Environmental Science & Policy, Volume 147, September 2023, pp. 138-146
DOI:10.1016/j.envsci.2023.06.006

Evaluating barriers to effective rural stakeholder engagement in catchment management in Malawi

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Abstract

Water quality and quantity are heavily influenced by catchment management, yet without participation by local communities, opportunities for enhanced protection and conservation in rural areas is limited. In Malawi, the involvement of local actors and stakeholders in catchment management including environmental protection and restoration has been limited despite encouraging public participation through initiatives such as integrated water resources management. This paper explores the factors hindering local participation in catchment management, analysing stakeholder engagement by conducting in-depth interviews, focus group discussions and evidence syntheses in three contrasting catchments. Our findings reveal that procedures for identifying relevant stakeholders are not widely adopted, thus omitting key actors in the catchment management process. Rural communities were least involved in catchment management. Barriers limiting participation by local people were found to be interlinked and complex including the presence of weak regulatory frameworks, inadequate resources, a lack of commitment, corruption, a resistance to change, poor coordination, as well as local cultural factors. Analysis of the interlinkages highlighted areas for intervention in promoting stakeholder participation which would, in turn, improve water security at catchment level. A comprehensive engagement framework that considers specific socio-cultural, economic and political contexts to overcome the identified barriers is proposed.

Keywords: Governance; Integrated Water Resources Management; m Water policy.

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The final published version (version of record) is available online at DOI:10.1016/j.envsci.2023.06.006. Please refer to any applicable publisher terms of use.

Introduction

Stakeholder engagement guides organisations on how to engage individuals, the public or other organisations that affect or are affected by the implementation of its decisions. In natural resources management, stakeholder engagement or participation has been shaped through progressive international discourses since the 1972 Conference on the Human Environment in Stockholm (Fisher *et al.*, 2014). These have led to concepts such as integrated water resources management (IWRM) which advocates integrative and participatory approaches in the management of water resources (Global Water Partnership, 2017). The principle of participation has become a significant feature in international environmental policies such as (i) Article 6 Section 2 of Aarhus Convention (UNECE, 1998); (ii) Principle 2 of Dublin Statement on Water and Sustainable Development (Global Water Partnership, 1999); (iii) Principle 22 of Rio Declaration on Environment and Development (UN, 1992); (iv) Principle 10 of OECD water governance (OECD, 2015); and (v) Article 14 of European Water Framework Directive (Council of the European Communities, 2000). Key to these principles is recognition of the need to involve all stakeholders including local people in decision-making of natural resources management, particularly water resources.

Incorporating the participation principle in international policies echoes the importance of engaging users and other stakeholders in developing and managing water resources. However, these principles have remained entrenched in international policy documents or replicated in national government policies without effective implementation in practice. For example, Mauerhofer (2016) identified limited public participation in environmental matters globally. Similarly, Ker Rault and Jeffrey (2008) reported on the challenges in implementing public participation as a principle of the Water Framework Directive in the European Union member states, citing problems of its practicalities. Other studies have also highlighted how projects may fail due to ineffective participation from key stakeholders (Bourne and Walker, 2006; Missonier and Loufrani-Fedida, 2014). Yet, the benefits of an organisation engaging its stakeholders are many including increasing the quality of the outcomes for decision-making, establishing and ensuring trust, legitimacy and acceptance of management policies and decisions and helping resolve conflicts (Furber *et al.*, 2016). Stakeholder engagement also increases the likelihood of compliance with rules and regulations, thereby reducing enforcement costs (Nare *et al.*, 2011).

Recently, many governments have incorporated the principle of 'public participation' into their water-related policies and legislation. This has largely been motivated by the potential benefits of stakeholder engagement and global initiatives to promote participation. In Malawi, for instance, Principle 3.4.3 of the National Water Policy 2005 (Malawi Government, 2005, p. 6) states that; "*Water resources management shall be based on the concept of decentralisation and local participation…*" Despite the inclusion of participatory principles in the policy and legislation, evidence shows actual stakeholder participation in water management remains a challenge and yet participation is the most critical problem affecting natural resources management (Kamoto *et al.*, 2013). Of particular significance is the participation of rural communities who make up 80% of the country's population and who live close to water sources (Malawi Government, 2010). However, previous research has not explicitly identified who is involved and what the main reasons are for the limited involvement of rural communities.

Rural livelihood activities have been shown to cause catchment degradation across Malawi. Several studies have revealed high rates of deforestation, polluted water resources, and a lack of sanitation due to unsustainable land-use practices. For example, Wanda *et al.,* (2014) reported on the population-poverty-environment nexus forcing rural communities to engage in charcoal businesses leading to deforestation in the Lunyangwa catchment. This, in turn, has

increased silt loads affecting the quality of water abstracted by the Northern Region Water Board (NRWB), which supplies Mzuzu city and its surrounding settlements. In the Likangala catchment, Pullanikkatil *et al.,* (2016) showed how poor water quality was directly linked to degrading land-use practices by rural communities. Chimtengo *et al.*, (2014) analysed the environmental flows of the Rivirivi catchment and reported that human activities were causing low environmental flows and noted a significant reduction in forest cover across the catchment. These findings support the claim that it is mostly rural communities that cause catchment degradation which in turn degrades water sources and water quality (Nascimento *et al.,* 2018). It is, therefore, crucial that rural communities are engaged and participate in programmes that aim to protect and restore catchments.

