



Climate change and agriculture scenarios for Zambia

Socio-Economic Scenarios

Report of the Workshop

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RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Environmental Change Institute



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The project, funded by the European Commission, was launched in January 2012 in Malawi, Viet Nam and Zambia. It aims to support partner counties in their transition towards Climate-Smart Agriculture.

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Introduction

The report below contains the proceedings of the first workshop of a joint project by Zambia's Ministry of Agriculture and Livestock (MAL), The Food and Agriculture Organization of the United Nations (FAO) and The CGIAR programme on Climate Change, and Agriculture and Food Security (CCAFS) who are collaborating on developing and quantifying participatory scenario analysis under an EC funded project that will contribute to Zambia, having the tools, knowledge and capacities to adopt, advance, scale up and roll out solutions towards Climate-Smart Agriculture (CSA).

Workshop

The workshop was officially opened by a representative from the Ministry of Agriculture. He pointed out that global warming and climate change had become serious challenges to sustainable development and has gravely affected agriculture. However, the agriculture sector played a role in meeting the objectives of achieving food security and adapting to and mitigating climate change worldwide and also in Zambia. He noted that there was a high degree of complexity and most often uncertainty around issues of food security, agriculture policy, climate change and impacts of climate change, and the scenarios aspect would be critical for unpacking this, facilitating dialogue, learning and planning among all the stakeholders on these issue. He was grateful to FAO and all the development partners in this project for the partnership and their efforts towards enabling CSA in Zambia. He thanked the participants for sparing time from their busy schedules to be part of the workshop wished the participants fruitful deliberations. (list of participants is contained in Annex I)

The workshop was part of a planned series of workshops for the project titled 'Climate Smart Agriculture: Capturing the Synergies between Mitigation, Adaptation and Food Security'. The project is designed to help make Climate Smart Agriculture research useful for and responsive to agricultural policies in Zambia, Malawi and Vietnam. The project is a result of collaborative efforts between the Respective Governments, the Food and Agriculture Organization of the United Nations (FAO) and the Consultative Group on International Agricultural Research programme (CGIAR) on Climate Change, Agriculture and Food Security (CCAFS). It is expected that the project will contribute to Zambia, Malawi and Vietnam having the tools, knowledge and capacities to adopt, advance, scale up and roll out solutions towards CSA.

The aim of this workshop was to craft scenarios on the Socio-economic future of Zambia and to use the scenarios process and stories to:

- Surface and discuss complex issues and uncertainties around issues such as food security, agriculture, policy, climate change, and the impact of climate change in these respective countries
- Develop a way forward by identifying options, risks, opportunities and must do's

The participants were drawn from the various sectors or discipline in agriculture and comprised of representative from the civil society organizations. There were a total of 29 participants (including 2 facilitators and 2 representatives from FAO, Italy),



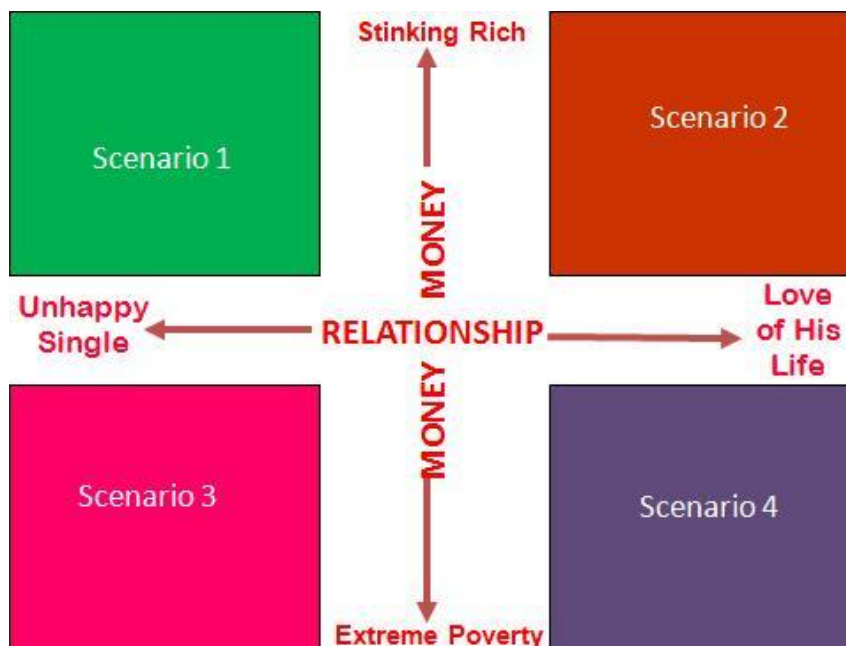
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GROUP PHOTO OF PARTICIPANTS

Scenarios Process

A quick audit revealed that most of the participants had never gone through the scenarios building process. The facilitator took them through a mock process of creating a so-called scenarios game board on the future of a 22 year old university graduate. Scenarios are about working with key uncertainties, and from the discussions, it was shared that during the next 50 odd years several things could happen in his life and these will be influenced by various uncertainties like job/money, family / relationship, health among other issues. These are the drivers shaping his future. Some of the drivers had a high level of certainty while others had high level of uncertainty. To create the game board, the participants picked two drivers with the highest level of uncertainty and that would have the highest impact in his life. These were identified as money and relationship whose extreme opposite outcomes were identified as shown below and used to create the game board as illustrated below.

