

Summary minutes from the Triple L workshop, Kitale, Kenya, November 18th to 21st 2014.

The first day was mostly for reports from various activities during the past year, mostly student projects. The second day was for brainstorming, discussing and carving a way forward. The third day was for interactions with local policy makers and agricultural expertise. On the 21st there was a public meeting presenting Triple L and some results in Chepareria. Throughout, and especially during the first two days the program

Tuesday November 18th.

Student presentations:

1. Sara Svanlund (Gert) Carbon sequestration in the pastoral area of Chepareria

There was more soil carbon in enclosed areas, especially in top soil.

2. Anna Hallmèn (Gert)

No significant results on infiltration differences between enclosed and open areas due to very high variation. Instead Anna did a satellite image analysis between 1984 and 2013. Much more vegetation activity in 2013. Patterns on the images suggest that this may be due to enclosures.

3. Regina Waiganjo. Impact of enclosures on range productivity, West Pokot.

Significantly more biomass in enclosed areas.

4. Vera Karmebäck and Joy. Understanding changes in West Pokot.

Builds on previous studies linking Vi Agroforestry and Triple L. Qualitative data to fill gaps from previous studies. Included 5 subdivisions in West Pokot. Differences between sub locations mainly due to *infrastructure, Vi work, education and climate*; not excluding other factors.

Per presented three studies:

5. Julia Wernersson – Towards a Critical Social Theory of Landscape Perceptions and Experiences of Land-use Change in Chepareria, Kenya. Analyses a collective narrative a tough life 30 years ago in a dry, unproductive environment with old traditions. When describing the land before the 1980s, respondents exemplify by stating the land was very bare or dry, without trees or grass, with problems such as desertification, soil erosion, and gullies. In terms of common knowledge, most of the older respondents also noted that it had previously been unimaginable that trees and grass could grow in the area.

6. Laura Saxer - studied present land tenure systems. Results showed that the land tenure system is changing. Important to see that the communal land use is still there.

7. Lotje Geutjes - study of coping strategies in relation to climate variability. Less migration in Chepareria, planned grazing, new set of strategy if drought occur (when not migrating). In Kacheliba, they are still migrating every year and sell animals. Study now, together with Julia: Enclosures as the focal point of human-environmental dynamics.

Three key words: sedentarization, privatization, commercialization.

8. John Wairore. Influence of enclosure management regimes on rangeland rehabilitation in Chepareria.

John's study focused on Management of enclosures. He found differences between sub locations in Chepareria. Vi have had huge impact on use of enclosures. First enclosures were used to mark boundaries, but now also for control of grazing to have feed during dry season.

So far he has collected data during wet season, dry season yet to be done. 120 households visited in Chepareria.

9. Vera Karmebäck. Traditional gender roles in state of change, in Chepareria.

Have the gender roles changed with the establishment of enclosures and an increasingly sedentary lifestyle? Men are in charge of the big economy and decisions, while women are responsible for minor decisions like poultry, human food, etc. Female gets more responsibilities over the expensive cattle, due to enclosures and hence the animals stay at the farm. Somehow household chores more shared, for example when females go to market to buy food etc. the men then take care of the house. Huge change! Females are now starting with more small businesses.

10. Simon Wittich. Agricultural commercialization in West Pokot - a qualitative study from Chepareria and Kongelai.

Why are processes of agricultural commercialization different in Chepareria and Kongelai? The proximity to strategic facilities, the environmental favorability, mindsets and attitudes and level of knowledge, are all factors for a household's ability to transform from traditional to modern systems. Road in Chepareria can be compared to developing line, same as the river in Kongelai, where dynamic households tend to be located.

11. Antonia Grönvall. Animal husbandry in Chepareria (master student)

Ongoing study in Chepareria. Baseline survey with interviews and observations of farmers with enclosures compared to farmers without enclosures. Why isn't everyone using enclosures?

Other presentations:

Robert Lindgren. Sustainable energy from biomass in combination with improved fallows (to be ... PhD student). Introducing future PhD project - Sesbania and other fast growing trees used for making pellets to use for electricity. Fast growing trees in this region that serves a lot of purposes. Maybe of interest in Chepareria.

Deborah Goffner. The Green Wall Project for the Sahara and the Sahel Initiative.

