FACULTY OF BIOSCIENCE ENGINEERING

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RURAL FARMERS IN INDIGENOUS TREE SPECIES REFORESTATION: A PARTICIPATORY APPROACH FOR ADAPTATION MEASURES TO CLIMATE CHANGE IN UGANDA

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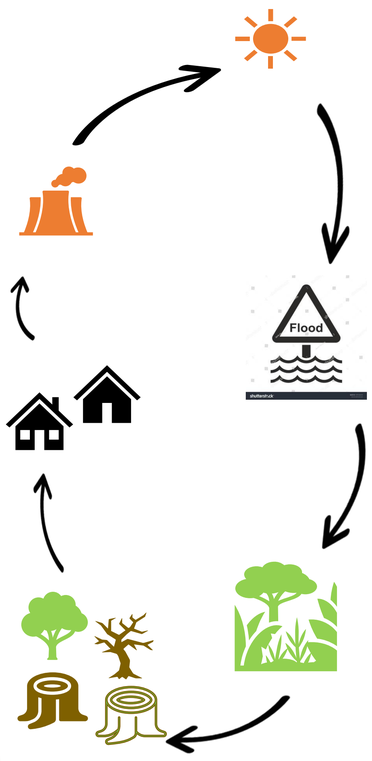
1. Introduction

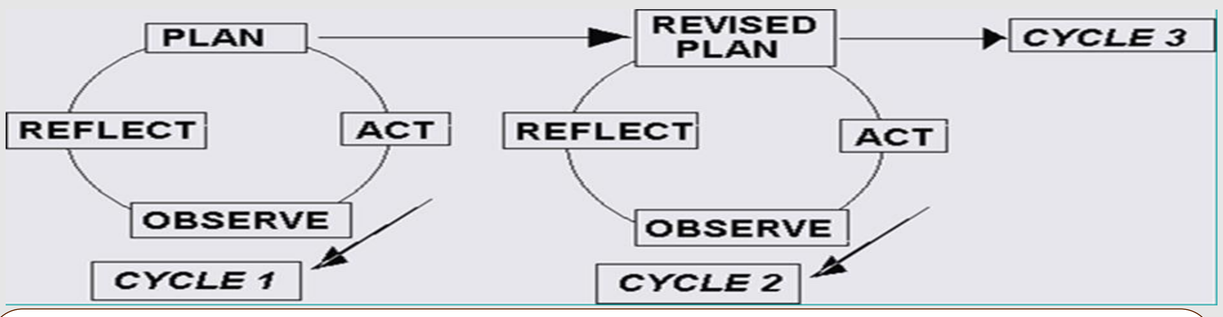


- The effects of climate change have been felt in many countries regarding long dry spells, floods, and drought.
- Climate change is understood in terms of changing rain seasons in rural communities of tropical Uganda.
- Human activities such as deforestation have increased the effects of climate change (Sale, and Agbidye, 2011).
- Deforestation is mainly for:
  - human settlement
  - Industrilisation
  - Income generation (through the sale of timber and charcoal).

2. The Problem

- Forests are home to 90% of terrestrial biodiversity and a feeding ground for some marine life, but most forests have been cut down (Pillay et al., 2022).
- For instance, Uganda has lost 15% of the primary forests that have been felled for industrialisation and human settlement between 2002 and 2022 (Global Forest Watch 2022).
- This implies a change in the rainfall pattern.
- The changing rain season prompted action research in central Uganda's Nalutuntu Sub-county Kassanda District.

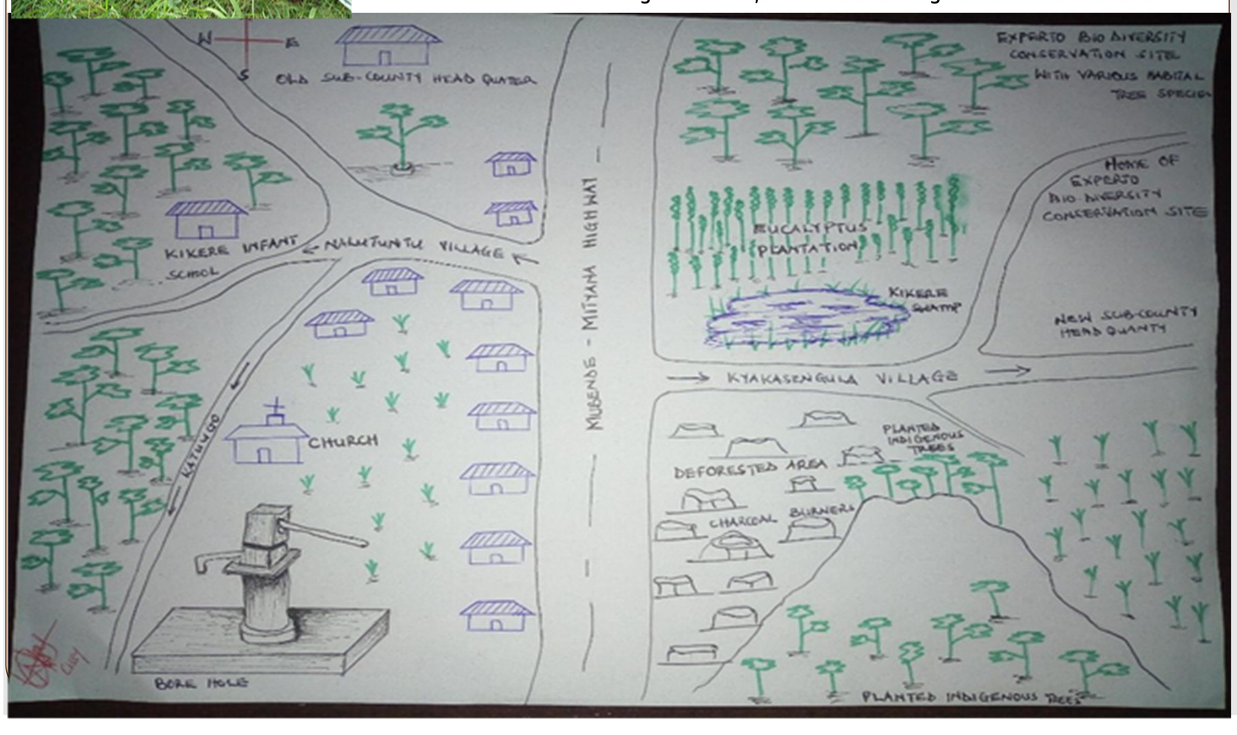
3. Methodology (Carr, and Kemmis, 2003)