- Money: in the extreme the young man could either be stinking rich or languish in extreme poverty
- Relationship: in the extreme the young man would be Unhappily Single or would find the love of his life



Using these axes to generate scenarios in each of the quadrants provides the following alternative futures:

The young man can be stinking rich and have the love of his life – this is obviously a very preferable future, or he can be stinking rich, but unhappily single, otherwise live in extreme poverty, but have the love of his life, etc. The test for scenarios is whether they are plausible.

Usually real life is not in the extremes of the axes and occurs more towards the middle of the quadrants, but the point is that his real life over the next 50 years could play out in any of those quadrants or even in multiple ones -- that is how scenarios work.

Scenarios never predict the future. Rather they provide the means to consider today's policies, plans and decision-making processes in light of potential future developments.

For the actual Zambia scenarios, the workshop participants engaged in a facilitated strategic conversation, using scenario planning techniques, which was structured as follows, and is illustrated in the diagram below.

1. Building a timeline of Zambia's history going back 60 years, twice as long the time period envisioned forward
2. Definition of terms and topics such as climate change, agriculture, food security and discussions on the unit of analysis and Zambia's present scope, context and challenges
3. Identification of key stakeholders/ players
4. Discussions about the Driving forces – the factors shaping the future. These are split between 'knowns' and 'unknowns'; so-called rules of the game and key uncertainties
5. Generate the scenario gameboard
6. Develop the scenarios stories
7. Deliberate about what the scenarios are telling us; what are possible options, risks, opportunities and must do's



1. Historical Timeline Exercise

This interactive exercise involved building a historic timeline of Zambia's history with the aim of sensitising participants to identifying trends, patterns, deep change and stability, amongst others. It is always useful to look at history, and what catches up with us from the past, before looking at the future and what may be coming at us from it.

The rule of thumb is to go back twice as long as you go forward. In this case, the scenarios were on Zambia 2040 hence the participants would go back to the 1950's. The participants, in groups of two, were asked to identify significant events in general and those specific to the agricultural sector. The pictures below capture the exercise.



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Summary of comments from the timeline exercise (what is the timeline telling us?)

- The was a lot of activity in the 1990s column as a result of the changes in economic policies due to changes of government
 - The economy was liberalised in the 1990s
 - There was a shift from single party to multi-party politics in the 1990s
 - The was a lot of ‘coming together’ in the 1990s i.e. groups, associations
 - The world changed when the Berlin wall came down
 - The influx of activities in the ‘90s could also be attributed to the age group of the participants whose average age was said to be between 35-45 years and hence had a fresh memory of activities in this period
- It was noted that n 2040, the average age of the participants will be 62-72 years
- Technology was not prominent (small mention of phones)

• There were inconsistencies and inaccurate data. This showed that people perceived things differently. It was argued that perception could be equated to truth in peoples’ minds hence the varying accounts. This point was important to discussions about the future because the future is not in existence hence no one could predict the perceptions of the 25 year old in future hence the need for flexibility in scenarios thinking

- Zambia gained independence in 1964
- There has been climate variability e.g. June has stopped being cold
- There were a few drought cards – fewer than expected. It seemed there was a linkage between drought and elections and it looked as if drought occurred every 5 years (1980, 1985 etc.) and that it coincided with the general elections and this began after liberalization
- The traits of political leaders had not changed – leadership or decision making had not changed
- There was an increase in the number of educated citizens
- There was an increase in indigenous entrepreneurs/enterprises

- The focus on growing maize had not changed
- The cycle of availability of financial resources has been the same characterized by periods of lack or insufficiency followed by periods of plenty
- Donor dependency has been constant
- The history of marketing maize has been changing positively over time, albeit slowly with each political administration
- Pre-colonization, agriculture was more diversified. There was millet, sorghum among other grains unlike today
- Some communities do not consume maize but depend on cassava
- Indigenous agricultural is still being practiced. This has adapted slowly
- Zambia is still an importing economy. The imports include processed foods, agricultural imports, rice, meat, fish
- Due to high cost of farm inputs, some maize farmers have gone back to cultivating traditional foods and burning charcoal
- The country produces surplus maize yet it would import yellow maize during drought
- The staple food is Nshima with maize as the main ingredient while cassava is mainly used at the northern region
- Maize farming is held in high regards because the government specifically promoted maize as more nutritious than other grains and was actively promoted. Currently it is being fortified and improved making it more beneficial
- There was resistance to traditional food crops or preference for maize over traditional food crops like cassava due to tedious process of milling, and maize is easily commercialized
- Urban population has increased over time
- It was shared that there was better food security in areas that grew crops other than maize
- Zambia has two commodities i.e. copper and maize
- The farmers who were not using traditional seeds got high yields
- High dependence of rain fed agriculture had remained constant over time
- Poor crop storage was still an issue
- Eating patterns
 - The more affluent are eating a bit healthier and included a variety of food in their menu like rice, maize, vegetables
 - Urban cereal consumption was diversified
 - Eating patterns in the rural areas were subject to seasonal harvests and changes
 - A study revealed that household with more income consumed more rice
- The country was urbanizing albeit slowly compared to other nations
- Role of women in agriculture had been romanticized. Their roles and contributions were different depending on whether they were urban or rural women and on their level of education. Majority of the women still engaged in farming activities that were labour intensive and time consuming with little remuneration
- Greenhouse gas emissions were associated with industrialization. However, the sources and effects of land use emissions had been are under the radar. Zambia was not a heavy emitter or greenhouse gas emissions

2. Present context, topics under discussion and challenges

The essence of this part of the process is to create a common understanding of the unit of analysis and agree on the topics being examined – it helps with framing the discussion.