CNRS Research Director (France) based in Senegal and Sweden, works with The Green Wall Project with 11 countries in Africa. 90 % of population in Senegal are herders. In average 300 mm of rain in a year. Planting trees in Senegal and now monitoring "new ecosystems".

SLU Global (Anders): Restoration Development Theme with idea to contribute with knowledge and links to other organizations and policy makers. Could also provide funding for different expert groups.

SIANI Expert Group (Gert & Magnus): Strives to get restoration discourse outside academia through e.g. workshops but also wants to engage Swedish researchers and other organizations.

PhD course on restoration (Gert): started in September. 22 students (from 5 East African countries Sweden), including two week field course in Kenya when the Triple L research area will be visited.

Ping machine (Gert): have not been working for two years, but now it works and has been running in Chepareria and Kitale. Continue work in December and Gert will then train people in Kenya to use it for more measurements next year.

Application reports;

3 to VR-Uforsk, 1 to Formas (no funding) and 1 to SRL (funded). Why no research money? Feedback says too much focus on literature, lack of method descriptions, even if good subject. Many good applications and the competition are higher nowadays! Need to learn from this and discuss how we can improve and change, to get money again.

Ongoing writing efforts:

No text yet. Steering committee need to start writing to have some kind of text on Sunday. Student work should be good enough to be published by itself, but if not it could be included here. John and Regina are working on their first manuscripts to publish. Vera and Magnus are working on the second and third. Julia and Per are almost finished with their first one. Göran Bostedt, together with Gert, is writing on a manuscript about nutritional food. Laura is also doing one. February/March everyone should go into application mode, and in early April the deadline for applications are done. Manuscripts should be finished before this! On the 22nd the steering committee will start structuring the writing.

Up-coming research calls and application strategy:

USAID - Powering Agriculture: An Energy Grand Challenge for Developing, Dec 1.

Global Resilience Partnership. A three step call, aiming to provide a team with an innovation that can have an impact on acute shocks and chronic stresses. Application in three steps, with first deadline November 30. Need a good team that can do something. Need different organizations. West Pokot: Triple L, VI, ICRAF, Kenya Uni., local groups. Winning angle; enclosure systems. Ingrid coordinates an application where Triple L is partner.

CCAF has several calls. (more than CRP calls)

PIRPAM blog, Francois Stepman. With lots of information of calls, etc.

Visit universities for 2020 calls.

Wednesday November 19th.

Re-caps from yesterday and future thoughts:

Group 1: (Mohammed, Madeleine, Mikael, Joshua, John, Regina). On some suggestions we immediately agreed on action, these are inserted in ***bold italics***.

- data base, to be able to present all data from all studies
- simple website "platform", easy to use; ***all agreed that we should buy the service for this***
- similar research groups - can we learn from them?
- in 3-4 months: policy group, to explain data with positive message. In english, swahili and pokot. ***The SIANI expert group might fund the production of such policy briefs.***
- being able to capture dynamics: what can different scenarios mean for West Pokot? Important to understand both history, today and in the future
- when out in field: use same coordinate system "UTM 36N", ***all agreed!***
- environmental economist (Nairobi-Gothenburg collaboration)
- mapping enclosed areas, not only in West Pokot and relate with other studies to connect different counties. This type of "country enclosed map" is yet not produced.

Group 2: (Per, Vera, David, Magnus, Simon, William)

- studies start to overlap, important to understand and avoid to repeat ourselves.

- what is the purpose of our work? Can we compare Chepareria to other areas?
- leave out historical explanations and focus on today and future instead
- focus on dryland, to be able to compare different regions

Group 3: (Ingrid, Anders, Martha, Robert, Julia)

- how can different studies work together and build on each other? Combine different sciences
- open access to data - website: both within project but also for external use
- popular text from each student project, news. **Agreed that this is to be included in all future student projects, a one page summary directed to end users.**
- funds to sponsor this? **Hence this funding is for retroactively write that for previous students. SIANI expert group may fund.**
- identify local entrepreneurs and the local needs
- communicative platform: how can we combine our knowledge and all the data we already have?
- smaller working groups within each area, for example social science vs animal science. Can start with the students, just for contacts. Madelene says NO to this, not good to separate the different sciences areas. But something to keep all contacts together easy.
- Need for an updated concept note on the web site.
- facebook page?

