

Daum, Thomas

**Working Paper**

## Of bulls and bulbs: Aspirations and perceptions of rural youth in Zambia

ZEF Working Paper Series, No. 171

**Provided in Cooperation with:**

Zentrum für Entwicklungsforschung / Center for Development Research (ZEF), University of Bonn

*Suggested Citation:* Daum, Thomas (2018) : Of bulls and bulbs: Aspirations and perceptions of rural youth in Zambia, ZEF Working Paper Series, No. 171, University of Bonn, Center for Development Research (ZEF), Bonn

This Version is available at:

<https://hdl.handle.net/10419/187477>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



**zef**

Center for  
Development Research  
University of Bonn



**UNIVERSITY OF  
HOHENHEIM**

# Working Paper 171

THOMAS DAUM

Of Bulls and Bulbs

Aspirations and perceptions of rural youth in Zambia



ISSN 1864-6638

Bonn, July 2018



ZEF Working Paper Series, ISSN 1864-6638

Center for Development Research, University of Bonn

Editors: Christian Borgemeister, Joachim von Braun, Manfred Denich, Till Stellmacher and  
Eva Youkhana

### Author's address

Thomas Daum

Hans-Ruthenberg-Institute of Agricultural Science in the Tropics

University of Hohenheim

Wollgrasweg

4370599 Stuttgart, Germany

+49 (0)711 45923630

Thomas.Daum@uni-hohenheim.de

# **Of Bulls and Bulbs**

**Aspirations and perceptions of rural youth in Zambia**

Thomas Daum



## Abstract

During the last years, policymakers and development-practitioners focused heavily on making farming more attractive for the rural youth in Africa. To reach this goal, different actions are proposed, often emphasizing the need for modern farming and information and communication technologies. These proposed actions are mostly based on anecdotes and prior policy beliefs, but not on empirical evidence since scientists have largely neglected this topic. This paper aims to contribute to a deeper understanding of the aspirations and perceptions of young people and therefore to the formulation of policy actions that fit these aspirations. Two research methods were used to explore the aspirations and perceptions of rural youth: interviews and drawing exercises, a novel method in this context that allows for both a qualification and quantification of aspirations. The results show that rural youth have very diverse opinions and aspirations. In contrast to the literature, young people were found to reflect carefully about the positive and negative sides of farming, rural and urban life, and of foreign countries. Imagining their future farm, young people mostly envisioned using draught animals and having electricity (which explaining the reference to bulls and bulbs in the title of this paper). In addition, the young people aspired to greater farm diversity and applying more fertilizer. Few respondents mentioned the use of modern technologies such as tractors, and none mentioned ICTs. While it is difficult to generalize our results, the findings suggest that policymakers and development-practitioners need to pay more attention to the actual aspirations of the rural youth to avoid well-intended but misguided policies.

**Keywords:** Aspirations; rural youth; evidence-based policy making; youth bulge; rural-urban-migration; agricultural development

**JEL classifications:** Q00, Q10, O30, O33, D91

## **Acknowledgements**

I am especially grateful to all young people participating in the study, for their patience and many insightful moments, and to the head masters of the schools who helped organize the drawing exercises. I am also grateful for financial support from the “Program of Accompanying Research for Agricultural Innovation”, which is funded by the German Federal Ministry of Economic Cooperation and Development. Thanks to Regina Birner for her valuable comments and her excitement about the topic.

The study was funded by the “Program of Accompanying Research for Agricultural Innovation” (PARI), which is funded by the German Federal Ministry of Economic Cooperation and Development (BMZ).

'Conflict of Interest' Statement: The author declared that he has no conflict of interest.

# 1 Introduction

In the international development community, there is a strong narrative that “*the rural youth*” in developing countries find farming unattractive and therefore opt out of farming when possible (Leavy & Hossain, 2014; Sumberg et al., 2017).<sup>1</sup> This perception has sparked much concern recently with growing evidence of a *youth bulge* in numerous developing countries, many of whom are located in Africa (Ahmed, 2016; Evoh, 2012; Sommers, 2011). Based on the projected need to generate millions of new employment and income opportunities and the perceived bad reputation of agriculture, the need to make farming more absorptive and attractive for young people has received much attention. To make farming more attractive, policymakers and development actors have formulated different propositions. The propositions range from promoting modern technologies such as tractors (e.g., Mrema et al., 2008; O’Leary, 2017; Sims et al., 2016), information and communication technologies (CTA, 2016; FAO, 2017; FARA, 2017; Irungu et al., 2015), and secure access to land (Bezu & Holden, 2014; Jayne et al., 2014; White, 2012) to seeing farming as a business (FAO, 2014). Some propositions go beyond the nature of farming and emphasize the need for the setup of rural areas to change, for example, through infrastructure development (Sumberg et al., 2017; Porter et al., 2010; White, 2012).

Yet, while the first part of the “*youth finds farming unattractive*” narrative is echoed in studies suggesting resentment of the youth against farming as such or under current conditions (Leavy & Hossain, 2014; White, 2012), the second part of the narrative on the proposed actions has received limited scientific attention (Anyidoho et al., 2012; Sumberg et al., 2012). The limited evidence base was already highlighted by the World Development Report 2007 on “Development and the Next Generation” (World Bank, 2006). The report is one of the few exemptions that give a voice to (rural) youth, but its underlying data dates back to the early 2000s; since then, the world has witnessed new trends such as the spread of mobile phones. More recently, Leavy and Hossain (2014) highlighted the role of status aspirations and risks for the formulation of perceptions about farming. In Ghana, Sumberg et al. (2017) found that young people have very diverse perceptions of farming and rural life, some of which are not reflected by the prevailing orthodoxies on how to make farming more attractive. These noteworthy exemptions contribute to a slowly growing literature but cannot hide the lack of empirical evidence on the aspirations of the rural youth in Africa.<sup>2</sup>

Given these research gaps, the proposed actions to make farming more attractive for young people are rarely based on empirical evidence. Instead, stakeholders rely on narratives and storylines based on anecdotes (Sumberg et al., 2012). These narratives and storylines may be purposely or accidentally selected based on prior ideas and policy beliefs (Anyidoho et al., 2012; Birner & Mockshell, 2015). To put it differently: while some propositions to make farming more attractive may echo the views of the youth, the lack of empirical research has created the opportunity to misuse the youth. Today, we often find sentences starting with “*the youth need*” and ending with anything. In some cases this may be done to promote specific agendas. For example, the MasterCard Foundation claims that the youth want access to rural finance (Alemayehu & van der Drift, 2015) and machinery-conglomerate AGCO (2017) argues that farming needs to be more mechanized.

In addition to the nature of farming, the aspirations and future behaviours of the rural youth have also been discussed with regard to migration – both within countries and abroad. It has been argued that young people are *pushed* away from agriculture, for example, because of lacking access to land. Besides being *pushed*, they are said to be *pulled* away from agriculture, by being attracted to urban life and life abroad. While the connotation of an automatic, *push-and-pull*-based flow of the youth to one direction (away from agriculture) seems questionable, young people are likely to formulate their

---

<sup>1</sup> This is not a new phenomenon. Already in the 1960s and 1970s researchers discussed the extent to which young people aspire urban over rural life (see Leavy & Hossain, 2014).

<sup>2</sup> This is in contrast to other continents. For example, there are several studies on the youth in India (e.g., Bhanuv, 2006; Hari et al., 2013)



aspirations and perceptions based on the attractiveness of agriculture vis-à-vis urban areas and foreign countries. In brief, the youth reflects and manoeuvres according to their geographical, socio-economic and policy *opportunity space* – a term coined by Sumberg and Okali (2013), Sumberg et al. (2012) and Leavy and Smith (2010). Based on the nature of this space and the ability to use the space (depending on knowledge and skills, social networks, gender and risk-attitudes), the youth forms their aspirations and perceptions.

This paper aims at contributing to a deeper understanding of the aspirations and perceptions of young people in developing countries, particular in rural Africa. The paper argues that a better understanding of the youth is key to formulate policies and programmes that better fit with the actual aspirations and perceptions of the youth - and thus make farming truly attractive. In brief, the paper aims at providing evidence for a highly contested debate by giving *the rural youth* a voice. To do so the paper explores different aspects that are effecting their aspirations and perceptions. How do young people think about rural areas? How do they think about farming and their *future farm*? What do they think about urban life and the life abroad? To answer these questions, in-depth interviews with 53 young people from rural areas of the Eastern Province of Zambia were conducted. In addition to this, a novel method was applied in this context: drawing exercises, a technique that can be used as a qualitative, and potentially also as a quantitative research tool. To organise the drawing exercises, students in two rural schools were asked to freely draw about different topics, for example, how they envision their *future farm*. The exercise yielded 115 drawings.

The paper proceeds as follows. Section 2, describes the research design. It first discusses existing methods to explore aspirations and then introduces the combination of methods that was used in this research, namely interviews and the drawing exercises. The results are presented in section 3, distilling four major themes with regard to the aspiration of young people. The results are discussed in section 4 and section 5 concludes the work.

## 2 Research design and methods

This study aims at exploring the aspirations of young people. The Oxford English Dictionary defines aspiration as ‘a hope or ambition to achieve something’<sup>3</sup>. In the past years, a growing body of literature has focused on the effects of aspirations on actual achievements with regard to rural development – but with no specific focus on youth. These studies mostly found positive relations between aspirations and actual achievements (Beaman et al., 2012; Bernard & Taffesse, 2014; Bernard et al., 2015). Yet, how to best measure aspirations has been continuously debated and different research groups have used different proxies to do so. For example, Beaman et al. (2012) used four questions to measure the level of aspirations: desired educational achievements, desired age of marriage, preferred occupation at the age of 25, and whether the parents wished for the child to become chief councillor (*pradhan*). Other researchers have used indicators based on different methods such as depression scales (Macours & Vakis, 2009), the locus of control – a measure of whether own success/failure is perceived to depend on oneself or others (Bernard et al., 2011), income aspirations (Knight & Gunatilaka, 2012) and feelings about the future and goals (Bernard & Taffesse, 2014).

All of these approaches have been criticized. For example, the questions on preferred occupation used by Beaman et al. (2012) are ambiguous as respondents stating farmer as their preferred occupation may have highly diverging aspirations. Some of the critiques have been addressed. For example, the concern about anchoring, wording and scale dependence biases (Bernard & Taffesse, 2014) were addressed by two studies (Bernard & Taffesse, 2014 in Ethiopia and Kosec et al., 2014 in Pakistan). These studies used visual scales to measure different dimension of aspirations (income, wealth, education and social status), taking into account average levels in the communities of the respondents. Asking respondents first about reasonable minimum and maximum levels of each dimension helped the authors to reduce anchoring effects.

All of the above mentioned methods have been highly useful to derive proxies for levels of aspirations. This has allowed researchers to link aspirations with actual outcome variables (such as technology adoption). While this has led to important insights (i.e. on the importance of aspirations for technology adoption), using such indicator-based approaches provides limited information about the nature of the aspirations themselves. With regard to the above mentioned definition of aspirations from the Oxford English Dictionary (as ‘a hope or ambition to achieve something’), these approaches provide proxies for the strengths of a hope or ambition, but no evidence on what people aspire and how they want to achieve this (*the something*). From the perspective of policymakers, such quantitative assessments of aspirations may thus lack directions for guidance. For example, levels of aspirations may show policymakers that young people aim for a high level of wealth but this provides no guidance on the aspired pathways of agricultural development and what agriculture needs to look like to be attractive. Also, it is questionable to which extent the above described methods can be used to assess the aspirations of young people. For example, it is questionable whether young respondents can realistically assess the minimum and maximum level of income and wealth in their communities (as done by Bernard & Taffesse, 2014 and Kosec et al., 2014).