It was agreed that the **unit of analysis was Zambia** guided by its current borders (this could change in future). It was noted that Zambia was also part of SADC and COMESA. This would be discussed further during the key stakeholders' discussion.

Climate Change in Zambia was characterised by the following:

- More weather extremes in terms of floods and drought
- Significant shift in onset and cessation of rainfall periods (change in length of rainfall periods)
- Significant and consistent increase in temperature (ambient, max, minimum)
- Seasonal shifts in the various seasons (where the hot seasons start in August, it changed to mid-October)

Agriculture

Agriculture includes crop production, forestry, fisheries, livestock, water resources management, soil conditions and nutrients and game farming. All these were said to be connected to land use. It was shared that the above forms of agriculture were natural based and dependent on nature, as opposed to artificial control. Farming was both intensive and extensive. There was a belief that the bigger the field, the bigger the yield. Other issues affecting agriculture were marketing infrastructure and agriculture financing

Food Security

Food security was defined as access to safe and nutritious food for all at all times. It includes aspects like availability and affordability. It was agreed that the surplus of maize in Zambia had not resulted in food security.

Identification of challenges

The participants were organised into 4 groups and asked to identify the challenges facing Zambia given the topics under discussion. These included:

- Uncertainty during planting time – initially farmers could predict when the rains would fall and coordinate this with their planting. Due to climate change, this had become unpredictable and had resulted in low yields.
- Inadequate adaptive technology – technology was unavailable in a user (common farmer) friendly format
- Lack of locally downscaled models – the available models were difficult to adapt to and use locally
- Inadequate resources for research and development (R&D) in climate change – R&D was largely funded by donors and the government placed little emphasis on this

- Climate change among the farmers was a reality. They could tell from the changing seasons. It was shared that they may not call it climate change but they were fully aware of its effects. However, some policy makers and politicians were not convinced that climate change was a reality and a problem that needed prompt solutions hence placed little emphasis on it. There was weak political will to address climate change issues
- Lack of incentives to promote adaptive issues
- Lack of adequate information on biotechnology
- Lack of alternative sustainable livelihoods strategies and thus some farmers engaged in charcoal burning as an income generating activity
- Cost of irrigation based agriculture was high compared to rain fed agriculture
- There was insufficient empirical evidence to support discussions on the effects of climate change
- Agriculture is predominantly a poor man's activity or seen as a form of punishment for pupils or students hence the poor attitude towards it
- There was high dependence on hand-outs and relief provisions
- Lack of climate smart livestock breeds, animal species and crop varieties
- Lack of organic matter due to rampant deforestation (250-300 thousand hectares of forest have undergone deforestation) which has led to soil degradation
- Low public investment in water infrastructure (dams and canals)
- Poor compliance to existing laws e.g. getting farmers to comply to the laws of not burning land
- Crop marketing distortion
- Poor accessibility to land – few women own land
- Inconsistencies in government policies - land is used as rewards to certain cadres of people
- Poor infrastructure (roads, power, bridges and rails)
- Weak extension systems (knowledge, size of camps)
- Low levels of mechanization (agriculture production systems like seeds)- Use of archaic tools for farming like the hand hoe
- Weak policies on promotion of diversification of agriculture
- Poor post-harvest technology and information - Inadequate storage facilities
- State controlled flour prices
- Weak and inadequate credit mechanisms - Financial institutions are not keen or strong in climate change issues
- Biased land tenure systems (state versus traditional)
- Cultural biases on food systems and in agriculture (women relegated to planting groundnuts)
- Low and weak value addition
- Peasant farmers based agriculture
- Lack of operational policies for climate change, weather or climate risk insurance
- Some climate change mitigation and adaptation solutions were in conflict with cultural norms and values. For instance, a farmer in a highly vulnerable area like Namala would not agree to minimize the number of animals he has (to reduce the quantity of land under grazing/ to reduce overgrazing) or relocate to other lands so as to mitigate against climate change. To them is

would be infringement on cultural rights. Some groups have the culture of burning charcoal and would not willingly embrace other farming methods.