Group 4: (Peter, Stephen, Deborah, Antonia, Gert)

- we need to "cash in all the data" - combine all small studies
- what do we have so far? How does it connect to each other? What is missing?
- website
- enclosures should not be focus. The focus should be on land-use change!
- we have only ONE, ongoing livestock-based study, need more. West Pokot is still livestock-based in farming and might never be crop based as main income. Therefore we need more studies on livestock and livestock farming
- hydrology is something we still lack as knowledge. Water is important and the lack of rainfall data is a problem. Can we start collect basic rainfall data? **Yes, agreed on. Gert will initiate this in April 2015**
- landscape perspective, instead of just focus on farming
- possibilities for experimental research? Not easy because of time consuming. Alternative: look at best 20 farms, what can they learn us? Advices for organizations like Vi.
- couple students together in a mix of sciences

General discussion:

- Magnus ask: What are we actually looking at? Important to allow us to step back and get an overview of what we know and not know so far. Deborah propose a mind map.
- Mikael shows maps over West Pokot from Google Earth from 2002 and 2014, where we can see many differences between the pictures, with visible enclosures. Mohammed and Magnus point on the importance of finding satellite pictures from before the privatization - was enclosures there before? Madeleine point that we can use the elders for knowledge from the past. William confirms that fences was not used when Vi came in 1986, the land

titles for privatization started in the 90s. Vera points on the differences within divisions, not even all in Chepareria have titles yet, they still use communal land (like highlands).

- West Pokot County has started with a development report, both on farm level and up. Ingrid knows people to ask about it. Bring up question tomorrow!

PhD presentation, Julia Wernersson:

University of Copenhagen: Uncovering the "Devil in the details" through critical source theory. Focus on West Pokot. Critical Social Theory focus on the power relations, with key concepts such as power, agency, knowledge, identity and intersectionality. Finding the devil in the details as well as hidden gems of possible opportunities.

Mohammed

PowerPoint presentation: Dynamic Drivers of Disease Consortium in Africa (ESPA: ecosystem services for poverty alleviation). Present study as similar to Triple L, with a good structure of data collection with GPS coordinates, elaborations, specified and easy to use-data. Good, simple figure to simulate the different research areas, so everyone knows where they are. This shows how important the structure and organizations are when we plan and work within Triple L, both in proposal writing and when in field.

Discussion: should we find more specific researchers to get more specified studies and knowledge. Climate and rainfall data is something we can work on like this.

Cross-group discussions

Group 1

What can Triple L give/offer to the people of West Pokot?

1. Confirm that it was good to start with enclosures

Enclosures are some sort of intensification leading to diversification and move into enterprises

- What is good?
- Carrying capacity: number of livestock per unit land, sustainability to a certain point before it reach the tipping point,
- Who gains (enclosure adopters – more milk, health) and loses (still grazing free, no titling) – more now than earlier maybe? Farmer typology. Inform the next strategies.
- Losers could become winners if moved in to the market and higher value-chains.
- How small units can be held? Maybe propose other enterprises, bee keeping, poultry, mushrooms etc. – inform. Those with small units will go from cattle, to goat, to poultry.

2. Indirect effects of the change – environmental services.

- Riparian vegetation – less erosion, water retention, ground water recharge - hydrology
- Carbon stock
- Organic matter leads to fertility gains
- Trees will give higher productivity

3. Intensification (enclosure for example) and diversification will give higher adaptation to climate change or other drivers – population increase

- I. Show systems that give multiple products and services - Both market and subsistence: Fruits, pools, fodder, shrubs, livestock, trees for nutrients, livestock (goats, sheep, poultry), living fences, sisal,
- II. Farm typology might be needed – interventions could hence be different
- III. Who should be informed?
 - i) Official administration: County Government, extension service of agriculture (water, livestock and forestry and natural resources. Ministry of Planning: Champion agriculture and conservation people to meet identify needs.
 - ii) Confirm if there are community groups – is the lack of these a problem? Water users association (usually along a river or dam), charcoal groups – to organize make it official, a group with whom the government can discuss. Kenya charcoal working group - controlled extraction.

Areas for research:

Economy: The market, value-addition, bulking and chains. Units: e.g., cow day exchange. A baseline to characterize goods and services (enclosure benefits) in West Pokot and other markets, and the value-chains and demand for various products.