Studies on public participation in water resources management have tended to concentrate on water supply, sanitation (Nare *et al.*, 2011) and use through management arrangements such as water users associations (WUA) (Adams *et al.*, 2018) and water point committees (WPC). Little published evidence is available on the involvement of rural communities in catchment water management in Malawi specifically and sub-Saharan Africa more generally. Yet, rural people account for a significant proportion of the national population. Without a comprehensive analysis of the current practice of rural stakeholder engagement, it is therefore difficult to understand the complex relationships and dependencies between water resources degradation, rural communities, and water policy. In this context, this research aimed to engage with rural communities and government natural resource managers to identify the key stakeholders, determine the extent of their engagement in catchment management; identify the factors hindering rural communities from actively participating in catchment management, and proposing a framework for effective stakeholder participation in catchment management.

Method

Study area

The study was conducted in three rural catchments (South Rukuru, Linthipe, and South-West Lakeshore) situated in north, central and south Malawi, respectively. Key physical and socio-economic catchment attributes are summarised in Table 1. Catchment selection criteria included economic importance (as natural resources including water provide natural capital out of which other capitals are made), range of stakeholders and logistical considerations. Linthipe and South Rukuru catchments supply drinking water to Lilongwe and Mzuzu, respectively. Lilongwe is the capital, and a hub for many industries, and Mzuzu is the main city in northern Malawi. Urbanisation is high since people have migrated to both Lilongwe and Mzuzu cities in search of employment. However, the increase in population due to urbanisation has caused catchment degradation. Population growth has increased demand for services including water and electricity, but energy supplies are insufficient both in urban and rural areas (Taulo *et al*., 2015), and there is a gap between electricity demand and supply (MCA, 2010). In turn, the gap has increased the demand for charcoal as an alternative source of energy in Lilongwe and Mzuzu (Zulu, 2010; Wanda *et al*., 2014) with charcoal production an important business for poor urban dwellers. The source of wood for charcoal are the forests in surrounding catchments and the resulting deforestation (Kamoto *et al.*, 2013) has impacted negatively on water quality and quantity. Some of the key protected forests reserves include Dzalanyama in Lilongwe, Lunyangwa in Mzuzu and Zozi-vayi in Ntcheu and the ability of these forests to provide ecosystem services has been undermined by deforestation (Malawi Government, 2010, 2011, 2015a). Poor urban dwellers are also engaged in sand mining and farming along the riverbanks. While sand mining is an important economic activity for peri-urban dwellers, it has exacerbated erosion and increased silt loads in surface water run-off, causing significant water quality problems downstream.

The case study catchments have relatively large rural populations (Table 1) with representation from a range of stakeholders including universities, government offices, and non-governmental organisations. This, therefore, provided the opportunity to interview a range of stakeholders in water resources management, including government officials at all levels (i.e., headquarters, regional office, district office, and local area), academics, private sector, civil society, water utility companies, and local communities with varied local organisations including irrigation clubs and conservation committees. The mix of stakeholders and their exposure to local community issues provided a unique opportunity to develop a deeper understanding of their involvement in water resources management.

Data collection

Field data was collected over six months in two phases: an exploratory phase to characterise the catchments between March and June 2016, and a detailed data collection between April and July 2017. The first phase also served as a pilot to improve the questionnaire design and to establish contacts for the second phase of data collection. Data was collected using three methods: in-depth interviews (individual face-to-face), group discussions and document analysis. In-depth interviews and group discussions were conducted with participants from government agencies, NGOs, local communities, academics, and water professionals (local and international). The study conducted a total of 55 in-depth interviews in Linthipe (29), South Rukuru (33) and South West Lakeshore (17). Four additional focus group discussions with local communities, policymakers and service providers were conducted in Linthipe and South Rukuru. Participants were recruited purposively using snowball sampling with inclusion criteria including level of knowledge, willingness to participate, and gender. Interviews were conducted in the preferred language of the participant, either Tumbuka or Chewa or English. During the interviews, participants were split into two groups: local community and policymakers/service providers (government departments, ministries, water utility companies, academics, private companies, and NGOs representatives). The division was based on participants' roles and knowledge of water resources management in their respective catchment. As a result, specific and relevant questions were asked of the two groups of participants. This was followed by an in-depth critique of relevant documents to assess stakeholder engagement perspectives.

Data analysis

Information gathered from the interviews were recorded using a notebook and/or audio recorder and later transcribed. Information was analysed qualitatively using thematic analysis (Maryring, 2004; Braun and Clarke, 2006; Robson and McCartan, 2016) with initial familiarisation by reading the transcribed data, followed by coding, involving extracting sentences from the interview transcripts of relevance to the research topic. The coded data were then iteratively adjusted into sub-categories that could be assigned into themes. Re-reading and comparison further refined the identified themes. This study, and its informed consent procedures, were approved by the Cranfield University Research Ethics Committee. Written informed consent was obtained from all in-depth interview participants.