- There is no comprehensive legal framework for climate change issues – the Environmental Management Act of 2010 did not capture climate change issues. It looked at environmental management from the pollution angle
- About 50% of Zambia's land mass lies in climate change vulnerability areas
- Motor vehicle patterns – there is increased demand for second hand vehicles of poor quality which contributes to increasing pollution
- High deforestation to create space for agricultural activities
- Poor research on use of chemical inputs versus environmental management and agricultural land use versus water resources management

Comments about the challenges

- It was noted that there are some climate smart livestock breeds and crop varieties. The issue could be inadequacy or access to these breeds and crop varieties
- In Southern Province, there are many dams that go unused or used as watering holes by animals hence the issue could be poor utilization of water and not necessarily lack of water or poor infrastructure
- The major culprits of deforestation were farmers who were clearing forest to create land for agriculture, but mining is also an issue
- Women faced many challenges with regards to land ownership and were frequently evicted from their farms

3. Key Stakeholders

The workshop participants compiled a list of key players a.k.a. stakeholders (not just confined to the climate change and agriculture milieu) who are relevant for the future of Zambia. **These are the actors who will impact, or be affected by, how the future of Zambia unfolds over the next 30 years.**

The roles and relationships between these players can change over time and it is important to realise where power and vested interests lie when contemplating alternative futures.

The players could be within Zambia and external to Zambia. These were identified as:

- All farmers
- Politicians
- Research institutions
- Donors – FAO,
- Youth
- Ministries – finance, defence, home affairs and foreign affairs, communication
- Media
- Private sector
- Multi-national co-operations
- Civil society Organizations and NGOs
- Traditional authorities
- Faith Based Organizations like the church, the Muslim community
- Musicians
- Farmer organizations
- Peasant farmer organizations
- Mining
- China
- Canada (own 40% of mining interests in Zambia)
- The European Union
- South Africa
- Congo (especially the informal trade)
- Multi-lateral financial institutions like International Monetary Fund, African Development Bank, World Bank
- Regional Economic Communities like Southern African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA), African Union
- The United States of America (USA)
- Neighbouring countries like Zimbabwe, Tanzania (Port), Angola
- Social media
- The Consultative Group on International Agricultural Research programme (CGIAR)

4. Driving Forces

This session involved a discussion on the driving forces which are factors that shape the future. They are those underlying and impacting factors that set the pattern of events and determine the outcomes of how the socio-economic future of Zambia will evolve over the next 30 years. Driving forces typically include the state of the economy, political decisions, emerging trends, demographic realities, technological drivers, the state of the natural environment, etc. Some of the challenges contained the drivers that would shape the future.

There are two categories of driving forces, namely certainties and uncertainties. Certainties are drivers that can be reasonably predicted and one can, with a certain level of ease, point out how they might play out in the future. They are the 'given' and they form the rules of the game and used to enrich the story lines or plots. For instance, the participants shared that they were certain that the population would increase meaning that population would be clustered under certainties.

Key uncertainties are the literally that – the driving forces that are uncertain. They can include the so-called 'known unknowns', risks, possible trend breaks and wild cards. It is their impact and lack of knowledge about them that are the vital for developing a better understanding of how the future might unfold.

Uncertainties

1. Will the economy continue to be subsistence or will it industrialize?
2. Infrastructure roll out
3. Disruptive technology that changes society and / or the pattern of production – this was plotted as a **wildcard**.
4. Willingness to undertake PPPs Public Private Partnerships
5. Will there be devolution of power?
6. Governance - will there be improvement in governance?
7. Decision making- top brass vs. active citizens (the nature of citizenry changing)
8. Commodity prices
9. Will the economy grow, diversify and be sustainable vs. Economic volatility
10. Can Zambia manage its water resources?
11. Will there be pro – poor growth?
12. Land tenure

Certainties (Rules of the game)

- Agriculture is not seen as an economic activity (by some) – it is survivalist in nature
- Deforestation - the culprits include farmers and the energy sector (firewood and charcoal)
- More extreme weather more often
- Decentralisation will happen
- Population increase (to 33 million by 2040)
- The high Youth Dependency Ratio will continue this trend is likely to continue in future. By 2040, 50% of Zambia's population will be under the age of 14yrs
- 47% of the population is not economically active
- Continued availability of arable land
- There is no hope for research and development
- People settle where there is infrastructure

- 13. a) State capability to implement adaptation policies and strategies
- 13. b) State capability to implement mitigation policies and strategies

- Infrastructure is related to mining activity
- Governance is executive, centralised and strong -- not fact based
- The poor will always be with us
- There will be more official ownership of land
- Increase in the cost of living
- Inequality is rising

All the key uncertainties were plotted on an 'Impact / Uncertainty chart' in order to prioritise those uncertainties that the participants have the least knowledge about (those that are least predictable) and that will have the greatest impact on how the future of Zambia may evolve over the next 30 years. One also tests for the level of discomfort about the subject. It is important to remember that 'high' uncertainty does not mean 'high improbability'; high uncertainty means having little knowledge of how something may pan out -- it means 'not having a clue' -- a great lack of knowledge. This is depicted in the Impact / Uncertainty chart.

The key uncertainties on the top middle-to left-hand side of the Impact/Uncertainty chart¹ are those issues that are high impact, but more certain -- issues that we have more knowledge about -- they have a more 'known' element to them. These are some of the key issues that should be factored into future planning.