Group 2

An overall framework is important. But issue: can't work until more funding. No more funding without a very good proposal. How to manage this? Important to discuss how West Pokot can be compared to other locations. The unique factor is Vi - how can we avoid getting too restricted to Vi and West Pokot? Is there any enclosures going on in other areas? How can we in that case use this work and combine our data?

Will the enclosure systems be sustainable for soil, livelihood and crop production? Or are we getting restricted by this for further development? Is this the best production system?

Write a conceptual framework paper? To support a project application, to refer to and build on. To avoid spending text explaining theory and background in the actual application. Better to be able to refer to published papers. Referring to enclosure research in Ethiopia with a huge database, tracking back to early 90s.

Need of platform and database. What if we had a pool with the students ideas and try to plan and combine the students according to subjects etc. To get the best group in field. Structure is important, especially now when Triple L finished the first phase.

Ewa Wredle has time and freedom from SLU Global!

New focus within Triple L: now today and the future. Before (last year): today and before.

Group 3

What we have collected so far is quite a lot! If we combine our data into one knowledge bank, we have something good to start from. Can we write a new proposal from this as a start?

Model for Chepareria:

Enclosures - Privatization - Demography

Livestock based (livestock mainly income source) --> maybe always will be! And that might not have to be "wrong". (Climate not favorable to crops, dairy market increases, increased demand of meat, data showing livestock continues to be main focus even on good farms).

This is happening in Chepareria now,

BUT this doesn't have to occur. Can't say it black or white.

Deborah points out that we need to see different alternatives.

Blooming, quite dynamic livestock market

--> Meat market likely to increase

--> Livelihood possibly spread to other areas?

--> Starting point for many of the locations in West Pokot is common

Group 4

Database and platform is important for better communication, collaboration and accessibility to already collected data.

"action research" - what to do next? How can we continue with actions, avoiding to lose farmers' interests

challenge with field transport, both costly, time consuming and sometimes difficult to use. Can the translator have his own motorbike?

pokot students should be recruited

how do we "sell" our multidisciplinary strength?

What are we lacking (in disciplines/competences)?

good to invite exclusive people, outside of TripleL, to have some extra eyes

second translator in pokot, maybe female?

education for translator?

Concrete ideas on what to do with the SRL funding

Not allowed to pay staff salaries or scholarships to students. Continue with students though: some can get MFS scholarships, but some can use SRL money for transportation and experimental costs.

Who will get the opportunity to come and do the research? Use social media to reach out to students around the world to find the best proposal to continue work on.

Subjects to continue research on: livestock, market chain, hydrology, etc.

More quantitative research, instead of qualitative data like before?

Diagram on new government structure with ministries etc to easily understand present situation in Kenya and West Pokot

Book "Tricillians" (climate smart): participatory methods --> Ingrid suggests to write a Triple L book until 2016 (journal online if not too costly). Target group? Depending on if choose book or journal.

Annual Triple L workshop:

Next year's workshop in another area in Kenya? Or another field trip, not to Chepareria? Where in Kenya are enclosures located besides in West Pokot?

Broadens knowledge and contacts

1-2 weeks "learning weeks" with extended field trips and an annual workshop in the end?

November is a good month of the year to meet

leave the "enclosure and social science discussion" and move on. Use previous experiences and open up to other areas in drylands. Overall theme: land-use change frustration not to go forward. Have had several workshops, but don't get forward. Steering committee need to take action regarding decision making the coming days.
Should Triple L participate in other activities?
interesting question, good to be visible outside of triple l
also to invite other organizations
Kitale agricultural show

Thursday November 20th

We started this day with a pre-meeting before the West Pokot officials and policy makers arrived discussing:

Which message do we want to give the policy makers from West Pokot?

As fast as possible start with discussion on how to continue

Simon: positive feedback first, to get everyone onboard

Important to get visitors to understand that we are RESEARCHERS and not coming to develop in the name of Vi Agroforestry. But research should be in line with their needs.

Julia: lots of changes in West Pokot - can we frame our thoughts and also get more input from the policy makers on what needs to be researched on?

can we find some keywords on what to do research on in different areas. For example 3 keywords to work on in livestock

write on the whiteboard to recap and confirm the discussion and keywords

Past, what have happened and what have we missed?

Now, what can Triple L contribute?