Results and Discussion

The key findings are grouped under four main headings including (i) identification of stakeholders in catchment management; (ii) extent of stakeholder engagement; (iii) barriers to rural stakeholder engagement in catchment management, and (iv) proposed stakeholder engagement framework.

(i) Identification of stakeholders in catchment management

Participants were asked to identify stakeholders of catchment management to establish who are really involved. Generally, the scope of stakeholders identified via the individual interviews was narrow compared to those through the group discussions. The narrow scope of stakeholders identified through individual interviews consisted mostly of government departments and ministries.

We [used to] involve Forestry department, Environmental Affairs department, Meteorological department, Land Resources department, World Vision, Danish International Development Agency (DANIDA)…Recently it is the same Environmental Affairs department, NGOs as we had water, sanitation, and hygiene (WASH) project under United Nations Children's Fund (UNICEF) and Community Water, Sanitation and Health (COMWASH) (Government officer).

Stakeholders identified through group discussions, on the other hand, were numerous and diverse.

Table 2 summarises the stakeholders identified via group discussion in South Rukuru catchment, which included most key stakeholder groups such as government, private sector, NGOs and the general public. This is contrary to the list of stakeholders often identified through individual participants, which mostly lacked key stakeholders for catchment management, particularly community members. The differences in scope of the stakeholders identified shows it is important to build a picture of the stakeholder landscape from different perspectives so that potentially important stakeholders are not omitted.

There was a similarity in the typology of stakeholders identified by different groups of participants across the three catchments. However, some stakeholders were generally cited more than others. For instance, government departments and ministries and other related agencies such as water boards were most cited in Linthipe and South Rukuru. Community members were the least cited stakeholders except for South-West Lakeshore catchment where most participants identified the rural community as key stakeholder group.

Stakeholder identification is the first step in the process of engagement, and its core purpose was to identify those who were relevant to a particular issue or problem. The range of stakeholders for natural resources and particularly water resources is broad and requires appropriate processes allowing the most relevant stakeholders to be chosen by those initiating engagement. However, our findings suggest that most government officers undertake stakeholder identification individually and do not consult with other government departments or ministries to define stakeholder lists as mentioned by one governmental official:

Generally, individuals who are organising a meeting are the ones determining who to involve or invite to a particular meeting or activity. It's not common to ask others so as they help to enlist participants. And often, this is also dependent on the budget. (Government Officer).

Our research showed that the limited stakeholders identified were the ones who then resulted in marginalising others such as community members. For successful engagement, studies (Krupa, 2016) have recommended the use of mixed methods such as expert opinion, focus group discussion, semi-structured interviews, snowball sampling and tools to ensure that as many relevant stakeholders as possible can be identified.

No procedure was found to exist for stakeholder identification or engagement in all three case study catchments. Current practice is that government officers identify stakeholders individually. While it is comparatively straightforward, less time and resource consuming, critics argue that this approach is limited because individual knowledge may be inadequate and individual interests and motivations biased, affecting the identification process (Krueger *et al.* 2012). The frequent omission of rural communities from the list of identified stakeholders illustrates how personal motivations and interests can result in poor stakeholder selection

choices. Further, the omission of rural communities in water resources management could also be the result of the criteria used in the identification process itself. For example, stakeholders were identified based on the experience and knowledge of the organisers of a particular meeting. In most cases, previous interaction with a particular stakeholder group determined the organiser's choice. When questioned why they considered the list of stakeholders cited, some government officers stated that the ability to contribute financial resources towards various water-related management activities often influences their choices. According to one government officer:

They provide funds, so we hold meetings… Like UNICEF has been quite instrumental in terms of funding (Government Officer at Ministry Headquarters).

Such criterion for stakeholder identification would often exclude other key stakeholders such as rural community members who have low capacity to contribute to catchment management financially. Nevertheless, rural community members are key to catchment protection and conservation as they provide the sources for their livelihoods. Failure to recognise rural communities as stakeholders at the outset of policy formulation makes it challenging to involve them later during project or policy implementation. In this study, we found that policymakers and service providers viewed the role of rural community members to be only as implementers of measures and programmes that had already been planned. Most policymakers and service providers did not see the importance of engaging with the rural community during the formulation and review of the policy. However, best practices for stakeholder engagement demands identifying all relevant stakeholders as early as possible to ensure their engagement and representation throughout the policy processes (Butler and Adamowski, 2015; Megdal *et al*., 2017).

(ii) Stakeholder participation in water policy

The extent to which stakeholders were engaged varied among catchments and stakeholder groups. There were also differences in engagement throughout the different phases of water policy development (i.e. formulation, review and implementation). Policymakers and service providers were asked to comment on whether they engage rural communities in water resources management and particularly in water policy formulation and review. In Linthipe, the majority (73%) of participants reported that rural communities were often excluded in most policy processes. The few participants who acknowledged involving rural communities explained that they did so through community leaders, usually via chiefs. Most rural community participants disagreed that such engagements take place as they did not recall their chiefs providing them with any information. This contradiction raises concerns about whether adequate follow-ups were undertaken by policymakers and service providers to ensure that chiefs disseminated the information given to them during meetings where they represented their subjects. One community member from Linthipe catchment mentioned that:

There has never been a day when the chief [Traditional Authority] had called for a feedback meeting to brief us (Community member).