We therefore propose a novel method to explore aspirations in this context: the use of future-oriented drawings exercises (see 2.1.). Drawing exercises can be used both as qualitative *and* quantitative research tools, thereby generating insights into what young people aspire and how much they aspire (levels). We organized four drawing exercises and obtained 115 drawings. We complemented this method with 53 qualitative in-depth interviews (see 2.2.). Both methods were applied in different districts of the Eastern Province of rural Zambia (see 2.3.). Combining these two methods allowed us to triangulate the collected data and to obtain a much broader perspective than each of the single methods would have allowed for on its own (see 2.4.).

---

<sup>3</sup> <https://en.oxforddictionaries.com/definition/aspiration>

## 2.1 Drawings

To facilitate the exploration of the young people's aspirations, we organized four drawing exercises. The use of drawings has long been used by psychologists, for example, to talk with traumatized children in post-war situations (Mitchell et al., 2011). More recently, the use of drawings has received some attention by social scientists, again with a strong focus on exploring delicate topics, for example to give a voice to victims of violence, to homeless children and to AIDS-orphans (DiCarlo et al., 2000; Malindi & Theron, 2011; Laren, 2011). The studies use different techniques; for example to better understand how children see themselves, they were asked to draw themselves in the rain (Glewwe et al., 2017).<sup>4</sup> The use of drawings is not constrained to delicate topics, however, and drawings may also be used to explore aspiration of young people. For example Chamber et al. (2018) have used drawings to study which careers children aspire.

Using drawing exercises instead of face to face interviews and focus group discussions has several advantages, some of which may be more pronounced in rural areas of developing countries. In Zambia, due to cultural norms and education, both children and teenagers have a lot of respect of older people as well as authorities and may not feel free to express themselves in an interview with a researcher or in a focus group together with several other children. Facing an entirely blank page with only one objective (to draw freely on a certain topic) allows respondents to draw and think slowly about aspirations and dreams – without being guard-railed by questions and/or intimidated by the presence of the researchers, which may be particularly relevant for shy children (see also Chambers et al., 2018; Einarsdottir et al., 2009). Einarsdottir et al. (2009) note the difference in answers when children are asked to draw as compared to when they are asked in interviews. While Einarsdottir focus on children aged 4–6 years, their findings may still be relevant for older children and youth. In addition, using drawing exercises makes it possible to “access those elusive hard-to-put-into-words aspects of knowledge that might otherwise remain hidden or ignored” (Weber, 2008, p. 44). The potential of visual methods to help unearth overlooked perspectives has also been discovered by participatory action researchers using photo-voice and participatory videos (Shaw, 2017). Shaw (2017) even argues that such visual methods empower participants. Lastly, drawings are a “visible proof of research findings” (Mitchell et al., 2011).

We organized the drawing exercises in collaboration with primary schools in Eastern Zambia (see 2.3.). The school children were given sheets of papers and coloured-pencils. They were allowed to choose one or more of the following three topics:

- 1) How do you imagine your future farm/your own farm in 10 years' time?
- 2) How do you imagine town/city life?
- 3) How do you imagine the life in other countries?

To explain these topics, *no* examples were provided, so as to avoid influencing the children. Instead, children were encouraged to think and draw freely whatever came to their mind. We emphasized that there was no “right” or “wrong” in this exercise. The children were also reassured that they did not need to worry about the quality of the drawings and that the focus would be on the content only. Children were then given two hours to complete their drawings. 63 students drew topic 1; 40 students picked topic 2; and 12 students choose topic 3. After the completion of the tasks, we conducted individual follow-up interviews to clarify the meaning and origin of some aspects of the drawings and ask additional background questions related to the drawings, some of which went beyond the individual drawing. Given the large quantity of drawings, we could only do follow-up interviews with a

---

<sup>4</sup> These drawings are assessed based on, for example, whether the children drew themselves using an umbrella, smiling, whether the sun was still shining etc. (see Glewwe et al., 2017).

selection of the children. For the analyses, we coded the drawings into different themes (see also Table 2).

## **2.2 Interviews**

In total, 53 young people were interviewed. The interviews were structured around four main themes. First, respondents were asked questions about how they perceive farming. They were also asked to reflect on how to address the challenges of farming. The second theme focused on rural areas. In the third topic, they were asked to reflect about city life. For the fourth theme, they were asked different question about their perceptions of foreign countries. Questions were asked without prompting any answers, but respondents were encouraged to further explain their views. To encourage reflections and obtain clear statements, respondents were asked follow-up-questions like: “You told us about the good and bad sides of villages and towns. In ten years, where would you rather want to life? Why?”

## **2.3 Study Sites and Participants**

For the study, we worked with young people in the Eastern Province in Zambia. The agricultural sector of the Eastern Province is dominated by smallholder farmers. On average, farmers cultivate 2.3 ha of land (IAPRI, 2016). Owned or hired tractors are used by 1 % of the households; 57 % use animal traction; and the remaining farm households use hand tools (IAPRI, 2016). The use of fertilizers is common but few households have access to herbicides and improved seeds (IAPRI, 2016). Both land and labour productivity are low. As a result, the average household income is low and 90 % of the rural population live on less than 1.25 US\$/day (IAPRI, 2016). In 2010, the net primary school attendance rate was 55 % in rural areas (CSO, 2014).

The study was conducted in three different communities in two districts of the Eastern Province (Vubwi, Chipata), which differ in terms of rural infrastructure and distance to towns. In the three communities, we conducted interviews with 53 young people aged between 9 and 20. In addition to the interviews, drawing exercises were conducted with two primary schools in the Eastern Provinces (Chinjala Basic School and Kambwatike Primary/Basic School). In each of the schools, two drawing exercises with two different classes, grade 8 and grade 9 were held (see Section 2.2.). The age of the participating students ranged from 13 to 20.

## **2.4 Quality assurance**

To ensure scientific rigour we followed the standards of qualitative research (see, e.g., Bitsch 2005). Different research methods were applied, i.e. interviews and drawing exercises to ensure credibility and confirmability (methodological triangulation). The interviews with the young people were done until a point of saturation was reached (persistent observations). The findings were discussed with research peers (peer debriefing). The emerging findings from the drawing exercises were also discussed with research participants (the children) and experts (member checks). No ethical concerns were raised for this study.



### 3 Results

Table 1 provides an overview of frequent perspectives that emerged during both the interviews and drawing exercises. It shows that “the youth” has competing views on farming, rural and urban life, and on foreign countries. In many cases, these views were forwarded by the same respondents suggesting that they have a nuanced understanding on the positive as well as the negative aspects of farming, rural and urban life, and foreign countries. In other cases, respondents emphasized either positive or negative aspects. This section elaborates on the perceived positive and negative sides of all themes in detail by referring to representative statements from respondents themselves, and by showing examples from the drawing exercises. Section 3.1 details the perceptions of the youth towards farming and their own future. This section is only based on the conducted interviews. Section 3.2 shows how the respondents envision their *future farm*, based on input from both the interviews and the drawing exercises. Sections 3.3 and 3.4 highlight different perspectives about rural and urban life and foreign countries, respectively, again providing examples from the interviews and the drawing exercises.

Table 1: Overview of positive and negative perspectives

Perspectives	Farming	Rural life	Urban Life	Foreign countries
Positive	Farming as rewarding and a way to be independent, especially to have good food. Some activities are joyful (e.g., harvesting).	Rural life is characterized by a large degree of <b>independence and social-embeddedness</b> .	Access to <b>amenities</b> such as hospitals, shopping malls, electricity. Perception that <b>people do not work</b> or do only easy work.	Access to good education, health care and roads.
Negative	Farming is <b>labour-intensive</b> , does not guarantee a regular income, is <b>risky</b> and depends on rainfall patterns.	Rural life <b>lacks amenities of urban areas</b> such as tarmac roads, shopping malls, and electricity.	Urban life is <b>dangerous and bad</b> . It is characterized by accidents, pollution, thieves, and drunkards. “Satanism” is widespread.	Foreign countries are dangerous, characterized by hunger, human trafficking, and civil wars.

#### 3.1 Perceptions about farming

What do young people think about farming? Some of the respondent statements fit to the widespread discourse that rural youth find farming unattractive and thus provide a dark picture of farming. Farming is portrayed as a labour-intensive and burdensome occupation with little reward. These statements describe farming as not guaranteeing a regular income. In addition, they highlight the risky nature of farming, especially due to the dependence on fluctuating rainfall patterns. This negative perspective can be illustrated by the following statements:

- “All the farming jobs are so hard. You can easily get a leathery (sic!) age.” (Noah, 17)*
- “There is nothing good in farming. When I winnow a lot of dusts get into my lungs.”(Esther, 17)*
- “Other professions are assured of salary. Farming is seasonal and depends on rain.” (Adam, 16)*

However, this view was neither the only nor the dominating perspective among the young people. Many respondents actually claimed to enjoy farm life and work and described farming as a profitable business. Their statements reflected a sense of pride to be farmers, of working on one's own land and close to nature. While being positive about farming, these statements are not blind to the challenges associated with farming, as the following examples show:

*"Working on field the whole day is tiresome, especially during ploughing and weeding time. But the harvesting comes with so much joy and the food helps us against hunger. (Esau, 17)*

*"I enjoy farming, it feels nice to plant and to work at home. Only ridging is difficult. I never considered doing something else than farming. I want to be rich with farming." (Helene, 14)*

*"I like all farming activities and will continue. Through farming I find food and energy to work again." (Friday, 19)*

For some (but not all) respondents who highlighted negative aspects of farming (such as the drudgery and riskiness associated with farming), strong aspirations to leave farming and/or rural areas were expressed. Typically, respondents told about their desire to get government-jobs such as becoming nurses, teachers and police officers. While some respondents highlighted the nature of these occupations as reasons for their attractiveness (e.g. to become a nurse to help sick people), most of the respondents highlighted that these occupations are attractive because they allow for a regular and assured salary, which they may use for farming or to support their family as the following statements show:

*"I want to work as a police officer. Then I can hire people who can work for me or a tractor. And I can buy more fertilizer. (Alik, 14)*

*"I want to be a nurse and farm at the same time. With my salary I can support my family as well." (Esther, 17)*

While many young people thought that government-jobs are readily available, some reflected critically about their chances to get one of these jobs. For these respondents it was clear that finding publically paid work depends on good grades in school. This was evident in the following statements:

*"I want to work with the government. Maybe a nurse to help the poor. Then I am paid monthly. I only stay in village if I will not be educated." (Lozi, 16)*

*"I will see how I will perform. If I do well, I will become a teacher or doctor or police officer. If not I will continue farming." (Noah, 17)*

### **3.2 Perceptions and Aspirations on the Future Farm**

The young people were also asked about how they envision their "future farm/their farm in 10 years", both as a question during the in-depth interviews and as a task during the drawing exercises. During the interviews, most of the respondents envisioned owning draught animals, some of them because they would like to cultivate more land. In contrast, owning tractors was rarely mentioned. The following answer to a follow-up question sheds light on why tractors were not mentioned:

*"Animals can do all activities, ploughing, and ridging, weeding and even transport. Tractors just use fuel and stand around. (Josifine, 15)*

Another frequently mentioned aspect during the interviews was the purchase of additional fertilizers. Moreover, some respondents stated that they would like to buy a bicycle for transporting goods. The access to agricultural finance or ICT tools was not mentioned.