3.1. Cycle One: November 2017-June 2018

- Activities conducted included

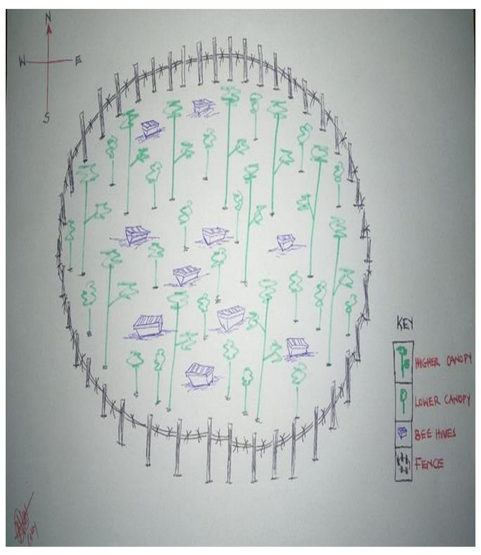
- A transect walk
- Asset Mapping (refer to the map below)
- An Environmental Awareness Month
  - Reawakening Indigenous knowledge
  - Cultural exhibition
  - Cultural music dance and drama on environmental protection.
  - Planting the first 1,500 tree seedlings on each farmer's land.



3. 2. Cycle Two: September 2018-May 2019

- Activities conducted included:
  - Training on environment and biodiversity conservation measures
  - Nurserybed for tree seedlings
  - Planting and caring for 1500 tree seedlings,
  - Evaluation meetings

3.3 Cycle Three



- In cycle three, mainly habitat creation of indigenous tree species, 2000 trees were planted.
- So far 800 trees survived of
  - Red stinkwood (Prunus Africana),
  - Bark cloth tree (Ficus natalensis),
  - Red-hot poker (Erythrina abyssinica),
  - Woman's Tongue or Siris Tree (Albizia Lebbeck),
  - East African Greenheart (Warburgia Ugandensis),
  - Umbrella Tree (Maesopsis Gemini),
  - Muvule (Milicia excelsa),
  - Albizia spp (Nongo),
  - Entada abyssinica A.Rich. (Mwolola),
  - Albizia coriaria Welw. ex Oliv. (Mugavu) (Tabuti, J.R., 2012).
  - The same trees were planted on each participating farmer's land in the first and second cycles.

4. Results

1. **Cycle One**
   - All activities were successful.
   - Of the 1500 tree seedlings planted, 550 trees survived.
   - 80 participants were involved both men and women including children.
2. **Cycle Two**
   - The training was successful.
   - Gradually chemical spraying was reduced, and the use of animal manure became evident to date.
   - Of the 1500 tree seedlings planted, 529 survived.
   - The number of participants reduced to 50 community members both men and women.
3. **Cycle Three**
   - Creation of a 1-acre habitat of various indigenous tree species forest.
   - Of the 2000 tree seedlings planted, 800 still stand.
   - The participants who concluded the cycle were 45 men and women.

5. Reflection

- Knowledge is culturally embedded.
- A hub of knowledge exists among the community elders as wisdom specialists.
- Grassroot communities understand their situation, they only need reawakening to harness the locally available resources and transform their communities.
- Sustainable co-existence of biodiversity and human beings must be promoted for ecosystem health.

6. Conclusion

- In promoting ecological stewardship, we need to unite efforts to create equitable and sustainable management of natural resources, harness menacing hazards and create viable and resilient adaptation measures to climate change.
- Besides, we can live in harmony with other living and non-living organisms in the ecosystem if we are mindful of our actions.

References

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