Future, what is the vision for West Pokot?

important to not restrict the discussion too much too early. Visitors need to understand what Triple L are doing in the field, but we shouldn't tell them what to answer.

need to indicate what we are doing now and introduce the new funding applications, can the policy makers and county government contribute.

Participants and policy makers from West Pokot, with expectations of the meeting.

Lonah presents, with William translating to kiswahili. All visitors present their name, profession and what expectations they have:

Lonah, VI Agroforestry, respect each other's opinions.

William, VI Agroforestry, everyone should be active in

Peter Loroyo, chief Chepkobe, expect something from Vi and researchers

Julia, Copenhagen Uni., hear what people from West Pokot think

Samuel, chief from Pserum, to get input to help him develop Pserum in future

John, chief Kipkomo, to get help developing West Pokot

Emanuel, chief Senetwo, to see the impact from Vi since the 80s and up to now

Peter, Jomo Kenyatta University, to see how we can perceive with the challenges

David, University of Nairobi, understand how we should continue in West Pokot

Anders, SLU, learn more from West Pokot and the past, present and future

Madeleine, Gothenburg Uni., want to find out what role the scientists have in the area

Ingrid, ICRAF, discuss and find a partnership between triple L and West Pokot

Mikael, SLU, to learn and understand how to continue from today

Joshua, Vi Agroforestry, how can we make Triple L sustainable

Robert, Umeå Uni., nothing to add

Michel, Ministry of Agriculture in West Pokot south sub-county, how to involve local community to develop West Pokot

Gilbert, Ministry of Agriculture in West Pokot south sub-county, agree with previous

Wisiko, Ministry of Agriculture extension officer in Kongelei, how can we avoid farmers falling back to old habits when the researchers leave the area

Charles, Ministry of Agriculture in West Pokot south sub-county, interact with many different people

Deborah, French Research Center, share experiences from Sweden and Senegal

Simon, Lund Uni., sharing expectations

Regina, Jomo Kenyatta Uni., learn and share more from West Pokot

John, Ministry of Agriculture in West Pokot south sub-county Livestock, how can I assist my farmers in advices

Benjamin, extension officer for Triple L in West Pokot, team working

Per, Gothenburg Uni., nothing to add

Mohammed, ILRI, want to learn more from West Pokot

Gert, SLU, to learn research priorities for West Pokot

Antonia, SLU, great discussions to get lots of work as the meeting's secretary

William presents Triple L with a short background of how it has developed, and explaining the partnership with Vi Agroforestry. Clear out that Vi is responsible for the changes in West Pokot so far and Triple L are now here for research to find out how to continue. Gert adds that as a researcher, we are not able to implement changes in West Pokot. Our role as researchers is to understand the past, present and future with all different developments. David explains that the purpose of this meeting is to gather information, to capture the full situation in West Pokot, enabling to write the best report. Mohammed adds that one of the present issues is how we can broaden the research area, outside of West Pokot. Ingrid adds that we as researchers want to learn everything from West Pokot, not only the good, positive things happening but also the negative consequences that have happened and can happen in future.

Gert introduce the "exercise" on the whiteboard: the past, presence and future. Asks the audience: what have we missed in our understanding and research so far; and what can Triple L contribute with for the future?

1. What have we missed? (understanding past to present)

- Vi approached the farmers to help, but farmers failed to understand the process how to succeed. Challenge to get farmers to continue with this work when Vi leaving
- Vi give out seedlings and farmers still remains thinking Vi will come back, this cause problems in a long-term plan
- change the question to what have happened since Vi came?
- Vi have been helping with soil erosion, enclosures and claiming of land
- today there is grass
- improved animals such as Dopa sheep, Galla goats and Sahiwal cattle
- the group lagging behind could slowly learn from their neighbors
- today, the animals from "Vi-land" are highly valuated
- migration decreasing

2. What can Triple L contribute? (knowledge from present to future)

- water source
- animal diseases
- define gender roles
- settlement livelihood, when decreased migration
- drought tolerant crops and management/plans to avoid migration
- still communal land
- still big gullies
- different scales are important to used: sometimes farmer focus, sometimes landscape focus
- youths (parents starting to involve their children in farm work)
- make stakeholders involved more in the research

Q: Madeleine asks the audience; what have happened in West Pokot outside of Vi, who else have contributed to the development?

A: Ministry of Agriculture - improved livestock (Nasukuta Farm) and seeds, manure, etc.