The majority (80%) of rural community members in Linthipe catchment stated they had not been engaged in discussions regarding water resources management by policymakers or service providers. Some service providers also highlighted the lack of engagement expressed by rural community participants. One participant from a water regulatory authority observed that rural community engagement was only undertaken with regard to water utilisation and sanitation with little focus on catchment management:

[As a country] we are not very good as far as we isolate issues. In general, to some extent communities are involved at all levels/stages. We have Water Users Associations, boreholes

[water point committees]. So, in terms of specific projects, participation is there only on utilization but not on the whole water cycle. Water must be treated or managed in a hydrological cycle manner. But for utilization we are very good but not the total hydrological cycle especially the conservation part. (Water Regulatory officer)

This participant noted that whilst water point committees, which are involved in the maintenance of boreholes or shallow wells, had been established across most parts of the country, no equivalent committees had been set up in the communities to manage catchment conservation and protection activities. As in Linthipe catchment, a significant proportion (69%) of policymakers and service providers in South Rukuru catchment stated that local communities were not involved in the policy process at any stage. Those who claimed rural community engagement reported that Water User Associations (WUAs) represents the rural communities. However, rural community participants from WUA committees contested this view and reported that they had never participated in policy processes.

We/I have never participated before. The water right [water permits for abstracting water] awareness, I guess it was only aimed at informing us to pay not really awareness as for water management…… The major emphasis was that we need to pay and if we cannot pay, they will close the dam and the abstraction of water must stop forthwith. It was not approached from the point of managing water resources. (WUA committee member)

Participants in the group discussions also concurred on the lack of engagement of rural communities. Whilst extension workers live in the community and engage on a number of issues, they do not focus on catchment management. Often extension workers concentrate on agronomic practices either because they were only trained in agriculture, or they work under the agricultural extension services department.

They [extension worker] teach us about farming: crops and livestock…. We don't have an extension worker who comes here to teach about catchment management. (Members of the community during focus group discussion)

However, our findings showed that the government could benefit if extension workers were also empowered and trained in water resources management and catchment conservation. Extension workers are stationed in most rural areas, commonly referred to as extension planning area (EPA) under the agriculture department. Unfortunately, they are primarily responsible for instructing and helping rural farmers with crop and animal production. However, departments of Water Resources, Water Supply, Environment and Land Resources directly responsible for catchment management or water resources management within the same Ministry of Agriculture, Irrigation and Water Development do not have officers at that lower level. This study suggests a greater harmonisation of activities at a lower level for the departments in the same ministry is needed.

While lack of rural community engagement was largely attributed to the failure by government and other practitioners to engage, some participants observed that there were low levels of interest in catchment management amongst farmers. Poverty deterred rural communities from participating. Farmers were too busy meeting basic livelihood needs and catchment management activities in this context were considered to be less important.

Most often, they are just too busy trying to survive to bother about such matters (Representative of an international consulting firm on catchment management)

In the South-West Lakeshore catchment, all rural community members who were interviewed confirmed that they had never been engaged in water policy formulation and review processes. This lack of participation demonstrates that stakeholders from rural areas are often not incorporated in environmental management decision-making. However, rural communities are

key in catchment conservation thereby making sure catchments continue to provide high-quality drinking water and supporting agriculture and other livelihood activities.

Our findings reveal that rural communities are often not adequately involved in water policy formulation and review. Several studies have been conducted on stakeholder participation in the past providing detailed analysis on types of participation and their implications on a project or programme. Basing on several typologies for participation developed by various researchers (Arnstein, 1969; Pretty, 1995; Luyet *et al.*, 2012; Reilly *et al*., 2016) our study found that in Malawi rural communities are least engaged. This minimal engagement has been referred to as 'passive' (Pretty, 1995), 'information' or 'informed' (Luyet *et al.*, 2012; Reilly *et al*., 2016). Informed participation refers to participation whereby those making decisions only share project or programme information with other stakeholders. It is passive and one-way dissemination of information (Pretty, 1995). Arnstein (1969) referred to it as non-participation in that there is no input expected from the engaged stakeholders. Arnstein (1969), while developing the 'ladder of citizen participation,' noted that when participation ends at information or consultation levels, it is measured by how many people attend meetings, take-home brochures, or answer questionnaires. This does not lead to an improved quality of decision-making in the policy processes. Manzungu (2002) referred to such participation as a "mere headcount" of stakeholders.

(iii) Barriers to rural stakeholder engagement

Our study identified 23 barriers that directly and indirectly limited the participation of rural stakeholders in the process of water policy formulation and review (Figure 1). Direct barriers prevent the rural community themselves from participating while the indirect barriers affect policymakers and service providers mandated to engage rural stakeholders. For instance, poverty prevented rural communities from taking part in catchment management activities while inadequate financial resources limited government and other organisations to fully engage rural communities. Most of the barriers were common to all three catchments.