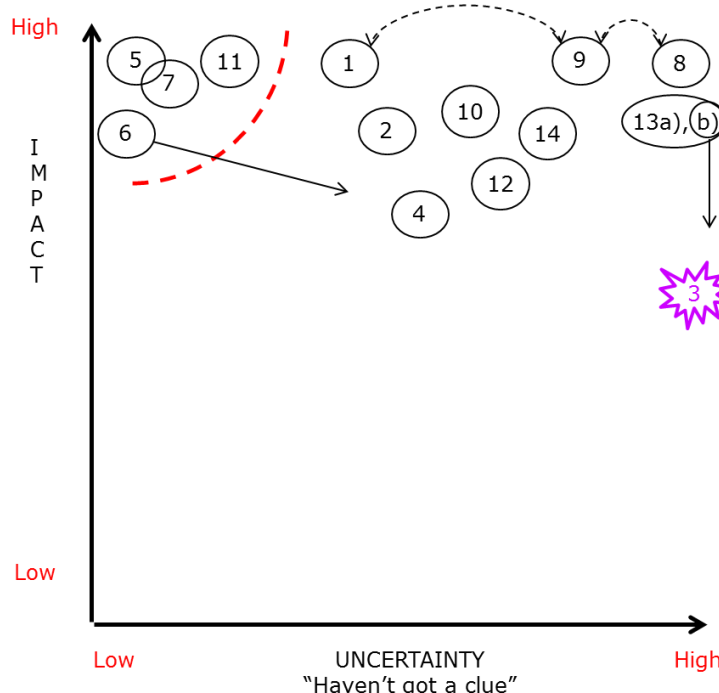
They include:

1. Will there be devolution of power?
2. Governance - will there be improvement in governance?
3. Decision making- top brass vs. active citizens (the nature of citizenry changing)
11. Will there be pro – poor growth?

Destructive technology was treated as a wild card because there was only speculation about it.

The drivers with the highest levels of uncertainty and impact in this case were:

- Issues related to the economic growth and the nature of economic growth, dependent on commodity prices (8 & 9)



¹ The Impact/Uncertainty chart also acts as a radar screen on which interested parties can monitor key uncertainties and their movement over time, and so get a better idea of the unfolding future so that they can respond more strategically and more proactively.

- Whether the state (this was changed to include all institutions) could be efficient and implement adaptive policies, i.e. be adaptive (13 a)

The participants identified opposite extremes for each of these two drivers and they were then expressed as opposite extremes to provide the framework for a scenario gameboard. They are:

- *High and steady economic growth vs. Low economic growth*
and
- *Institutions are efficient and highly adaptable versus Institutions are weak and unresponsive*

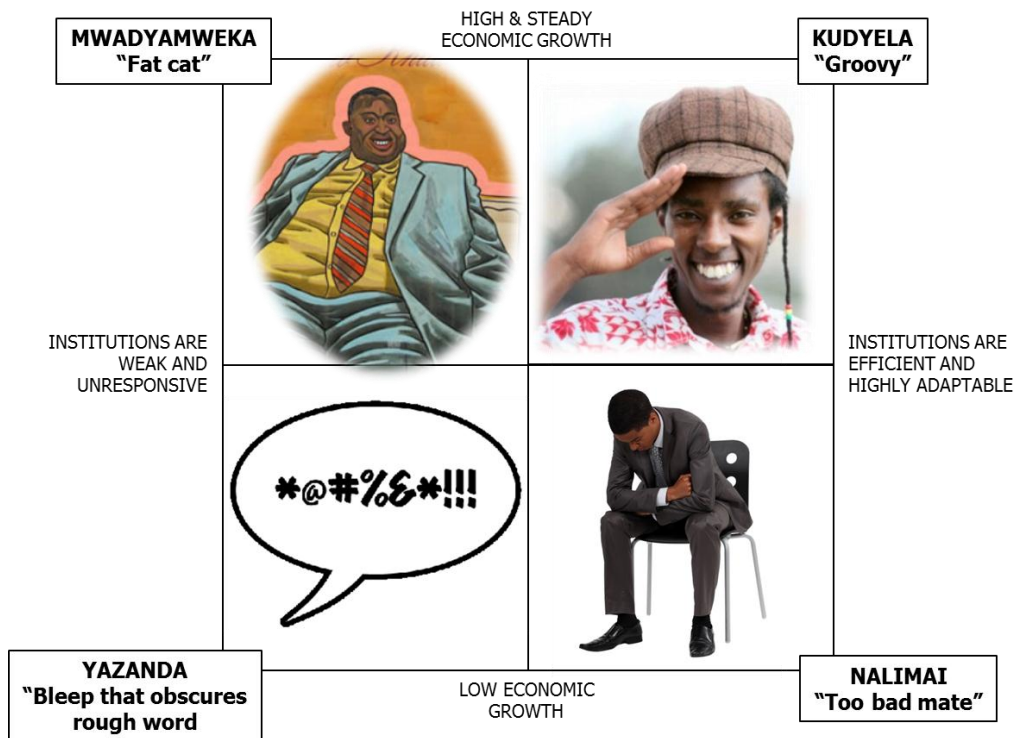
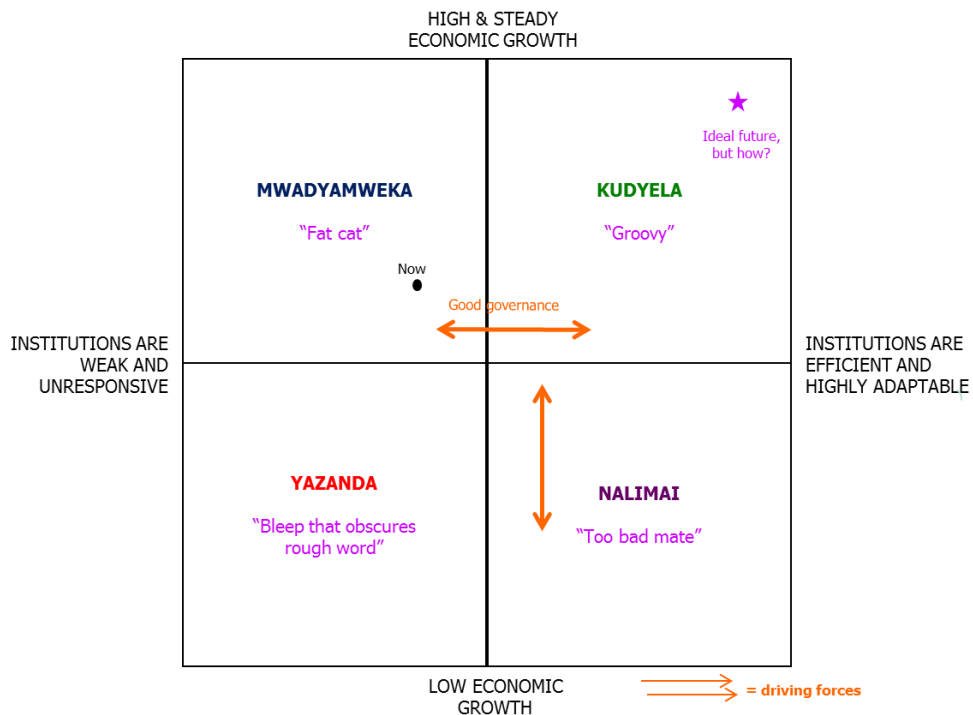