The results from the drawing exercises largely echo the answers from the interviews but some aspects were new. Table 2 shows the frequency of certain themes from the drawing exercise and from the stand-alone interviews. For this purpose, we coded the drawing with regard to certain categories.

Table 2: Frequency (%) of themes during drawing exercises

Category	Frequency (%) of themes during drawing exercises (n=63)			Frequency (%) of themes during interviews (n=53)		
	Total	Males	Female	Total	Males	Female
<b>Farm Diversity</b>						
Cash Crops	71	29	43	17	10	8
Fruits	22	2	21	17	2	15
Vegetables	40	13	27	15	2	13
Trees	37	14	22	19	4	15
<b>Animal Husbandry</b>						
Chicken	44	16	29	10	2	8
Donkeys	2	0	2	0	0	0
Pigs	8	5	3	13	6	8
Goats	11	8	3	19	9	9
Cows	40	22	17	21	9	11
Land Expansion	2	0	2	38	23	15
More Inputs	0	0	0	45	34	11
<b>Farm Technology</b>						
Hand Tools	16	3	13	0	0	0
Animal Traction	44	25	19	49	30	19
Machinery/Tractors	6	5	2	9	6	4
<b>Means of Transportation</b>						
Bicycle	6	3	3	6	4	2
Ox Cart	2	0	2	0	0	0
Motorbike	2	2	0	0	0	0
Car/Van	24	14	10	6	4	2
<b>Improved living standard</b>						
Upgraded House	86	37	49	45	21	25
Electricity	13	8	5	8	6	2
Phone/TV	10	5	5	11	8	4
Water-pump/Tap	49	19	30	15	8	8

Note: Frequency from a total of 63 drawings and a total of 53 interviews. Please note that the numbers are rounded so that we do not suggest a false level of accuracy. This leads to an accumulating rounding error and the total is not always exactly the sum of males and females.

As shown in Table 2, farm diversity was one of the most frequent themes drawn by the students when asked to envision their “future farm”. Gender played a role with regard to some of the aspirations. For example 21% (27%) of the females drew fruits (vegetables) as compared to 2% (13%) of the males. Table 2 also depicts the desire to use animal traction (44%) as compared to using tractors (2%). This confirms the results from the interview sessions. With regard to living standards, better housing (86%) and access to one’s own water-source (49%) was more frequently drawn than access to electricity



(13%) and media devices (10%). In regard to water-pumps we see gendered differences in that they were more often drawn by girls.

The frequency of themes mentioned during the interviews differs from the frequency of themes drawn by the students. First, the frequency of most themes is much lower. This was due to the nature of the semi-structured interviews, during which respondents had much less time to reflect on the questions. When asked about their “future farm” they usually mentioned only a few core themes. Here, themes that may not be deemed to be particularly noteworthy were left out, for example, the existence of various crops and trees on their “future farm” was a frequent theme during the drawing exercise but less so during the interviews. Then again, themes that are difficult to draw, such as the use of more fertilizers (45%) and land expansion (38%), featured more prominently in the interviews. The continuous use of hand tools was not a common theme, possibly because respondents focused on things they wished to upgrade to. With regard to the use of animal traction and tractors, we see no difference in the frequency of themes when comparing drawing exercises and interviews.

Figure 1 below shows a typical *future farm* as envisioned during the drawing exercise. We see the prominent role of owning fruit trees (mangoes and oranges) and growing vegetables as well as having easy access to water-sources. Farming continues to be done by hand but we also see a car.

Figure 1: “Future Farm” by Taomga (15)



Interestingly, most of the students participating in the drawing exercises had a clear understanding of how they aimed to attain their *future farm*. In most cases, this pathway started with the diversification of farm production during the first years. This included growing additional cash crops besides maize (such as sunflowers and cotton) and at a later stage also vegetables and fruits. After some years, they would buy some animals (first small animals such as chickens; then larger animals such as goats and later also cows) and equipment for using animal draught power for land preparation, weeding and transportation. The time component of aspiration and the pathways to the future farm can best be illustrated not by statements but by drawings (see Figures 2 and 3).

Figure 2: "Future Farm" by Lazarus (14)

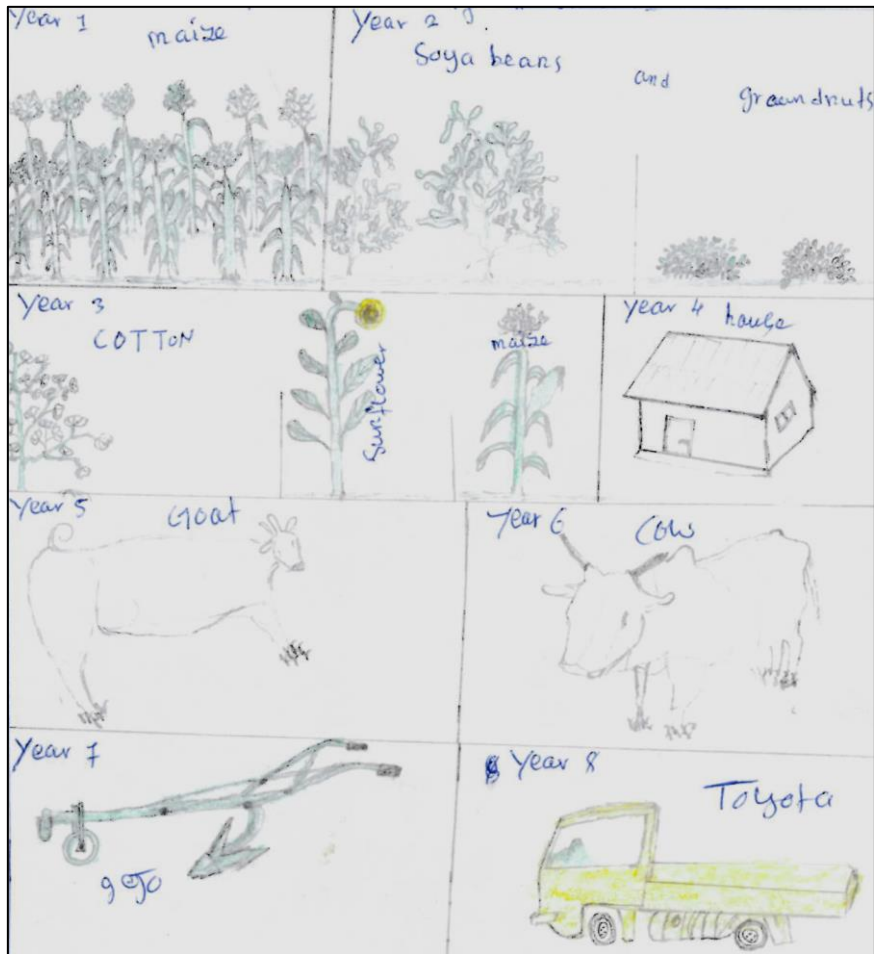


Figure 3: "Future Farm" by Joseph (16)



### 3.3 Rural versus Urban Life

The analysis of the perceptions about rural and urban life suggest that the views of young people on this topic are very diverse. Around half of the respondents (53 %) stated during the interviews that they prefer rural over urban life. This suggests the need to discard the idea of an automatic flow of the youth towards urban areas. For these respondents rural life was perceived as having several advantages. One of the most prominent advantages was that rural life is characterized by a large degree of freedom and independence. In addition, the respondents emphasized the social embeddedness and dense social networks that characterise rural areas for them. Both perspectives are highlighted in the following quotes:

*"We do not need to pay for anything. We do not pay for maize, land, water and fruits such as mangoes. In town they need to pay for everything, even water. Here we have nutritious food"* (Ruth, 15).

*"We have a lot of interaction with our neighbours. In our community you can always get help."* (Raymond, 17)

*"Prefer village because I have always been there. I am happy in village and farming."* (Josifine, 15)

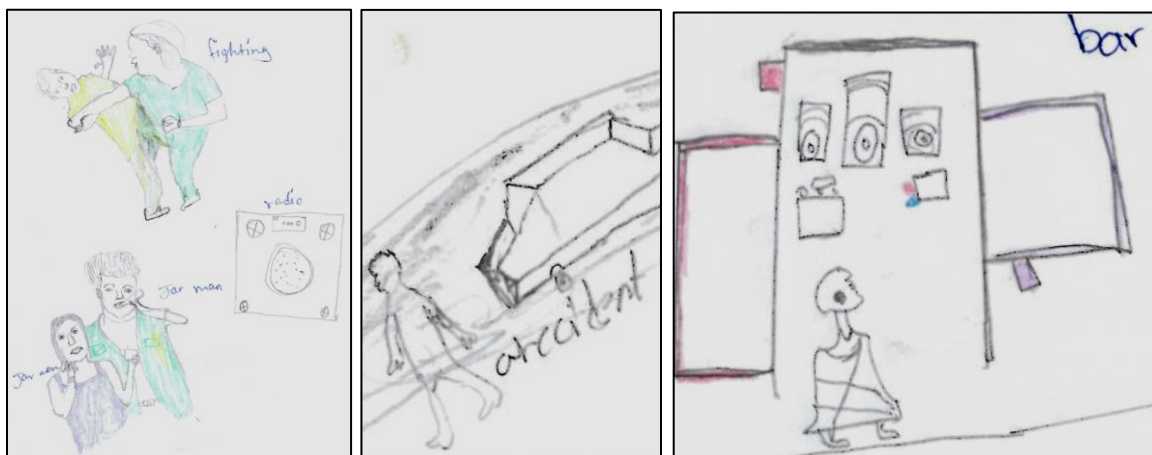
Interestingly, many of the young respondents who highlighted the positive aspects of villages perceived urban life as dangerous and bad. For them, urban areas are characterized by road accidents, for example. In contrast to rural areas, cities were perceived to be subject to widespread air pollution. Respondents also mentioned that towns are not secure: they perceived urban areas to be characterized by the existence of thieves, smokers of marijuana, and drunkards. Also, respondents frequently talked about the occurrence of Satanism in urban areas. This is reflected in the following quotes and Figures 4 to 6 below:

*"Some people do not have respect in town. They are poisoned by alcohol and they fight and smoke."* (Talunsa, 15).

*"People are not friendly and do not help each other. They do not have a heart to help."* (Esau, 17)

*"There are a lot of mad people, and Satanism and disabilities."* (Modesta, 12)

Figures 4-6: City Life from Lazarus (17), Scage (18) and Ruth (18)



Urban areas were not perceived negatively by everyone. Around half of the respondents showed curiosity and attraction towards urban life. While some also referred to negative sides (see above),

others only highlighted positive aspects. Positive aspects mentioned included: better access to schools, hospitals, shopping malls and cheap clothes. In addition, respondents emphasized that people living in urban areas have “always light” (“even for cooking”), can use tap water, have vehicles and roads, and televisions and doors. These are all things that they would like to have in their villages as well. These perspectives are illustrated by the following quote and Figures 7-11.