The barriers identified were found to be strongly inter-linked displaying a cause-effect relationship (Figure 1). The cause-effect revealed that these barriers can be divided into three main groups: primary, secondary, and tertiary. The groups, however, do not mean that primary barriers are the most important. The 'primary' (or immediate) barriers were often the underlying causes for non-participation by local communities and manifested earlier than the rest of the barriers. When primary barriers are not addressed, they lead to secondary or tertiary barriers. For instance, most members of rural communities cannot afford basic livelihood needs and are therefore only interested in livelihood activities that would bring them basic needs such as food and shelter. Such community members will always be more interested in community programmes that offer monetary incentives. As a consequence, they demand compensation in the form of money (secondary barrier) for their participation.

The issue of handouts has destroyed our communities. If you go there without, let's say, a drink [food] or without an allowance [money], people will say "no". We will not come; we are not attending (Government Officer-District Office).

When their expectations are not met, they no longer have any interest (tertiary barrier) in catchment management activities. One participant described this cause-effect:

Another thing is poverty. It is actually poverty that forces the community to expect something from service providers (Government Officer-District Office).

These findings support earlier studies stating that poverty leads to natural resources degradation (Scherr, 2000). This also explains why community forest management has not been successful in Malawi (Pinyopusarerk *et al.,* 2014). High levels of poverty and lack of opportunities force

rural communities to produce and sell charcoal in urban areas which increases deforestation. Despite awareness of the effects of deforestation on water resource management, rural communities have resisted change because they fear losing income.

Furthermore, barriers in each group (primary, secondary, and tertiary) were ranked qualitatively in order of their increasing effect on stakeholder participation (vertical arrow in Figure 1). In the second category, for instance, limited financial resources were mostly cited and reported to impact rural community engagement and therefore ranked high than poor information flow or implementing competing programmes or projects. In order to carry out most of the catchment management activities and to comprehensively involve rural communities, government departments and ministries and other organisations will require financial resources. In ranking the impacts of barriers on participation, a government official described it as follows:

I think number one barrier is [financial] resources. Because what happens if you want to engage every partner who is an interested party in water resources in that particular area you need to spend of which most of the stakeholder organisations do not have that budget (Government Officer-Regional Office).

Such remarks concur with reports on funding and investment in the water sector in Malawi. In the recent past, the water, sanitation and hygiene (WASH) sector has suffered declining funding from the treasury which has forced the ministry responsible for water affairs to implement less and fewer activities for the development of water resources. UNICEF Malawi (2019) reported that only 1.1% was allocated to the WASH sector and it was one of the lowest budget allocations compared to its neighbouring countries in the Southern African Development Community region. Compared to challenges with financial resources, on one hand, poor information flow, on the other hand, may not have the same impact on stakeholder engagement. Such categorisation, therefore, brings out insights on which barriers to address first in case they manifest concurrently.

In addition to grouping the barriers based on its interaction and impact as shown in Figure 1, an in-depth analysis was done and the barriers were grouped thematically (Figure 2) based on major themes identified from the content analysis. Seven major themes were identified under which each of the 23-barriers were classified. The classification grouped barriers with a similar effect on participation. The themes identified included weak regulatory frameworks and mechanisms, inadequate resources, poor coordination, corruption, lack of commitment and ownership, culture, and resistance to change. Some barriers were noted to belong to more than one theme. For instance, political will affects both the availability of resources and regulatory frameworks. Corruption also affects the enforcement of the regulatory framework as reported by one government official:

But we are also looking at issues to do with corruption because some officers may not enforce these laws because they are corrupt, they are getting something from doing that. Especially those cutting down trees for charcoal some of them bribe the officers (Government Officer-Regional Office).

The categorisation in Figure 2 also shows similar barriers grouped by their level of influence and intervention. This grouping considered whether a factor's influence was at the individual, national and/or international level. In this analysis, barriers at an individual level were those affecting a person (rural stakeholder in particular) and an individual had some level of control over it. National level barriers were those having a direct impact on the national government and its policies while international level barriers emanate from external pressures.

This categorisation revealed common barriers and the levels at which their impacts were most apparent. Such analysis is helpful for policymakers and service providers in designing

appropriate programme interventions that would address specific barriers at different levels. For instance, poverty, cultural beliefs, or land availability mostly limit an individual stakeholder's participation in catchment management while unharmonised policies is a national barrier which an individual rural stakeholder has no control over. Most (80%) barriers in Figure 2 can be considered to have great impact and influence at individual and national level giving a chance for national government to seek its solutions locally, which supports the idea of local solutions for local problems (Ostrom, 1990).

Most barriers identified were also not unique to Malawi and are evident elsewhere (Tseng and Penning-Rowsell, 2012). However, this study unveiled new barriers such as the demand for allowances or per diems which traditionally are payments made to cover expenses while travelling for extended periods (Erasmus *et al.*, 2017). Allowances encourage participation in professional developmental meetings or workshops (Skage *et al*., 2015). Per diems have been reported to motivate participants while undertaking strenuous activities (Vian *et al.*, 2013) and act as incentives that increase the job satisfaction of employees (Nkamleu and Kamgnia, 2014), especially where per diems exceed salaries.