Photo: ©123RF.COM

Two driving forces, the role of good governance and the influence of commodity prices were plotted on the game board



6. The Scenarios Stories

The participants were divided into four groups and they were asked to explore how the drivers and various issues like agriculture, climate change and food security would play out in each of the scenarios stories. They were also asked to look at how the various stakeholders interacted in these environments. The final output of the discussions would be presented in story formats.

The Yazanda Scenario

The State of the Kingdom Address to the Yazanda Elderly Council by the King of the YAZANDA Kingdom

My dear Countrymen and women, this year's State of the Nation Address is one of the worst speeches we have ever had in the history of the Yazanda Kingdom. However, I hope we can use this report to look into the future and seek the necessary structural and policy alternatives that we need to put in place to take us into a better future.

- The currency of our kingdom is no longer a legal tender anywhere in the world except here in Yazanda, reducing our import and export capability.
- Our key export commodities (minerals) prices have gone down in the world market.
- Climate change is taking its toll on our agricultural sector with the extremes of weather variability making agricultural production a nightmare thanks to the lack of immediate technological solutions and limited investments in agricultural research and development.
- There is massive unemployment in both the urban and rural areas due to the close down of the mines and shrinking agricultural sector activity and production.
- Food production is highly reduced to an average of half a tonne per hectare of our maize crop
- Deforestation is accelerating, reducing the buffer for goods such as fibre, honey, herb medicines and environmental services such as watershed protection.
- The media is awash with revelations of the existing rampant corrupt practices within our official procurement systems for public goods and services.
- Rural poverty levels have increased to 90%
- The malnutrition levels of our people has reached critical levels as evidenced by stunting and wasting of the majority of the under five children in our country-what kind of future leaders are we going to have distinguished country men and women?
- With the prevailing power and fuel shortages, our industries are producing only at 25% capacity resulting in massive layoffs of the employees and this has resulted in increasing strikes and crime levels witnessed daily in our kingdom
- To add salt to our wounds we have an outbreak of a strange disease currently attributed to the changing weather patterns devastating our communities especially in the North of our kingdom which we are yet to identify.

Countrymen and women, the time to act is now before we join the league of failed nations.

Mr Speaker and the council of elders, I beg to move a Kings motion of a scenario building exercise to examine the drivers of change, challenges and opportunities and use the process to guide us towards the creating a foresight for the future that will take us back to the days of Kudyela!

Thank you!

King of Yazanda Kingdom

The Mwadyamweka Scenario

My name is Mabuku Mabuku. I am a farmer in Kalomo district who is struggling to make ends meet. The late onset of the rains has delayed planting. I have had to replant after the first onset of rains this year proved false. I Used recycled seed due to late distribution of inputs. There has been insufficient information from Meteorological and Extension offices on weather forecast and the media have done little to disseminate weather information.

I tried to diversify but there is only support for maize farming from the government. I am unable to claim my crop insurance because the agent I used to cover my risk was bogus. This is the third year that rains have failed. I am yet to be paid for the little cotton crop I delivered to the local ginnery last year.