*“In town they have a lot of things, schools, electricity and roads and even upstairs houses (sic). The people do not look so scruffy. Town life is good life.” (Christopher, 14)*

Figures 7-11: City Life from Harrson (16), Raimond (15), Mysterious (17), Margret (16), Vincent (15)



In this context, a considerable number of the respondents had rather naïve perceptions about life in urban areas and romanticised some of its features. For example, there was a strong and common perception that people do not have to work in towns but can still enjoy the amenities of urban areas as reflected by the following quotes:

*“In town, they do not farm, they stay at home and are just chatting and eat a lot of sausages.” (Patrick, 13)*

*“In town, parents work and the youth can stay at home.” (Blaxon, 15)*

Very few of the respondents had a more nuanced picture on the working situation in urban areas. Some of them acknowledged that people do need to work but suggested that work is easy and always available. Very few had the perception that finding work is difficult. These views are depicted by the following quotes of respondents:

*“I do not know which work but Indian shops always have work available.” (Obista, 15)*

*“Jobs in town are much lighter but difficult to find. I wouldn’t want to go there without a good plan.” (Noah, 18)*



Around half of the respondents preferred a future in urban areas rather than in rural areas. These respondents are “pulled” away from rural areas as they are attracted by the perceived positive sides of urban areas (see above) but they are also “pushed” away from rural areas which they associate with a lot of challenges, some of which are related to the nature of farming discussed before (such as the high labor burden and riskiness of farming; see 3.1.). These “push” factors that make rural areas unattractive are depicted by the following statements:

*“In the village, we always eat the same, beans and nshima, and we need to work hard.” (Elina, 16)*

*“In the village, you can be bewitched over small disputes and the fields are very small. I prefer to live in town.” (Jakob, 15).*

In this context, it is important to note that the decision to find a future either in rural or urban areas was rarely perceived as a lifetime decision. It was highlighted that one can work in town after harvest or for some years after school to save some money before returning to the village, as the following example show:

*“Some of my friends want to go to town but others want to stay. Of the ones who went many came back after some years.” (Alik, 14)*

*“I want to raise some money in town but then I want to move back to my villages. I will bring a tractor with me and cultivate a lot of land then.” (Raimond, 17)*

### **3.4 Foreign Countries**

During both the interview sessions and the drawing exercises, respondents were asked about their perceptions of foreign countries. Similar to their views on urban life (see 3.3.), their views on foreign countries varied between attraction and fear. Some admired foreign countries as being clearly advantageous. They highlighted that these countries have access to good education, health and roads, as the following quotes show:

*“This is where good things are and no problems.” (Monika, 16)*

*“They have schools and good clinics. And some countries use electric stoves. I would like to see this.” (Josifine, 15)*

However, a large majority of the respondents were sceptical about foreign countries. For them, foreign countries are dangerous places with frequently occurring droughts and starvation as well as conflict. Also, foreign countries were perceived to be polluted places. Their views are informed by information they received from television, radio, relatives, friends and church. The following quotes and drawings highlight their views:

*“I heard about other countries from radio. There is a lot of starvation and hunger. And people disappear also. You cannot move at night there.” (Modesta, 12)*

*“I hear in other countries are war and hunger and people fight and kill for food. Also there are floods.” (Julius, 17)*

*“People are dying there from lightning and civil war and Boko Haram.” (Maiko, 17).*

Figures 12-13: Foreign Life from Vincent (15) and Reuben (16)



These examples show that young people do not automatically perceive foreign countries as more attractive, as often suggested. In contrast, for many, these countries were associated with hardship and a lack of security. Thus, regardless of their views on their own countries and rural life, many respondents prefer to stay where they are. This is depicted by the following quote:

*"I would not want to go. I feel much safer in Zambia." (Axon, 16).*



## 4 Discussion

The purpose of this study was to contribute to a deeper understanding of the aspirations of young people in the rural areas of Zambia. In this context, the common orthodoxy contends that young people are pulled and pushed away from farming and rural areas. The results presented here reject this view as overly simplistic. It does not reflect the diversity of views and aspirations of young people. Similar to Sumberg et al. (2017) we find that “the youth” does not speak with one voice. It speaks with several voices and even single respondents may articulate multiple voices. Most of the respondents have a nuanced understanding about the good *and* bad sides of farming, rural life, urban life and life in other countries. In this context, they also considered trade-offs, for example, between the social embeddedness and family ties of rural life and the better amenities of urban areas. In contrast to common perceptions, many young people expressed interest in farming and joy in living in their villages, yet, they were not blind to the challenges of farming and rural areas. Crucially, to some extent respondents may build their own narratives to justify their decisions (and to maintain self-respect), for example, when deciding to continue farming they may stress the good aspects of farming while highlighting the negative sides of town life. In discourse analysis, this behaviour is referred to as positive self-representation and negative other-representation.

The findings resonate with the concept of opportunity spaces which argues that youth reflects and manoeuvres actively around their geographical, socio-economic and policy opportunity space (Sumberg et al., 2012; Leavy and Smith, 2010). The perceived opportunity space of the youth may have increased sharply during the last decade due to the exposure to new media such as television and smartphones that shows lifestyles different from subsistence farming. The exposure to media (and perhaps also education) may have dramatized the contrast between the perceived hardship of rural areas and the presumption of simple city life. The common perception that people work little and do only easy tasks may be grounded in these phenomena. However, the young people of this study actually had little (direct) access to new media such as television and smartphones. Thus this effect may be more pronounced elsewhere.

While the perceived opportunity space may have expanded, the possibility to use this space may have expanded more slowly. As highlighted by Sumberg et al. (2012), the ability to use opportunity spaces depends on knowledge and skills, social networks, gender and risk-attitudes. How exactly these factors work is not clear, however. For example, a high level of knowledge and skills may raise the chances of utilizing an opportunity space, but may also lead to a more nuanced (and realistic) perception about the young people’s own opportunities and therefore to a lower likelihood of exploring that space. Some of the respondents emphasized the idea of moving to urban areas to find work, but only if they did well in school. Similarly, social networks including peers, role models and also parents may encourage young people to use opportunity spaces (see also Leavy & Hossain, 2014). For example, Sumberg (2017) show that parents encourage their children to leave farming in Ghana. On the other hand, social networks may also lead to social pressure that restrains young people from leaving farming and rural areas (Leavy & Hossain, 2014). The widespread assumption that cities are characterized by Satanism may be interpreted in this regard. When asked about the sources of these views respondents who have not themselves seen cities brought up relatives or church.

The large diversity of aspirations was also present with regard to the fictional “future farm” of the young respondents. Imagining their “future farm”, the most frequent answers centred on low-tech solutions such as raising farm diversity, using draught animals and applying more fertilizers – aspects that are not captured by the common orthodoxy that emphasizes the need for modern technology and ICTs. To some extent, this may be due to the lack of knowledge about certain technologies. For example, one may argue that ICTs could make farming more attractive, but that the youth in the study area simply do not know ICTs enough to see this. However, the young people in the study areas were exposed to tractors but still rarely imagined them as being part of their future farm and rather drew



draught animals. This may reflect “low” levels of aspirations (tractors may be attractive, but the young people do not dare to aspire to them). However, many respondents aspired to similarly expensive things (such as cars). They also mentioned particular reasons for preferring draught animals (see section 3). While one could argue that this is again a form of negative-other-representation (respondents do not like tractors because they cannot have them), it seems that the youth indeed see unique advantages in draught animals over tractors. In combination with the frequently desired higher farm diversity, ways of farming “close to the nature”, such as agro-forestry practises, may in fact contribute to increasing the attractiveness of farming instead of focusing on only a few selected crops such as maize. This suggests that policymakers and development-practitioners formulate policies based on prior policy beliefs rather than on the actual aspirations of the rural youth. This may lead to well-intended but misguided policy actions. However, it is important to highlight that the aspirations of the rural youth may be very country- and context-specific and may also change rapidly. The findings presented here should therefore not be understood as blueprints. Rather, they should encourage policymakers and development practitioners to formulate agricultural policies not for the youth but *with* the youth, taking into account that the youth is not a homogenous group.

The study has used a combination of two research methods, which allowed for the exploration of aspirations and views of the youth. Using these techniques has enabled us to broaden the concept of aspirations from quantitative measurements of *levels* to more nuanced qualitative understandings of what people aspire to and which *leverages* the youth would like to use to reach these levels. Such an approach provides much more guidance to policymakers. Combining two research methods has allowed us to triangulate our data collection process. This has ensured that we explored themes that may have remained hidden by using only one method. For example, either abstract and/or difficult to draw concepts such as Satanism, land expansion and even the use of more fertilizers were mentioned frequently during the in depths-interviews but were not expressed during the drawing exercise. On the other hand, the aspiration to have a “future farm” with a large variety of crops, fruits, vegetables, animals and trees was a strong finding distilled from the drawing exercises and the associated follow-up interviews but these aspects were much less articulated during the stand-alone interviews, perhaps because they were not perceived as something special. Some methodological questions remain, however. For example, it is unclear how the respondents perceive the likelihood of their drawings to become reality (Delavande et al., 2011). So far, our analyses have remained mainly qualitative. However, the drawings of the respondents could also be analysed and coded with scores to calculate aspiration levels (as done by Glewwe et al., 2017 to calculate self-esteem levels).<sup>5</sup> Using drawing exercises both as a qualitative *and* quantitative research tool would allow for the generation of valuable insights into what young people aspire to, both for policymakers and as indicators of aspiration levels that are interesting for researchers.

---

<sup>5</sup> In this case, one would need to know the actual status quo of the children’s families’ farms, of course. This would also allow to make cross-community (country) comparisons of aspiration levels. However, when scores are used, ways need to be found to calibrate the drawings.

## 5 Policy Implications

This study shows that the rural youth have very diverse opinions and aspirations. In contrast to literature on the subject, young people were found to reflect carefully about the positive and negative aspects of farming, rural and urban life, and of foreign countries, in order to formulate their aspirations accordingly. With regard to their *future farm*, they again showed a large diversity of aspirations and perceptions – some of which have been neglected both by policymakers and development-practitioners. While policymakers and development-practitioners highlight the need for modern technologies and ICTs, young respondents emphasized more low-tech solutions such as increasing farm diversity, using draught animals and applying more fertilizers. This suggests that policymakers and development-practitioners need to pay more attention to the actual aspirations of the rural youth to avoid well-intended but misguided policies. In addition, the findings suggest that there cannot be one policy for “the youth”. Rather, there is a need for several policies to reflect several types of rural youths. Avoiding misguided policies will be the key to ensure that the potentials of the emerging youth bulge can be reaped – while minimizing its risks. The empirical findings of this paper can be relevant not only for Zambia but also for the large set of African countries that currently aim to make farming more attractive to rural youth. However, as the findings may be largely country- and context-specific, they should not be understood as blueprint-solutions, but rather as a stimulus to formulate agricultural policies that are more closely related to the needs and aspirations of the rural youth. For researchers, the findings should stimulate more research to replicate the approach in different settings and with larger sample sizes.