The evidence in this study shows that rural communities in Malawi are increasingly making payments a prerequisite to any form of engagement. The demand for allowances has constrained several catchment activities and programmes implemented by the government and other service providers since they do not have the resources to pay them. The government often does not budget for allowances to be paid to rural communities. Subsequently, most rural stakeholders only participate in activities implemented by NGOs who have the capacity to pay for allowances. This has created conflicts between NGOs and the government as the government finds it increasingly difficult to involve stakeholders in its activities. Increasing demand for allowances has created a culture where personal financial gains overshadow true agendas for the policy meetings. However, the question as to whether it should be legitimate to pay allowances to rural community members attending meetings or workshops or implementing particular activities remains unresolved in Malawi.

(iv) Conceptual framework for catchment management

Building on previous research and our empirical evidence, we used a theory of change concept and participatory approach to develop a conceptual framework for improving stakeholder engagement in catchment management (Figure 3). The framework considers current challenges with rural community involvement in catchment management programmes or activities and other wider developmental engagements. It does not only address actual engagement but also the organisational structure existing in rural communities. One of the identified key challenges in engagement was the weak leadership in most communities, which led community members to disrespect its leaders (mostly chiefs) and most often ignore their instructions. One community member had expressed the weakness in the leadership in this way:

Chiefs? Not. These days chiefs are not as strong and revered…. Well, we listen to chiefs in many ways, but for them to start an initiative of this nature you are talking about and expect people to follow, I doubt (Community member).

The framework has four stages for engagement: (i) reconstruct (ii) evaluate (iii) facilitate and (iv) engage (Figure 3). In stage 1, the purpose of engagement is defined or re-defined to align it with appropriate engagements methods. We found a clear definition of the purpose of engagement would make it easier to align engagement methods with levels of participation. Not all activities or programmes require the involvement of all community members and similarly may not all demand the same level of participation. This has been a weakness with the practice of engagement currently as it is not clear to what level rural communities need to be engaged. However, it is crucial for designing an effective engagement programme. It also helps in

mapping the boundary in terms of whom and how to involve (Reed et al., 2009; Reed and Curzon, 2015). Careful consideration at this stage would save resources in carrying out engagement activities.

In the second stage, we propose a rapid evaluation is undertaken to assess the different existing organisational structures and their ability to effectively facilitate community engagement. There were several community-based organisations in different parts of the country including the village development committee, area development committee, water point committee, and others. This stage endeavours to evaluate the context in which engagement will occur: the capacity and particular functions of the engagement structures. This avoids the current challenge where the available community organisations (WUAs, WPCs) are mainly concentrating on irrigation farming and rural water supply and not on catchment conservation. Most of these structures were not established for catchment management except in few areas where there are Village Natural Resources Management Committee. However, where existing organisational structures are effective forming another structure may only complicate the engagement process. During a group discussion which also served as a validation workshop with policymakers and service providers, one participant emphasised the need to check if there are community structures to take charge of engagement of fellow members and not form many organisations.

Perhaps it's not important to form parallel structures. In the village, there are several committees. For instance, in agriculture, you have Village Agriculture Committee, Village Natural Resources Management Committee, and that of health who are all represented in the VDC. But I think what we should ask is, is water represented? In essence, perhaps VNRMC should represent water but usually not (Focus group member).

If the existing organisations are ineffective or non-existent then an agency may facilitate establishment of a community-based structure/organisation (Stage 3). However, we suggest that such facilitation should be carried out with caution to make sure community members take control of the selection of the leadership of that structure. This could encourage members of the community to be loyal to the committee and adhere to its rules and regulation. Rusca et al. (2015) in Malawi reported instances where community members expressed ignorance of the organisation which may have been established by an NGO. New or existing community-based organisations should be trained in facilitation skills. If, however, upon evaluation, there is an existing structure that is active and able to engage its community, there is no need to establish another organisation but rather progress to Stage 4, 'Engage'. Finally, engagement can be carried out informed by the purpose defined in Stage 1.

This community engagement framework also recognises that different programmes or activities require different levels of participation. In this regard, at the engagement stage, the framework encourages using tools like stakeholder analysis or mapping (Reed et al., 2009; Reed and Curzon, 2015), stakeholder engagement wheel (Mott Lacroix and Megdal, 2016) and spectrum of participation (Du Toit and Pollard, 2008; IAP2, 2017). These tools, for instance, stakeholder analysis define who are stakeholders of a particular intervention or programmes and prioritise stakeholders for engagement in decision-making processes. This exercise should be carried out in line with the purpose of engagement under the 'Reconstruct' stage. By matching the purpose of engagement, level of participation and stakeholder type, the framework overcomes the common constraints in participation as an expensive, stakeholder-fatiguing and time-wasting undertaking (Irvin and Stansbury, 2004; Burt et al., 2007; Evans and Reid, 2013).