This year's budget allocation to agriculture and input subsidies has further increased but these may not reach the majority of farmers like me. Ironically, there was a maize surplus that came from commercial farmers who have stored water in their dams for irrigation and who are able to get loans. The government sent some surveyors to assist us build a dam and irrigation scheme but it has been 3 years since and nothing seems to be happening. Government had also promised to install solar power pumps but still nothing is happening. We hear that the African Development Bank will now fund the scheme and hope this will be of great help.

My son did well in school and is supposed to be going in University to study electronics but he could not secure a government bursary as the selection and bursary award process is not transparent. It looks like education is for the privileged few whose parents are rich or have connections. We have been told the GDP is growing at 8% and inflation is 5%, but I am wondering why these benefits are not trickling to my family.

I wish I had taken an alternative career in mining or politics where people seem to be making more income. Luckily my daughter just got engaged to a copper trader (jerabo) who sells to the Chinese. This I hope will help us to survive the harsh realities of life.

The Kudyela Scenario

Kudyela is a community where institutions are efficient and highly adaptive. In this community there is a strong economic growth, good governance and prices of commodities are favourable and good. There are a number of key players in this economy. These include Ministry of Agriculture and Livestock (MAL), Non Governmental Organizations (NGOs), Farmers and Farmer organizations. These players in this community play different roles such as research in crops, animals and fish. Information dissemination and advocacy is carried out by extension workers. Policy formulation and enforcement is done by the Forestry department.

In this community climate change impacts and agriculture are given attention and emphasis by the key players. The mitigation measures taken by various players include improvement of crop

varieties, fish species and suitable animal breeds. The farmers have also adopted Conservation farming which includes conservation agriculture, conservation tillage, crop residues retention, and crop rotation and soil cover crops. These practices are implemented as components of organic agriculture. In addition to this, the forest and forestry resources have been preserved and improved through low deforestation, compliance to forestry laws, improved alternatives of energy sources such as Cook Stoves, reforestation and afforestation.

Food security in this community is very high. Nutritious food is available and accessible to all the people in the community. Farmers have learnt and adopted the latest post-harvest technologies. Farmers in this community have good and efficient storage facilities.

The forests and forestry resources are managed by the community in a participatory manner. This has given them a sense of ownership in the project. The efficient functioning and adaptive institutional framework has resulted in a sustained and increased economic growth in Kudyela's community.

The Nalimai Scenario

The Institutions are efficient. However, there's low economic growth but not a total collapse of the economy. There is evidence by the collapse of commodity prices among other things. Many people have lost their jobs resulting loss of income. The only surviving institutions are schools, health care and those providing agriculture extension services which are working very well. Zambia's exports volumes are low.

There are good strategies, on paper, to combat climate change but with limited implementation. Politicians focus more on food security priorities while climate change issues take a back seat. Mitigation measures are often ignored. Bad agricultural practices are the main source of carbon or green house gases emissions. There are lower rates of deforestation in some area where the farmers have adopted climate smart agriculture. The low economic growth and lack of jobs has led to more charcoal burning and more deforestation. There is great demand and dependence on external support like donor aid and foreign direct investment. There is still high unemployment among the youth/

In the agricultural sector, the state is focusing on a new breed or class of farmers between subsistence and commercial whose farming methods have been producing high yields. There is hope for and in the agriculture sector especially climate smart agriculture. Private sector – they would have lower profits – reduces its activities in Zambia. There are limited subsidies – cannot expand because of limited resources.

Food Security is likely to increase because of good institutional environment. There is a shift from subsistence to emerging farmers with high yields and this could aid in achieving food security. There is less social protection, and less job opportunity could reduce food security in some situations.

Sustainability is a challenge. There are inadequate resources to support the development of sustainability mechanism.

Comments from the plenary about the scenarios

Regarding Mwadyamweka:

- It sounds like where Zambia is now

Regarding Kudyela

Expound on how farmers engage in Kudyela? Could the small scale farmers have up scaled to medium and commercial farmers by 2040?

It was suggested that by 2040:

- There might be fewer but more productive farmers and farming will be highly productive and linked to industry
- The sizes of the (corporate) farms will reduce resulting in smaller, more efficient and productive farms
- Wrong decisions could result in a movement towards Nalimai and Yazanda

There were questions as to what sort of political system or institutional changes would make the realization of the best scenario possible. The realization of this story is dependent on the decisions made or taken by the leadership. Right decisions have to be made about the institutions and the economy. A lot needs to happen in agriculture before the year 2040. There is need for transformation of the mind (transformational leadership), societal and institutional changes to realize this scenario. The society needed political will to achieve the Kudyela story. However, the Zambian society as it was currently had not decided to change

Development needs to be tailored to culture (culture could be a way of doing things)

How does climate smart agriculture become sustainable especially when donor funding comes to an end? Was it realistic to expect the changes mentioned within the timeframe of 27 years?