## 6 References

- AGCO (2017). Agribusiness in Africa. Organizing Farmers of the Future. Impressions of the last Events. AGCO, <http://agco-africa-summit.com/review.html>. Accessed 12 January 2018.
- Ahmed, S.A., Cruz, M., Go, D.S., Maliszewska, M. and Osorio-Rodarte, I. (2016). How Significant is Sub-Saharan Africa's Demographic Dividend for its Future Growth and Poverty Reduction? *Review of Development Economics* 20.4: 762–93
- Alemayehu, K. and van der Drift, R. (2015). Agriculture as a Business for Youth in Africa. MasterCard Foundation, [www.mastercardfdn.org/envisioning-agriculture-as-a-business-for-youth-in-africa/](http://www.mastercardfdn.org/envisioning-agriculture-as-a-business-for-youth-in-africa/). Accessed 12 January 2018.
- Anyidoho, N. A., Kayuni, H., Ndungu, J., Leavy, J., Sall, M., Tadele, G., & Sumberg, J. (2012). Young people and policy narratives in sub-Saharan Africa. FAC Working Paper 32, Brighton: Future Agricultures Consortium.
- Beaman, L., Duflo, E., Pande, R., & Topalova, P. (2012). Female leadership raises aspirations and educational attainment for girls: A policy experiment in India. *Science*, 335(6068), 582-586.
- Bernard, T., & Taffesse, A. (2014). Aspirations: An approach to measurement with validation using Ethiopian data. *Journal of African Economies*, 23(2), 189-224.
- Bernard, T., Dercon, S., & Taffesse, A. S. (2015). An empirical exploration of self-efficacy and aspirations failure in Ethiopia.
- Bezu, S., & Holden, S. (2014). Are rural youth in Ethiopia abandoning agriculture? *World Development*, 64, 259-272.
- Bitsch, V. (2005). Qualitative research: A grounded theory example and evaluation criteria. *Journal of Agribusiness*, 23(1), 75-91.
- Bhanu, V. L. (2006). Study on aspirations of rural youth and their attitude towards rural developmental activities in Dharwad district of Karnataka state. Doctoral dissertation, UAS, Dharwad.
- Chamber, N., Kashefpakdel, E., Rehill, J., and Perc, C. (2018). Drawing the future. Exploring the career aspirations of primary school children from around the world. Education and Employers, Tes, UCL Institute of Education (IOE), the National Association of Head Teachers (NAHT) and the Organisation for Economic Cooperation and Development Education and Skills (OECD).
- CSO (2014). 2010 Census of Population and Housing. Eastern Province Analytical Report. Central Statistical Office, Zambia.
- CTA (2016). ICTs for agriculture – opportunities for youth, smart solutions for farmers. Technical Centre for Agricultural and Rural Cooperation, [www.cta.int/en/article/2016-04-22/icts-for-agriculture-n-opportunities-for-youth-smart-solutions-for-farmers.html](http://www.cta.int/en/article/2016-04-22/icts-for-agriculture-n-opportunities-for-youth-smart-solutions-for-farmers.html). Accessed 12 January 2018.
- Delavande, A., Giné, X., & McKenzie, D. (2011). Measuring subjective expectations in developing countries: A critical review and new evidence. *Journal of Development Economics*, 94(2), 151-163.
- DiCarlo, M. A., Gibbons, J. L., Kaminsky, D., Wright, J. D., & Stiles, D. A. (2000). Street children's drawings: Windows into their life circumstances and aspirations. *International Social Work*, 43(1), 107-120.
- Einarsdottir, J., Dockett, S., & Perry, B. (2009). Making meaning: Children's perspectives expressed through drawings. *Early child development and care*, 179(2), 217-232.
- Evoh, C.J. (2012). Taming the Youth Bulge in Africa: Rethinking the World Bank's Policy on Technical and Vocational Education for Disadvantaged Youth in the Knowledge Economy, in Collins, C. & Wiseman, A. (ed.). *Education Strategy in the Developing World: Revising the World Bank's*

- Education Policy (International Perspectives on Education and Society, Volume 16) Emerald Group Publishing Limited, pp.337 - 369
- FAO (2017). New partnership between ITU and FAO to bolster ICT innovation in agriculture. Food and Agriculture Organization, [www.fao.org/news/story/en/item/1038205/icode/](http://www.fao.org/news/story/en/item/1038205/icode/). Accessed 12 January 2018.
- FAO (2014). Youth and agriculture: key challenges and concrete solutions. Food and Agriculture Organization (FAO), Technical Centre for Agricultural and Rural Cooperation (CTA), International Fund for Agricultural Development (IFAD), [www.fao.org/3/a-i3947e.pdf](http://www.fao.org/3/a-i3947e.pdf). Accessed 12 January 2018.
- FARA (2017). Young Professionals for Agricultural Development (YPARD), Forum for Agricultural Research in Africa, <http://faraafrica.org/programs/cross-cutting-issues/gender/young-professionals-for-agricultural-development-ypard/>. Accessed 12 January 2018.
- Glewwe, P., Ross, P. H., & Wydick, B. (2017). Developing hope among impoverished children: Using child self-portraits to measure poverty program impacts. *Journal of Human Resources*, 0816-8112R1.
- Hari, R., Chander, M., & Sharma, N. K. (2013). Comparison of Educational and Occupational Aspirations of Rural Youth from Farming Families of Kerala and Rajasthan. *Indian Journal of Extension Education*, 49(1and2), 57-59.
- IAPRI (2016). Rural Agricultural Livelihoods Survey: 2015 Survey Report. Indaba Agricultural Policy Research Institute (IAPRI), Lusaka.
- Irungu, K. R. G., Mbugua, D., & Muia, J. (2015). Information and Communication Technologies (ICTs) attract youth into profitable agriculture in Kenya. *East African Agricultural and Forestry Journal*, 81(1), 24-33.
- Jayne, T. S., Chamberlin, J., & Headey, D. D. (2014). Land pressures, the evolution of farming systems, and development strategies in Africa: A synthesis. *Food Policy*, 48, 1-17.
- O'Leary (2017). Q+A: Agricultural mechanization fuels opportunity for youth in rural Africa. Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT), [www.cimmyt.org/qa-agricultural-mechanization-fuels-opportunity-for-youth-in-rural-africa/](http://www.cimmyt.org/qa-agricultural-mechanization-fuels-opportunity-for-youth-in-rural-africa/). Accessed 12 January 2018.
- Laren L. (2011) Drawing in and on Mathematics to Promote HIV&AIDS Preservice Teacher Education. In: Theron L., Mitchell C., Mitchell C., Smith A., Smith A., Stuart J. (eds.) *Picturing Research*. SensePublishers
- Leavy, J. and Hossain, N. (2014), Who Wants to Farm? Youth Aspirations, Opportunities and Rising Food Prices. *IDS Working Papers*, 2014: 1–44. doi:10.1111/j.2040-0209.2014.00439.x
- Leavy, J., & Smith, S. (2010). Future farmers: youth aspirations, expectations and life choices. *Future Agricultures Discussion Paper*, 13, 1-15.
- Macours K., Vakis R. (2009). Changing Households' Investments and Aspirations through Social Interactions: Evidence from a Randomized Transfer Program in a Low-Income Country, Washington, D.C. The World Bank. Policy Research Working Paper 5137
- Malindi M., Theron L. (2011) Drawing on Strengths. In: Theron L., Mitchell C., Mitchell C., Smith A., Smith A., Stuart J. (eds.) *Picturing Research*. SensePublishers
- Mitchell C., Theron L., Stuart J., Smith A., Campbell Z. (2011) Drawings as Research Method. In: Theron L., Mitchell C., Mitchell C., Smith A., Smith A., Stuart J. (eds.) *Picturing Research*. SensePublishers
- Mockshell, J., & Birner, R. (2015). Donors and domestic policy makers: Two worlds in agricultural policy-making? *Food Policy*, 55, 1-14.
- Mrema, G. C., Baker, D., & Kahan, D. (2008). Agricultural mechanization in sub-Saharan Africa: time for a new look. FAO.

- Porter, G., Hampshire, K., Mashiri, M., Dube, S. and Maponya, G. (2010), 'Youthscapes' and escapes in rural Africa: Education, mobility and livelihood trajectories for young people in Eastern Cape, South Africa. *J. Int. Dev.*, 22: 1090–1101.
- Shaw, J. A., (2017). Where does the research knowledge lie in participatory visual processes? *Visual Methodologies* 5 (1), 51-58
- Sims, B. G., Hilmi, M., & Kienzle, J. (2016). Agricultural mechanization: a key input for sub-Saharan Africa smallholders. *Integrated Crop Management Vol. 23-2016*, FAO.
- Sommers, M. (2011) 'Governance, Security and Culture: Assessing Africa's Youth Bulge', *International Journal of Conflict and Violence* 5.2: 293–303
- Sumberg, J., Yeboah, T., Flynn, J., & Anyidoho, N. A. (2017). Young people's perspectives on farming in Ghana: a Q study. *Food Security*, 9(1), 151-161.
- Sumberg, J., Anyidoho, N. A., Chasukwa, M., Chinsinga, B., Leavy, J., Tadele, G. ... & Yaro, J. (2014). Young people, agriculture, and employment in rural Africa. In Resnick, D., & Thurlow, J. (Eds.). (2015). *African youth and the persistence of marginalization: Employment, politics, and prospects for change*. Routledge.
- Sumberg, J., & Okali, C. (2013). Young people, agriculture, and transformation in rural Africa: an "opportunity space" approach. *Innovations: Technology, Governance, Globalization*, 8(1-2), 259-269.
- Sumberg, J., Anyidoho, N. A., Leavy, J., te Lintelo, D. J., & Wellard, K. (2012). Introduction: The young people and agriculture 'problem' in Africa. *IDS Bulletin*, 43(6), 1-8.
- Weber, S. (2008). Visual images in research. In J. G. Knowles & A. L. Cole (Eds.), *Handbook of the arts in qualitative research: Perspectives, methodologies, examples, and issues* (pp. 41–54). London, England: Sage.
- White, B. (2012). Agriculture and the generation problem: rural youth, employment and the future of farming. *IDS Bulletin*, 43(6), 9-19.
- World Bank (2006). *World Development Report 2007: Development and the Next Generation*. World Bank.