Gert adds that Triple L is not only interested in agricultural changes, but also socioeconomic changes and so on.

Q: Anders concerned about water issue as a problem: what is the problem with the source of water? Is it different between seasons and between locations?

A: Chief answers that distance to streams and rivers can be a problem. Climate changes have made water even less. More dams are needed, because during dry season water is not enough. Farmers are now more careful cutting down trees, especially along rivers, to keep water in streams.

Q: Deborah asks if there is an increasing risk/nr of animal diseases in West Pokot.

A: Less disease with decreased migration and more dips. But it's not enough and many animals are still dying. The ministry have put in much effort with vaccination for foot and mouth disease, ECF, etc.

Audience have difficulties in understanding the different roles of Vi and Triple L. Gert presents the 12 student projects that has been done in West Pokot so far, to give a better understanding of Triple L and what has been done so far. Mohammed summarize in Kiswahili.

Highlight different areas and discuss keywords in each area we can continue research on:

Q: Youth - what is the role of youths in West Pokot? Are they interested in developing farming?

A: Despite youth group formations, challenge is only one: land ownership. The father owns the land, even if the youths work on the farm for the old man. Until the transition of owning, youth will not be able to be fully involved in development. But if they get land, they will continue as farmers. Youths take big responsibility even now, to prevent environmental changes and improve livestock production. The culture is to be depending on parents and even if youths leave home, he will come back home.

Madeleine comments: want to meet these youth groups!.

The youth is very important in West Pokot and we should start education in Primary Schools, to enable youths to succeed as farmers in future. The use of technology is also important, telling farming is a business (for example zero-graze systems). It is also important to educate about different risks, to prevent accidents and tragedies. Youth groups are important to involve and work with.

Livestock production - increased demand of milk, meat and eggs means demand of improved technology

Q: Gender roles - how is the community working with gender roles in future? Is it different from now and before and how is the future?

A: husband and wife working closer together, compared to the very specific roles each gender had before. 20 years ago, the ladies and youths could not sell goats on market, but today everyone can do it. Education is also equal nowadays. Land ownership is still a problem with "expensive marriage" and the ladies are still "used" to be married and give parents money/animals.

Q: Are ladies allowed to own land and livestock to 100%?

A: According to chief, both ladies and men are allowed to own land and should get the same education.

Q: Land tenure - how is the history and how are they planning to continue with land tenure with private and communal land?

A: land has been set apart for activities such as schools. Land size subdivisions are not equal; the one who asked first got it. There are still some communal lands in the highlands, where families and neighbors work in collaboration with each other. Those who use private enclosures don't allow others to graze their animals, even if their animals are allowed to graze in communal lands during dry season. Use of land is different in each sub location.

Q to Ministry of Agriculture – what are opportunities and priorities in West Pokot?

A: except from dessert, West Pokot has all different vegetation zones with high and low potential areas. The priorities are therefor different in different areas. For example, in Chepareria fruit trees, sorghum, beans are prioritized. Improved livestock are Sahiwal cattle, Galla goats and Dopa sheep. The overall priority is on agribusiness enterprises, such as commercial markets. Right now the ministry is forming producer groups to form these enterprises. The slaughter house in Chepareria (now under construction) is under the project ESP, Export Slaughterhouse in Pserum, promotes improved animals. Collaborative societies (groups) working with bee keepers, sheep & goat, cattle, etc are promoted from ministry. Health and disease control is also one of the areas the ministry working with now (both human, land and animals). Finally, rural conservation is also prioritized.

Q: Communication between Triple L and West Pokot - how should we perceive this?

A: extensions used for ministry have registered all farmers they have been working with and can now communicate with each other through smartphones (not farmers). Stakeholder forum is another possibility where farmers can come and share their thoughts and Triple L qualifies as members to these forums. KALRO is another participant who has research groups for communication on quarterly meetings. Who is responsible for starting the communication, farmers or researchers? Depending on what the communication should include. For example

research results, the researchers are responsible to communicate their findings through for example field days, exhibitions, posters, radio and talking to farmers through extension officers. And another example is Dec 3 this year: Agricultural show in Chepareria. Farmers are also responsible to get information; to ask, to come to field days, to listen to researchers, etc. Technical staff usually passes over information from chief to community and this is a good structure Triple L can also use.