Conclusions

This study carried out a comprehensive investigation of rural stakeholder involvement in water resources management by analysing stakeholder identification, categorisation, and engagement in Malawi. Stakeholder participation in local water resources management was critically analysed. The findings show that criteria used for identifying stakeholders have a significant influence on actual stakeholder engagement. It was found that professional opinion was the most common method used to identify stakeholders. This method often resulted in bias as the process of identifying stakeholders is highly subjective. Although quick and cheap to implement, this approach fails to identify key stakeholders such as rural communities, omitting them from the water resource management and constraining their participation during the later stages of stakeholder involvement.

Barriers limiting stakeholder participation in water resources management were identified and found to be interlinked and overlapping. The evidence presented in this study showed weak governance in water resource management. The basic principles and tools of stakeholder engagement were not followed. The evidence also highlighted the government's failure to implement policy effectively. This research has also provided a detailed critique of how barriers interact at different levels and how a barrier's impact can be reduced.

Overcoming these barriers requires developing a comprehensive engagement framework giving due consideration to socio-cultural, economic and political contexts . The study proposed a number of ways in which this could be done including analysing and ranking barriers to see how and which should be tackled earlier. The study also proposed a theory of change based framework to improve the engagement of rural communities in catchment management. Having unravelled the barriers to participation, it is further recommended to carry out an analysis on which barriers statistically have more influence on community participation in catchment management. As case study research carried out in three different catchments in all three administrative regions of Malawi, it presents critical issues that may likely be found in most catchments across the country. Further, most of the sub-Saharan countries or developing countries with similar conditions and contexts more particularly the configuration of rural institutions would find the results of the study useful. Common to many contexts would be barriers to rural community engagement. Of unique contribution of the study is the analysis of the different barriers and their levels of interlinkages. The proposed engagement framework may be tested and used in many contexts as cultures in the world have institutions at all levels. Particularly, in water resources management where catchment-based management is encouraged by concepts such as integrated water resources management and integrated catchment management, the proposed framework would contribute to effective engagement of rural communities at the catchment level.

Acknowledgement

This research was supported by the Commonwealth Scholarship Commission and Douglas Bomford Trust.

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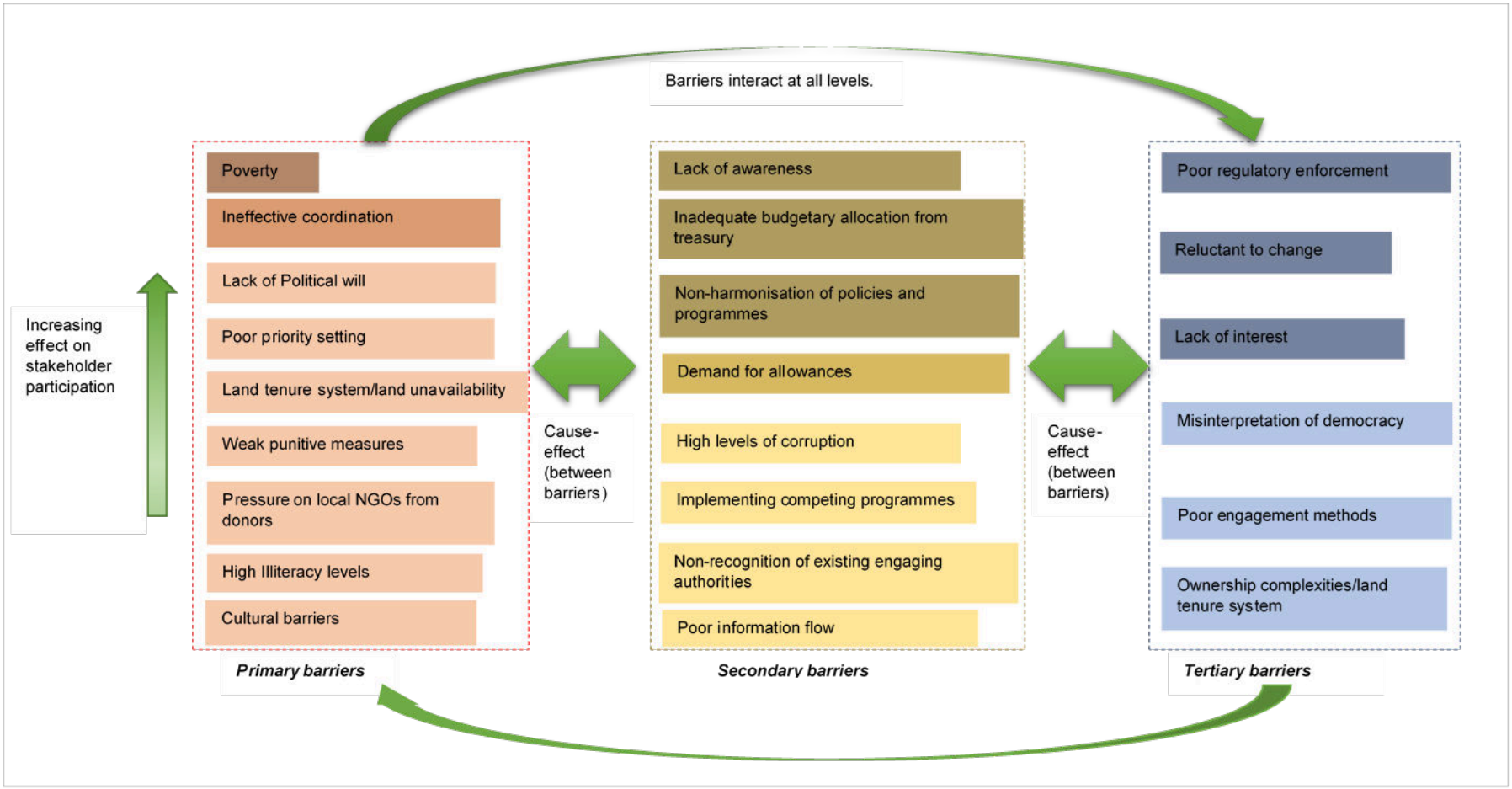