1. Evers, Hans-Dieter and Solvay Gerke (2005). Closing the Digital Divide: Southeast Asia's Path Towards a Knowledge Society.
2. Bhuiyan, Shajahan and Hans-Dieter Evers (2005). Social Capital and Sustainable Development: Theories and Concepts.
3. Schetter, Conrad (2005). Ethnicity and the Political Reconstruction of Afghanistan.
4. Kassahun, Samson (2005). Social Capital and Community Efficacy. In Poor Localities of Addis Ababa Ethiopia.
5. Fuest, Veronika (2005). Policies, Practices and Outcomes of Demand-oriented Community Water Supply in Ghana: The National Community Water and Sanitation Programme 1994 – 2004.
6. Menkhoff, Thomas and Hans-Dieter Evers (2005). Strategic Groups in a Knowledge Society: Knowledge Elites as Drivers of Biotechnology Development in Singapore.
7. Mollinga, Peter P. (2005). The Water Resources Policy Process in India: Centralisation, Polarisation and New Demands on Governance.
8. Evers, Hans-Dieter (2005). Wissen ist Macht: Experten als Strategische Gruppe.
- 8.a Evers, Hans-Dieter and Solvay Gerke (2005). Knowledge is Power: Experts as Strategic Group.
9. Fuest, Veronika (2005). Partnerschaft, Patronage oder Paternalismus? Eine empirische Analyse der Praxis universitärer Forschungs Kooperation mit Entwicklungsländern.
10. Laube, Wolfram (2005). Promise and Perils of Water Reform: Perspectives from Northern Ghana.
11. Mollinga, Peter P. (2004). Sleeping with the Enemy: Dichotomies and Polarisation in Indian Policy Debates on the Environmental and Social Effects of Irrigation.
12. Wall, Caleb (2006). Knowledge for Development: Local and External Knowledge in Development Research.
13. Laube, Wolfram and Eva Youkhana (2006). Cultural, Socio-Economic and Political Constraints for Virtual Water Trade: Perspectives from the Volta Basin, West Africa.
14. Hornidge, Anna-Katharina (2006). Singapore: The Knowledge-Hub in the Straits of Malacca.
15. Evers, Hans-Dieter and Caleb Wall (2006). Knowledge Loss: Managing Local Knowledge in Rural Uzbekistan.
16. Youkhana, Eva; Lautze, J. and B. Barry (2006). Changing Interfaces in Volta Basin Water Management: Customary, National and Transboundary.
17. Evers, Hans-Dieter and Solvay Gerke (2006). The Strategic Importance of the Straits of Malacca for World Trade and Regional Development.
18. Hornidge, Anna-Katharina (2006). Defining Knowledge in Germany and Singapore: Do the Country-Specific Definitions of Knowledge Converge?
19. Mollinga, Peter M. (2007). Water Policy – Water Politics: Social Engineering and Strategic Action in Water Sector Reform.
20. Evers, Hans-Dieter and Anna-Katharina Hornidge (2007). Knowledge Hubs Along the Straits of Malacca.
21. Sultana, Nayeem (2007). Trans-National Identities, Modes of Networking and Integration in a Multi-Cultural Society. A Study of Migrant Bangladeshis in Peninsular Malaysia.
22. Yalcin, Resul and Peter M. Mollinga (2007). Institutional Transformation in Uzbekistan's Agricultural and Water Resources Administration: The Creation of a New Bureaucracy.
23. Menkhoff, T.; Loh, P. H. M.; Chua, S. B.; Evers, H.-D. and Chay Yue Wah (2007). Riau Vegetables for Singapore Consumers: A Collaborative Knowledge-Transfer Project Across the Straits of Malacca.
24. Evers, Hans-Dieter and Solvay Gerke (2007). Social and Cultural Dimensions of Market Expansion.
25. Obeng, G. Y.; Evers, H.-D.; Akuffo, F. O., Braimah, I. and A. Brew-Hammond (2007). Solar PV Rural Electrification and Energy-Poverty Assessment in Ghana: A Principal Component Analysis.

26. Eguavoen, Irit; E. Youkhana (2008). Small Towns Face Big Challenge. The Management of Piped Systems after the Water Sector Reform in Ghana.
27. Evers, Hans-Dieter (2008). Knowledge Hubs and Knowledge Clusters: Designing a Knowledge Architecture for Development
28. Ampomah, Ben Y.; Adjei, B. and E. Youkhana (2008). The Transboundary Water Resources Management Regime of the Volta Basin.
29. Saravanan.V.S.; McDonald, Geoffrey T. and Peter P. Mollinga (2008). Critical Review of Integrated Water Resources Management: Moving Beyond Polarised Discourse.
30. Laube, Wolfram; Awo, Martha and Benjamin Schraven (2008). Erratic Rains and Erratic Markets: Environmental change, economic globalisation and the expansion of shallow groundwater irrigation in West Africa.
31. Mollinga, Peter P. (2008). For a Political Sociology of Water Resources Management.
32. Hauck, Jennifer; Youkhana, Eva (2008). Histories of water and fisheries management in Northern Ghana.
33. Mollinga, Peter P. (2008). The Rational Organisation of Dissent. Boundary concepts, boundary objects and boundary settings in the interdisciplinary study of natural resources management.
34. Evers, Hans-Dieter; Gerke, Solvay (2009). Strategic Group Analysis.
35. Evers, Hans-Dieter; Benedikter, Simon (2009). Strategic Group Formation in the Mekong Delta - The Development of a Modern Hydraulic Society.
36. Obeng, George Yaw; Evers, Hans-Dieter (2009). Solar PV Rural Electrification and Energy-Poverty: A Review and Conceptual Framework With Reference to Ghana.
37. Scholtes, Fabian (2009). Analysing and explaining power in a capability perspective.
38. Eguavoen, Irit (2009). The Acquisition of Water Storage Facilities in the Abay River Basin, Ethiopia.
39. Hornidge, Anna-Katharina; Mehmood Ul Hassan; Mollinga, Peter P. (2009). 'Follow the Innovation' – A joint experimentation and learning approach to transdisciplinary innovation research.
40. Scholtes, Fabian (2009). How does moral knowledge matter in development practice, and how can it be researched?
41. Laube, Wolfram (2009). Creative Bureaucracy: Balancing power in irrigation administration in northern Ghana.
42. Laube, Wolfram (2009). Changing the Course of History? Implementing water reforms in Ghana and South Africa.
43. Scholtes, Fabian (2009). Status quo and prospects of smallholders in the Brazilian sugarcane and ethanol sector: Lessons for development and poverty reduction.
44. Evers, Hans-Dieter; Genschick, Sven; Schraven, Benjamin (2009). Constructing Epistemic Landscapes: Methods of GIS-Based Mapping.
45. Saravanan V.S. (2009). Integration of Policies in Framing Water Management Problem: Analysing Policy Processes using a Bayesian Network.
46. Saravanan V.S. (2009). Dancing to the Tune of Democracy: Agents Negotiating Power to Decentralise Water Management.
47. Huu, Pham Cong; Rhlers, Eckart; Saravanan, V. Subramanian (2009). Dyke System Planing: Theory and Practice in Can Tho City, Vietnam.
48. Evers, Hans-Dieter; Bauer, Tatjana (2009). Emerging Epistemic Landscapes: Knowledge Clusters in Ho Chi Minh City and the Mekong Delta.
49. Reis, Nadine; Mollinga, Peter P. (2009). Microcredit for Rural Water Supply and Sanitation in the Mekong Delta. Policy implementation between the needs for clean water and 'beautiful latrines'.
50. Gerke, Solvay; Ehlert, Judith (2009). Local Knowledge as Strategic Resource: Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam

51. Schraven, Benjamin; Eguavoen, Irit; Manske, Günther (2009). Doctoral degrees for capacity development: Results from a survey among African BiGS-DR alumni.
52. Nguyen, Loan (2010). Legal Framework of the Water Sector in Vietnam.
53. Nguyen, Loan (2010). Problems of Law Enforcement in Vietnam. The Case of Wastewater Management in Can Tho City.
54. Oberkircher, Lisa et al. (2010). Rethinking Water Management in Khorezm, Uzbekistan. Concepts and Recommendations.
55. Waibel, Gabi (2010). State Management in Transition: Understanding Water Resources Management in Vietnam.
56. Saravanan V.S.; Mollinga, Peter P. (2010). Water Pollution and Human Health. Transdisciplinary Research on Risk Governance in a Complex Society.
57. Vormoor, Klaus (2010). Water Engineering, Agricultural Development and Socio-Economic Trends in the Mekong Delta, Vietnam.
58. Hornidge, Anna-Katharina; Kurfürst, Sandra (2010). Envisioning the Future, Conceptualising Public Space. Hanoi and Singapore Negotiating Spaces for Negotiation.
59. Mollinga, Peter P. (2010). Transdisciplinary Method for Water Pollution and Human Health Research.
60. Youkhana, Eva (2010). Gender and the development of handicraft production in rural Yucatán/Mexico.
61. Naz, Farhat; Saravanan V. Subramanian (2010). Water Management across Space and Time in India.
62. Evers, Hans-Dieter; Nordin, Ramli, Nienkemoer, Pamela (2010). Knowledge Cluster Formation in Peninsular Malaysia: The Emergence of an Epistemic Landscape.
63. Mehmood Ul Hassan; Hornidge, Anna-Katharina (2010). 'Follow the Innovation' – The second year of a joint experimentation and learning approach to transdisciplinary research in Uzbekistan.
64. Mollinga, Peter P. (2010). Boundary concepts for interdisciplinary analysis of irrigation water management in South Asia.
65. Noelle-Karimi, Christine (2006). Village Institutions in the Perception of National and International Actors in Afghanistan. **(Amu Darya Project Working Paper No. 1)**
66. Kuzmits, Bernd (2006). Cross-bordering Water Management in Central Asia. **(Amu Darya Project Working Paper No. 2)**
67. Schetter, Conrad; Glassner, Rainer; Karokhail, Masood (2006). Understanding Local Violence. Security Arrangements in Kandahar, Kunduz and Paktia. **(Amu Darya Project Working Paper No. 3)**
68. Shah, Usman (2007). Livelihoods in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin. **(Amu Darya Project Working Paper No. 4)**
69. ter Steege, Bernie (2007). Infrastructure and Water Distribution in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin. **(Amu Darya Project Working Paper No. 5)**
70. Mielke, Katja (2007). On The Concept of 'Village' in Northeastern Afghanistan. Explorations from Kunduz Province. **(Amu Darya Project Working Paper No. 6)**
71. Mielke, Katja; Glassner, Rainer; Schetter, Conrad; Yarash, Nasratullah (2007). Local Governance in Warsaj and Farkhar Districts. **(Amu Darya Project Working Paper No. 7)**
72. Meininghaus, Esther (2007). Legal Pluralism in Afghanistan. **(Amu Darya Project Working Paper No. 8)**
73. Yarash, Nasratullah; Smith, Paul; Mielke, Katja (2010). The fuel economy of mountain villages in Ishkamish and Burka (Northeast Afghanistan). Rural subsistence and urban marketing patterns. **(Amu Darya Project Working Paper No. 9)**
74. Oberkircher, Lisa (2011). 'Stay – We Will Serve You Plov!'. Puzzles and pitfalls of water research in rural Uzbekistan.
75. Shtaltovna, Anastasiya; Hornidge, Anna-Katharina; Mollinga, Peter P. (2011). The Reinvention of Agricultural Service Organisations in Uzbekistan – a Machine-Tractor Park in the Khorezm Region.