Joshua: remind the policy makers of the opportunity with Triple L, who can give West Pokot free research. It is now up to the local community to tell use in Triple L what to continue with. Research on land and fertilizers would be interesting since land productivity has decreased.

Research on maize production as main food crop

New crops, like sorghum is also promoted by ministry but research is lacking

Land and livestock research is most important, with that livelihood can be improved

The soil in West Pokot is shallow sandy and difficult to avoid soil erosions, more research is therefore needed to find out the best technology for avoiding this

Animal feed conservation and agricultural cultivation

Madeleine: who is the channel between Triple L researcher and West Pokot? William might be one and if he is not able, then someone else should be coordinated.

Mohammed adds that feedback from West Pokot is as important as results from Triple L. Is the work we do useful?

Ministry's future plan of data collection: Crop census. To be able to give statistics based on research. Today they have KAPPAB for data collection. No outcome data yet (no production results yet).

Lonah thanks everyone and encourage policy makers from West Pokot to continue giving advices on what to continue with in research. Gert thanks everyone. The meeting with the officials from West Pokot ends with a common lunch.

After lunch, Triple L group meets for a short briefing to discuss and summarize the day.

- good day overall
- biophysical ideas - have we covered the people of the areas?
- livestock and social scientists could be invited as well
- livestock is the stable income and crop is the next step, when the livestock is stable
- youth groups are a great entry point for communication to the community
- surprise that young people don't move (lack of education, culture and tradition)
- new techniques for high production in small areas
- if they just continue sub-dividing land, the plots will finally be nothing
- decreased land productivity, and other technical problems, already has been researched on and lots of data is available. Now trial is needed. Is Triple L the right platform for these trials? Maybe not. Important for Triple L not to intervene in making changes direct, we should help to give advices and findings.
- how can we enable long-term experimental studies using only students? Maybe by using multiple experimental trials, each for a shorter period to enable using MSc students but still get a quantitative experimental dataset
- what do we want to do? Can we include the wishes from West Pokot community? Maybe students can give some popular (short) article for the community.
- at barassa in Chepareria tomorrow it is important to keep it easy and simple

- summarize issues from workshop in one page sheet with photo and propose new research areas for students
- how can we find money?
- invitation to join quarterly meetings at KALRO, should investigate if Triple L representative is able to join sometimes?
- Farm scale versus land scape scale research
- water still important
- reduced migration equals decreased risk of spreading many diseases. But new production systems are coming up with zero grazing and improved breeds, which in long term can mean increased animal diseases again
- agricultural economist is needed
- extensive versus intensive livestock systems are different and should have different research studies for different results and advices
- important to divide Vi and Triple L.
- Once again, website is very important to spread information and collect previous studies.

Friday November 21st

The intention with organizing a public meeting (a *barassa*) in Chepareria (where most studies have been carried out) was to introduce and explain the Triple L Research Initiative and to report back to the community some of the research findings.

Barassa in Chepareria, audience filling up to ca 100

- Welcome by Assistant Chief Chepareria
- William – gave history and explained the different roles of Vi Agroforestry and the Triple L Research Initiative.
- Gert – thanked the local community for receiving us and talked of how and why research in Chepareria and West Pokot is important not only for the local knowledge but also in a global perspective and that we as researchers has curiosity as a job, so that we should be forgiven for asking many questions (even if they at times seems stupid). He then went on presenting some results from students' not present, see above summaries, and emphasized the importance of local inputs to make research questions relevant; and the resulting research results relevant to local farmers/users.
- Anders – representing the SIANI Expert Group on Restoration, dwelled on the importance for communication between researchers, local policy makers and farmers for us to understand the local context, to find relevant answers and to be able to put the research in larger, global, contexts. He also emphasized that we as researchers has a lot to learn from the local conditions and the local context; and from local farmers.
- Julia – told about her MSc research project, see above, and that she will be coming back as a Phd student.
- Simon told about his MSc research project, see above,
- Regina - told about her MSc research project, see above,
- Antonia - told about her MSc research project, see above,
- End and thanks by Assistant Chief Pserum

The Triple L team then continued with a field trip around Pserum and Kongelai.

Saturday November 22nd

The steering committee convened and starting the writing of a manuscript. Some student result might be included, and then respective student will be included as co-authors. By the end of March a manuscript should be ready for submission.