Regarding Nalimai

- A participant felt like it almost sounded like Yazanda or the present situation in Zambia
- The efficiency of the institutions was unclear
- The role of the private sector was not evident. In an environment of low economic growth, they could be interested in export other than agriculture
- The group members were asked to add a global driver or other external shocks to explain why there is low economic growth

7. Observations from the Scenarios Stories: Options, Risks, Opportunities and Must Do's

- There is need to embrace a broader definition of culture above and beyond the traditions of the Zambians. It could include the way of doing things.
 - There is need for effective collaboration between institutions
 - There's need for a change of attitude towards agriculture – move from subsistence farming to an agri-business
 - There needs to be a change of mindset among the political leadership.
 - Leaders need to embrace long term planning e.g. 40 years outlook
 - The role of the community should be analysed further and active citizenry should be encouraged. The level of trust or social capital needs to be increased
 - There is need to further interrogate how Climate Smart Agriculture approach contributes to the realization of Kudyela
 - The participants were challenged to interrogate further the role of various stakeholder in moving the country towards Kudyela in the short and long term
 - Conservation agriculture has been unsuccessful this far and strategies need to be put in place to popularize it (roll out and uptake). There has been no follow-up on conservation agriculture in region 3.
 - There is need to maintain political stability and to strengthen institutions and foster institutional cooperation
 - The amount of arable land under irrigation should be increased
- | |
|---|
| <ul style="list-style-type: none"> • One cannot control economic growth but can control institutional reform |
|---|
- The Zambian Government does not listen to cooperative partners as evidenced by the budget priorities which go against their advice or ignores their input. The influence of donor agency in the climate conversations needs to be discussed further
 - Some decision makers do not take long term planning seriously, and they should
 - The press, civil society and trade unions used to influence decision making. However, this is not the case currently. The Trade Unions have been silenced while the Civil Society Organizations have been co-opted into government.
 - There is need to develop realistic and easy to implement strategies to get policy makers' ears and/or attention.
 - Need to have shorter milestones (5 year each, guided by the election cycle) building towards Zambia 2040
 - How do we change or influence institutions? Weak institutional frameworks hinder innovation, adoption of technology among other things

- Take a critical look at the benefits of organic agriculture vis-à-vis conservational agriculture. Target institutions beyond those involved in climate smart agriculture (conservational agriculture).
- Technocrats could be the problem because they design and implement policy documents yet when they fail, the politicians are blamed. The roles of technocrats and academia in policy making or decision making should be analysed further. On the flip side, some projects have been implemented without political interference and have failed.
- Historically, there has been high investment in agriculture but these efforts have not borne fruit due to weak institutions resulting in the Mwadyamweka scenario in Zambia.
- The focus should not be on conservation agriculture alone. Organic agriculture should be embraced. If strengthened, organic agriculture could lead to better farming practices. Organic farming can be used to implement conservation agriculture
- The 'I cannot do this' culture should be abandoned
- Improve leadership across the board - politicians and traditional leaders should take responsibility. Caution should be exercised in apportioning blame because there are instances where politicians have been over blamed.
- Education for transformation is needed to rid people off the culture of expecting handouts
- Politicians want to see the policies linked to their elections promises despite their cost and effects. Officers who do contrary to what the politicians expect are punished.

Adjournment

Mr Morton Mwanza from the Ministry of Agriculture gave the closing remarks. He thanked the FAO and facilitator for a job well done. He also thanked the participants for their active participation and shared that he looked forward to the next round of discussions.

The proceedings of 16 October, which was an effort to figure out how to link the qualitative scenarios to the inputs and parameters required by the different quantitative models that will be used for the entire project, is available as a separate document.

The scenarios workshop closed at 18:00 on 15 October 2013. This serves as a working document that can be used by all the workshop participants, and/or it can be utilised / expanded into other relevant formats.

VERONICA NGUTI & TANJA HICHERT

26 October 2013

ANNEX I

List of workshop participants and their organisations

Ballard Zulu	IAPRI
Sebastian Kopulande	Zambia Investments & Trade
Charles Chileya	University of Lusaka - Sociology
Sishekanu	PPCR
Cosmas Mwaanga	Ministry of Agric -Policy
Odillia Chilekwa	Forestry Dept
John Musimuko	Zambia Keepers Foundation
Patrick Matakala	WWF - Zambia
Gilbert Mudenda	Institute of Agrarian Studies
Leslie Lipper	FAO/EPIC /CSA
Lewis Bangwe	Africa Development Bank
Collins Nkatiko	Conservation Farming Unit
Young Vibetti	Ministry of Agric - Livestock
Edwin Abwino	Organic Producers Association
Ephraim Shitima	WWF -Climate Change
Sumani Jayne	University of Zambia -Mathematics
Stephen Chikwanda	Ministry of Agric -Policy
Misael Kokwe	FAO - CSA
Hamazakaza	Ministry of Agric - Research
Reynolds Shula	Ministry of Agric - TSB
Morton Mwanza	Ministry of Agric -Crops
Kalaluka Munyinda	UNZA- Soils
Elisa Kuntashula	UNZA-Economics
Max Choombe	Ministry of Agric -. Southern
Shadreck Mungalaba	Ministry of Agric - Lusaka
Angela Kabuswe	Ministry of Environment
Aslan Aslihan	FAO/EPIC/CSA
Tanja HICHERT	CCAFS Facilitator
Veronica Nguti	CCAFS Facilitator



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