76. Stellmacher, Till; Grote, Ulrike (2011). Forest Coffee Certification in Ethiopia: Economic Boon or Ecological Bane?
77. Gatzweiler, Franz W.; Baumüller, Heike; Ladenburger, Christine; von Braun, Joachim (2011). Marginality. Addressing the roots causes of extreme poverty.
78. Mielke, Katja; Schetter, Conrad; Wilde, Andreas (2011). Dimensions of Social Order: Empirical Fact, Analytical Framework and Boundary Concept.
79. Yarash, Nasratullah; Mielke, Katja (2011). The Social Order of the Bazaar: Socio-economic embedding of Retail and Trade in Kunduz and Imam Sahib
80. Baumüller, Heike; Ladenburger, Christine; von Braun, Joachim (2011). Innovative business approaches for the reduction of extreme poverty and marginality?
81. Ziai, Aram (2011). Some reflections on the concept of 'development'.
82. Saravanan V.S., Mollinga, Peter P. (2011). The Environment and Human Health - An Agenda for Research.
83. Eguavoen, Irit; Tesfai, Weyni (2011). Rebuilding livelihoods after dam-induced relocation in Koga, Blue Nile basin, Ethiopia.
84. Eguavoen, I., Sisay Demeku Derib et al. (2011). Digging, damming or diverting? Small-scale irrigation in the Blue Nile basin, Ethiopia.
85. Genschick, Sven (2011). Pangasius at risk - Governance in farming and processing, and the role of different capital.
86. Quy-Hanh Nguyen, Hans-Dieter Evers (2011). Farmers as knowledge brokers: Analysing three cases from Vietnam's Mekong Delta.
87. Poos, Wolf Henrik (2011). The local governance of social security in rural Surkhondarya, Uzbekistan. Post-Soviet community, state and social order.
88. Graw, Valerie; Ladenburger, Christine (2012). Mapping Marginality Hotspots. Geographical Targeting for Poverty Reduction.
89. Gerke, Solvay; Evers, Hans-Dieter (2012). Looking East, looking West: Penang as a Knowledge Hub.
90. Turaeva, Rano (2012). Innovation policies in Uzbekistan: Path taken by ZEFa project on innovations in the sphere of agriculture.
91. Gleisberg-Gerber, Katrin (2012). Livelihoods and land management in the Ioba Province in south-western Burkina Faso.
92. Hiemenz, Ulrich (2012). The Politics of the Fight Against Food Price Volatility – Where do we stand and where are we heading?
93. Baumüller, Heike (2012). Facilitating agricultural technology adoption among the poor: The role of service delivery through mobile phones.
94. Akpabio, Emmanuel M.; Saravanan V.S. (2012). Water Supply and Sanitation Practices in Nigeria: Applying Local Ecological Knowledge to Understand Complexity.
95. Evers, Hans-Dieter; Nordin, Ramli (2012). The Symbolic Universe of Cyberjaya, Malaysia.
96. Akpabio, Emmanuel M. (2012). Water Supply and Sanitation Services Sector in Nigeria: The Policy Trend and Practice Constraints.
97. Boboyorov, Hafiz (2012). Masters and Networks of Knowledge Production and Transfer in the Cotton Sector of Southern Tajikistan.
98. Van Assche, Kristof; Hornidge, Anna-Katharina (2012). Knowledge in rural transitions - formal and informal underpinnings of land governance in Khorezm.
99. Eguavoen, Irit (2012). Blessing and destruction. Climate change and trajectories of blame in Northern Ghana.
100. Callo-Concha, Daniel; Gaiser, Thomas and Ewert, Frank (2012). Farming and cropping systems in the West African Sudanian Savanna. WASCAL research area: Northern Ghana, Southwest Burkina Faso and Northern Benin.

101. Sow, Papa (2012). Uncertainties and conflicting environmental adaptation strategies in the region of the Pink Lake, Senegal.
102. Tan, Siwei (2012). Reconsidering the Vietnamese development vision of “industrialisation and modernisation by 2020”.
103. Ziai, Aram (2012). Postcolonial perspectives on ‘development’.
104. Kelboro, Girma; Stellmacher, Till (2012). Contesting the National Park theorem? Governance and land use in Nech Sar National Park, Ethiopia.
105. Kotsila, Panagiota (2012). “Health is gold”: Institutional structures and the realities of health access in the Mekong Delta, Vietnam.
106. Mandler, Andreas (2013). Knowledge and Governance Arrangements in Agricultural Production: Negotiating Access to Arable Land in Zarafshan Valley, Tajikistan.
107. Tsegai, Daniel; McBain, Florence; Tischbein, Bernhard (2013). Water, sanitation and hygiene: the missing link with agriculture.
108. Pangaribowo, Evita Hanie; Gerber, Nicolas; Torero, Maximo (2013). Food and Nutrition Security Indicators: A Review.
109. von Braun, Joachim; Gerber, Nicolas; Mirzabaev, Alisher; Nkonya Ephraim (2013). The Economics of Land Degradation.
110. Stellmacher, Till (2013). Local forest governance in Ethiopia: Between legal pluralism and livelihood realities.
111. Evers, Hans-Dieter; Purwaningrum, Farah (2013). Japanese Automobile Conglomerates in Indonesia: Knowledge Transfer within an Industrial Cluster in the Jakarta Metropolitan Area.
112. Waibel, Gabi; Benedikter, Simon (2013). The formation water user groups in a nexus of central directives and local administration in the Mekong Delta, Vietnam.
113. Ayaribilla Akudugu, Jonas; Laube, Wolfram (2013). Implementing Local Economic Development in Ghana: Multiple Actors and Rationalities.
114. Malek, Mohammad Abdul; Hossain, Md. Amzad; Saha, Ratnajit; Gatzweiler, Franz W. (2013). Mapping marginality hotspots and agricultural potentials in Bangladesh.
115. Siriwardane, Rapti; Winands, Sarah (2013). Between hope and hype: Traditional knowledge(s) held by marginal communities.
116. Nguyen, Thi Phuong Loan (2013). The Legal Framework of Vietnam’s Water Sector: Update 2013.
117. Shtaltovna, Anastasiya (2013). Knowledge gaps and rural development in Tajikistan. Agricultural advisory services as a panacea?
118. Van Assche, Kristof; Hornidge, Anna-Katharina; Shtaltovna, Anastasiya; Boboyorov, Hafiz (2013). Epistemic cultures, knowledge cultures and the transition of agricultural expertise. Rural development in Tajikistan, Uzbekistan and Georgia.
119. Schädler, Manuel; Gatzweiler, Franz W. (2013). Institutional Environments for Enabling Agricultural Technology Innovations: The role of Land Rights in Ethiopia, Ghana, India and Bangladesh.
120. Eguavo, Irit; Schulz, Karsten; de Wit, Sara; Weisser, Florian; Müller-Mahn, Detlef (2013). Political dimensions of climate change adaptation. Conceptual reflections and African examples.
121. Feuer, Hart Nadav; Hornidge, Anna-Katharina; Schetter, Conrad (2013). Rebuilding Knowledge. Opportunities and risks for higher education in post-conflict regions.
122. Dörendahl, Esther I. (2013). Boundary work and water resources. Towards improved management and research practice?
123. Baumüller, Heike (2013). Mobile Technology Trends and their Potential for Agricultural Development
124. Saravanan, V.S. (2013). “Blame it on the community, immunize the state and the international agencies.” An assessment of water supply and sanitation programs in India.

125. Ariff, Syamimi; Evers, Hans-Dieter; Ndah, Anthony Banyouko; Purwaningrum, Farah (2014). Governing Knowledge for Development: Knowledge Clusters in Brunei Darussalam and Malaysia.
126. Bao, Chao; Jia, Lili (2014). Residential fresh water demand in China. A panel data analysis.
127. Siriwardane, Rapti (2014). War, Migration and Modernity: The Micro-politics of the Hijab in Northeastern Sri Lanka.
128. Kirui, Oliver Kiptoo; Mirzabaev, Alisher (2014). Economics of Land Degradation in Eastern Africa.
129. Evers, Hans-Dieter (2014). Governing Maritime Space: The South China Sea as a Mediterranean Cultural Area.
130. Saravanan, V. S.; Mavalankar, D.; Kulkarni, S.; Nussbaum, S.; Weigelt, M. (2014). Metabolized-water breeding diseases in urban India: Socio-spatiality of water problems and health burden in Ahmedabad.
131. Zulfiqar, Ali; Mujeri, Mustafa K.; Badrun Nessa, Ahmed (2014). Extreme Poverty and Marginality in Bangladesh: Review of Extreme Poverty Focused Innovative Programmes.
132. Schwachula, Anna; Vila Seoane, Maximiliano; Hornidge, Anna-Katharina (2014). Science, technology and innovation in the context of development. An overview of concepts and corresponding policies recommended by international organizations.
133. Callo-Concha, Daniel (2014). Approaches to managing disturbance and change: Resilience, vulnerability and adaptability.
134. Mc Bain, Florence (2014). Health insurance and health environment: India's subsidized health insurance in a context of limited water and sanitation services.
135. Mirzabaev, Alisher; Guta, Dawit; Goedecke, Jann; Gaur, Varun; Börner, Jan; Virchow, Detlef; Denich, Manfred; von Braun, Joachim (2014). Bioenergy, Food Security and Poverty Reduction: Mitigating tradeoffs and promoting synergies along the Water-Energy-Food Security Nexus.
136. Iskandar, Deden Dinar; Gatzweiler, Franz (2014). An optimization model for technology adoption of marginalized smallholders: Theoretical support for matching technological and institutional innovations.
137. Bühler, Dorothee; Grote, Ulrike; Hartje, Rebecca; Ker, Bopha; Lam, Do Truong; Nguyen, Loc Duc; Nguyen, Trung Thanh; Tong, Kimsun (2015). Rural Livelihood Strategies in Cambodia: Evidence from a household survey in Stung Treng.
138. Amankwah, Kwadwo; Shtaltovna, Anastasiya; Kelboro, Girma; Hornidge, Anna-Katharina (2015). A Critical Review of the Follow-the-Innovation Approach: Stakeholder collaboration and agricultural innovation development.
139. Wiesmann, Doris; Biesalski, Hans Konrad; von Grebmer, Klaus; Bernstein, Jill (2015). Methodological review and revision of the Global Hunger Index.
140. Eguavo, Irit; Wahren, Julia (2015). Climate change adaptation in Burkina Faso: aid dependency and obstacles to political participation. *Adaptation au changement climatique au Burkina Faso: la dépendance à l'aide et les obstacles à la participation politique.*
141. Youkhana, Eva. Postponed to 2016 (147).
142. Von Braun, Joachim; Kalkuhl, Matthias (2015). International Science and Policy Interaction for Improved Food and Nutrition Security: toward an International Panel on Food and Nutrition (IPFN).
143. Mohr, Anna; Beuchelt, Tina; Schneider, Rafaël; Virchow, Detlef (2015). A rights-based food security principle for biomass sustainability standards and certification systems.
144. Husmann, Christine; von Braun, Joachim; Badiane, Ousmane; Akinbamijo, Yemi; Fatunbi, Oluwole Abiodun; Virchow, Detlef (2015). Tapping Potentials of Innovation for Food Security and Sustainable Agricultural Growth: An Africa-Wide Perspective.
145. Laube, Wolfram (2015). Changing Aspirations, Cultural Models of Success, and Social Mobility in Northern Ghana.
146. Narayanan, Sudha; Gerber, Nicolas (2016). Social Safety Nets for Food and Nutritional Security in India.

