very problematic, especially in the context of agricultural development in Southern Africa, where differing values and goals with development between the peasantry and governments have often worked against the interest of the small-scale farmers.

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Table of abbreviations

CFU	Conservation Farming Unit
FAO	Food and agriculture Organization
FSP	Farmer Input Support Program
NAS	Natural Agriculture Show
NGO	Non-governmental organization
MACO	Ministry of Agriculture and Cooperatives
MBAWOFA	Mbabala Women's Farmer Cooperative Union
SNAP	Shumei Natural Agriculture Project
SNA	Shumei Natural Agriculture
SFR	Strategic Food Reserve
SI	Shumei International
UN	United Nations
ZNFU	Zambian National Farmers' Union