147. Youkhana, Eva (2016). Migrants' religious spaces and the power of Christian Saints – the Latin American Virgin of Cisne in Spain.
148. Grote, Ulrike; Neubacher, Frank (2016). Rural Crime in Developing Countries: Theoretical Framework, Empirical Findings, Research Needs.
149. Sharma, Rasadhika; Nguyen, Thanh Tung; Grote, Ulrike; Nguyen, Trung Thanh. Changing Livelihoods in Rural Cambodia: Evidence from panel household data in Stung Treng.
150. Kavegue, Afi; Eguavoen, Irit (2016). The experience and impact of urban floods and pollution in Ebo Town, Greater Banjul Area, in The Gambia.
151. Mbaye, Linguère Mously; Zimmermann, Klaus F. (2016). Natural Disasters and Human Mobility.
152. Gulati, Ashok; Manchanda, Stuti; Kacker, Rakesh (2016). Harvesting Solar Power in India.
153. Laube, Wolfram; Awo, Martha; Derbile, Emmanuel (2017). Smallholder Integration into the Global Shea Nut Commodity Chain in Northern Ghana. Promoting poverty reduction or continuing exploitation?
154. Attemene, Pauline; Eguavoen, Irit (2017). Effects of sustainability communication on environments and rural livelihoods.
155. Von Braun, Joachim; Kofol, Chiara (2017). Expanding Youth Employment in the Arab Region and Africa.
156. Beuchelt, Tina (2017). Buying green and social from abroad: Are biomass-focused voluntary sustainability standards useful for European public procurement?
157. Bekchanov, Maksud (2017). Potentials of Waste and Wastewater Resources Recovery and Re-use (RRR) Options for Improving Water, Energy and Nutrition Security.
158. Leta, Gerba; Kelboro, Girma; Stellmacher, Till; Hornidge, Anna-Katharina (2017). The agricultural extension system in Ethiopia: operational setup, challenges and opportunities.
159. Ganguly, Kavery; Gulati, Ashok; von Braun, Joachim (2017). Innovations spearheading the next transformations in India's agriculture.
160. Gebreselassie, Samuel; Haile Mekbib G.; Kalkuhl, Matthias (2017). The Wheat Sector in Ethiopia: Current Status and Key Challenges for Future Value Chain Development.
161. Jemal, Omarsherif Mohammed, Callo-Concha, Daniel (2017). Potential of Agroforestry for Food and Nutrition Security of Small-scale Farming Households.
162. Berga, Helen; Ringler, Claudia; Bryan, Elizabeth; El Didi, Hagar; Elnasikh Sara (2017). Addressing Transboundary Cooperation in the Eastern Nile through the Water-Energy-Food Nexus. Insights from an E-survey and Key Informant Interviews.
163. Bekchanov, Maksud (2017). Enabling Environment for Waste and Wastewater Recycling and Reuse Options in South Asia: the case of Sri Lanka.
164. Kirui, Oliver Kiptoo; Kozicka, Martha (2018). Vocational Education and Training for Farmers and Other Actors in the Agri-Food Value Chain in Africa.
165. Christinck, Anja; Rattunde, Fred; Kergna, Alpha; Mulinge, Wellington; Weltzien, Eva (2018). Identifying Options for the Development of Sustainable Seed Systems - Insights from Kenya and Mali.
166. Tambo, Justice A. (2018). Recognizing and rewarding farmers' creativity through contests: experiences and insights from four African countries.
167. von Braun, Joachim (2018). Innovations to Overcome the Increasingly Complex Problems of Hunger.
168. Bechanov, Maksud; Evia, Pablo (2018). Resources Recovery and Reuse in Sanitation and Wastewater Systems: Options and Investment Climate in South and Southeast Asian Countries.
169. Kirui, Oliver K.; von Braun, Joachim (2018). Mechanization in African Agriculture: A Continental Overview on Patterns and Dynamics.
170. Beuchelt, Tina; Sarah Nischalke. 2018. Adding a gender lens in quantitative development research on food and non-food biomass production: A guide for sex-disaggregated data collection

**171.** Daum, Thomas (2018). Of Bulls and Bulbs: Aspirations and perceptions of rural youth in Zambia.

<http://www.zef.de/workingpapers.html>

## ZEF Development Studies

edited by  
Solvay Gerke and Hans-Dieter Evers

Center for Development Research (ZEF),  
University of Bonn

Shahjahan H. Bhuiyan  
*Benefits of Social Capital. Urban Solid Waste Management in Bangladesh*  
Vol. 1, 2005, 288 p., 19.90 EUR, br. ISBN 3-8258-8382-5

Veronika Fuest  
*Demand-oriented Community Water Supply in Ghana. Policies, Practices and Outcomes*  
Vol. 2, 2006, 160 p., 19.90 EUR, br. ISBN 3-8258-9669-2

Anna-Katharina Hornidge  
*Knowledge Society. Vision and Social Construction of Reality in Germany and Singapore*  
Vol. 3, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Wolfram Laube  
*Changing Natural Resource Regimes in Northern Ghana. Actors, Structures and Institutions*  
Vol. 4, 2007, 392 p., 34.90 EUR, br. ISBN 978-3-8258-0641-5

Lirong Liu  
*Wirtschaftliche Freiheit und Wachstum. Eine internationale vergleichende Studie*  
Vol. 5, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Phuc Xuan To  
*Forest Property in the Vietnamese Uplands. An Ethnography of Forest Relations in Three Dao Villages*  
Vol. 6, 2007, 296 p., 29.90 EUR, br. ISBN 978-3-8258-0773-3

Caleb R.L. Wall, Peter P. Mollinga (Eds.)  
*Fieldwork in Difficult Environments. Methodology as Boundary Work in Development Research*  
Vol. 7, 2008, 192 p., 19.90 EUR, br. ISBN 978-3-8258-1383-3

Solvay Gerke, Hans-Dieter Evers, Anna-K. Hornidge (Eds.)  
*The Straits of Malacca. Knowledge and Diversity*  
Vol. 8, 2008, 240 p., 29.90 EUR, br. ISBN 978-3-8258-1383-3

Caleb Wall  
*Argorods of Western Uzbekistan. Knowledge Control and Agriculture in Khorezm*  
Vol. 9, 2008, 384 p., 29.90 EUR, br. ISBN 978-3-8258-1426-7

Irit Eguavoen  
*The Political Ecology of Household Water in Northern Ghana*  
Vol. 10, 2008, 328 p., 34.90 EUR, br. ISBN 978-3-8258-1613-1

Charlotte van der Schaaf  
*Institutional Change and Irrigation Management in Burkina Faso. Flowing Structures and Concrete Struggles*  
Vol. 11, 2009, 344 p., 34.90 EUR, br. ISBN 978-3-8258-1624-7

Nayeem Sultana  
*The Bangladeshi Diaspora in Peninsular Malaysia. Organizational Structure, Survival Strategies and Networks*  
Vol. 12, 2009, 368 p., 34.90 EUR, br. ISBN 978-3-8258-1629-2

Peter P. Mollinga, Anjali Bhat, Saravanan V.S. (Eds.)  
*When Policy Meets Reality. Political Dynamics and the Practice of Integration in Water Resources Management Reform*  
Vol. 13, 2010, 216 p., 29.90 EUR, br., ISBN 978-3-643-10672-8

Irit Eguavoan, Wolfram Laube (Eds.)  
*Negotiating Local Governance. Natural Resources Management at the Interface of Communities and the State*  
Vol. 14, 2010, 248 p., 29.90 EUR, br., ISBN 978-3-643-10673-5

William Tsuma  
*Gold Mining in Ghana. Actors, Alliances and Power*  
Vol. 15, 2010, 256 p., 29.90 EUR, br., ISBN 978-3-643-10811-1

Thim Ly  
*Planning the Lower Mekong Basin: Social Intervention in the Se San River*  
Vol. 16, 2010, 240 p., 29.90 EUR, br., ISBN 978-3-643-10834-0

Tatjana Bauer  
*The Challenge of Knowledge Sharing - Practices of the Vietnamese Science Community in Ho Chi Minh City and the Mekong Delta*  
Vol. 17, 2011, 304 p., 29.90 EUR, br., ISBN 978-3-643-90121-7

Pham Cong Huu  
*Floods and Farmers - Politics, Economics and Environmental Impacts of Dyke Construction in the Mekong Delta / Vietnam*  
Vol. 18, 2012, 200 p., 29.90 EUR, br., ISBN 978-3-643-90167-5

Judith Ehlert  
*Beautiful Floods - Environmental Knowledge and Agrarian Change in the Mekong Delta, Vietnam*  
Vol. 19, 2012, 256 S., 29,90 EUR, br, ISBN 978-3-643-90195-8

Nadine Reis  
*Tracing and Making the State - Policy practices and domestic water supply in the Mekong Delta, Vietnam*  
Vol. 20, 2012, 272 S., 29.90 EUR, br., ISBN 978-3-643-90196-5

Martha A. Awo  
*Marketing and Market Queens - A study of tomato farmers in the Upper East region of Ghana*  
Vol. 21, 2012, 192 S., 29.90 EUR, br., ISBN 978-3-643-90234-4

Asghar Tahmasebi  
*Pastoral Vulnerability to Socio-political and Climate Stresses - The Shahsevan of North Iran*  
Vol. 22, 2013, 192 S., 29.90 EUR, br., ISBN 978-3-643-90357-0

Anastasiya Shtaltovna  
*Servicing Transformation - Agricultural Service Organisations and Agrarian Change in Post-Soviet Uzbekistan*  
Vol. 23, 2013, 216 S., 29.90 EUR, br., ISBN 978-3-643-90358-7

Hafiz Boboyorov  
*Collective Identities and Patronage Networks in Southern Tajikistan*  
Vol. 24, 2013, 304 S., 34.90 EUR, br., ISBN 978-3-643-90382-2

Simon Benedikter  
*The Vietnamese Hydrocracy and the Mekong Delta. Water Resources Development from State Socialism to Bureaucratic Capitalism*  
Vol. 25, 2014, 330 S., 39.90 EUR, br., ISBN 978-3-643-90437-9

Sven Genschick  
*Aqua-`culture´. Socio-cultural peculiarities, practical senses, and missing sustainability in Pangasius aquaculture in the Mekong Delta, Vietnam.*  
Vol. 26, 2014, 262 S., 29.90 EUR, br., ISBN 978-3-643-90485-0

Farah Purwaningrum  
*Knowledge Governance in an Industrial Cluster. The Collaboration between Academia-Industry-Government in Indonesia.*  
Vol. 27, 2014, 296 S., 39.90 EUR, br., ISBN 978-3-643-90508-6

Panagiota Kotsila  
*Socio-political and Cultural Determinants of  
Diarrheal Disease in the Mekong Delta.  
From Discourse to Incidence*  
Vol. 28, 2014, 376 S., 39.90 EUR, br., ISBN 978-  
3-643-90562-8

Huynh Thi Phuong Linh  
*State-Society Interaction in Vietnam.  
The Everyday Dialogue of Local Irrigation  
Management in the Mekong Delta*  
Vol. 29, 2016, 304 S., 39.90 EUR, br., ISBN 978-  
3-643-90719-6

Siwei Tan  
*Space and Environment in the Industrialising  
Mekong Delta.  
A socio-spatial analysis of wastewater  
management in Vietnam*  
Vol. 30, 2016, 240 S., 29.90 EUR, br., ISBN 978-  
3-643-90746-2

<http://www.lit-verlag.de/reihe/zef>





**zef**

Center for  
Development Research  
University of Bonn

# Working Paper Series

Author: Thomas Daum  
Contact: [Thomas.Daum@uni-hohenheim.de](mailto:Thomas.Daum@uni-hohenheim.de)  
Photo: Thomas Daum

Published by:  
Zentrum für Entwicklungsforschung (ZEF)  
Center for Development Research  
Genscherallee 3  
D – 53113 Bonn  
Germany  
Phone: +49-228-73-1861  
Fax: +49-228-73-1869  
E-Mail: [presse.zef@uni-bonn.de](mailto:presse.zef@uni-bonn.de)  
[www.zef.de](http://www.zef.de)