Figure 1: Barriers to rural stakeholder participation in water resources management and their causal-effect relationships.

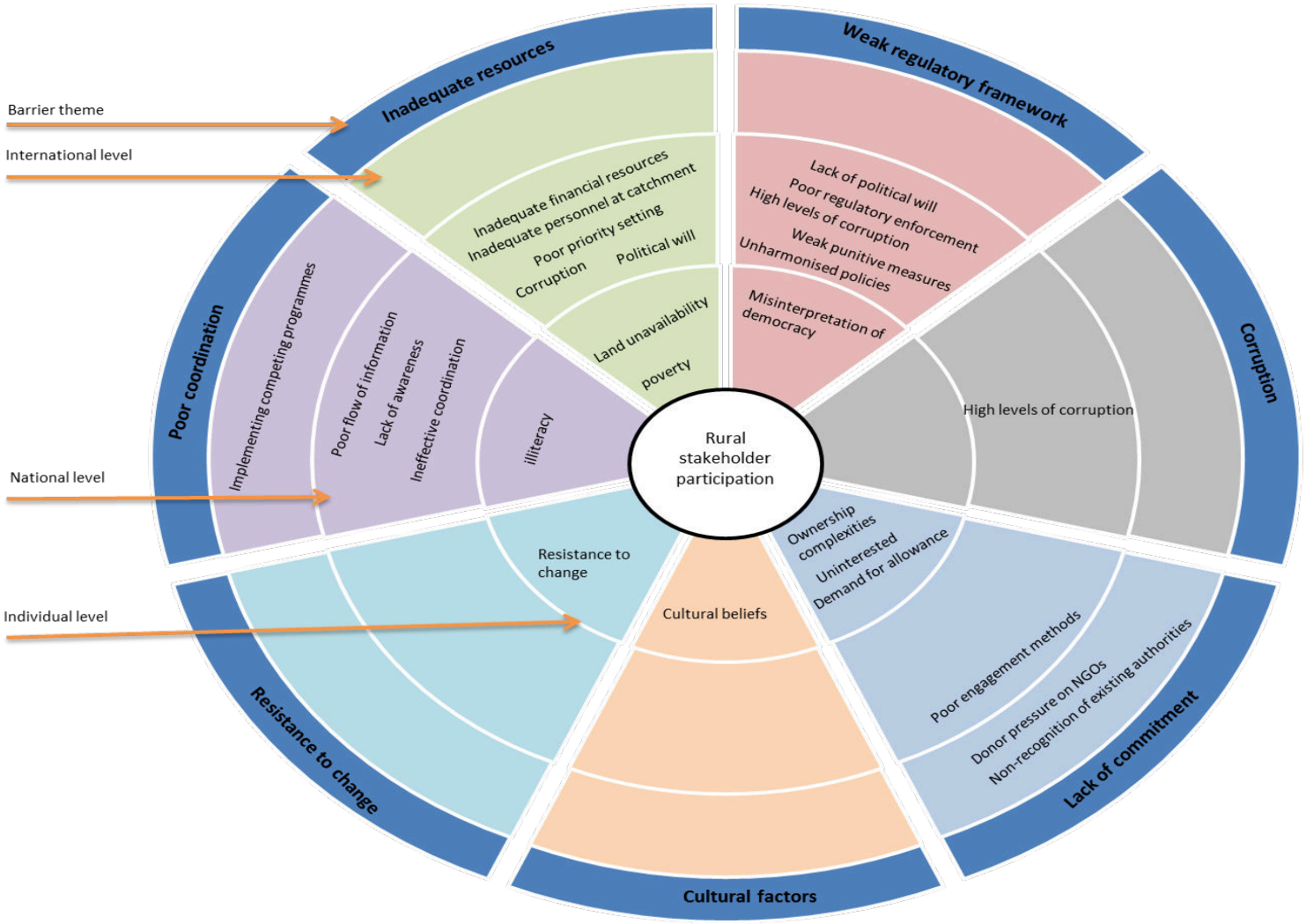

Figure 2: Classified barriers to rural stakeholder engagement based on theme, level of influence and intervention.

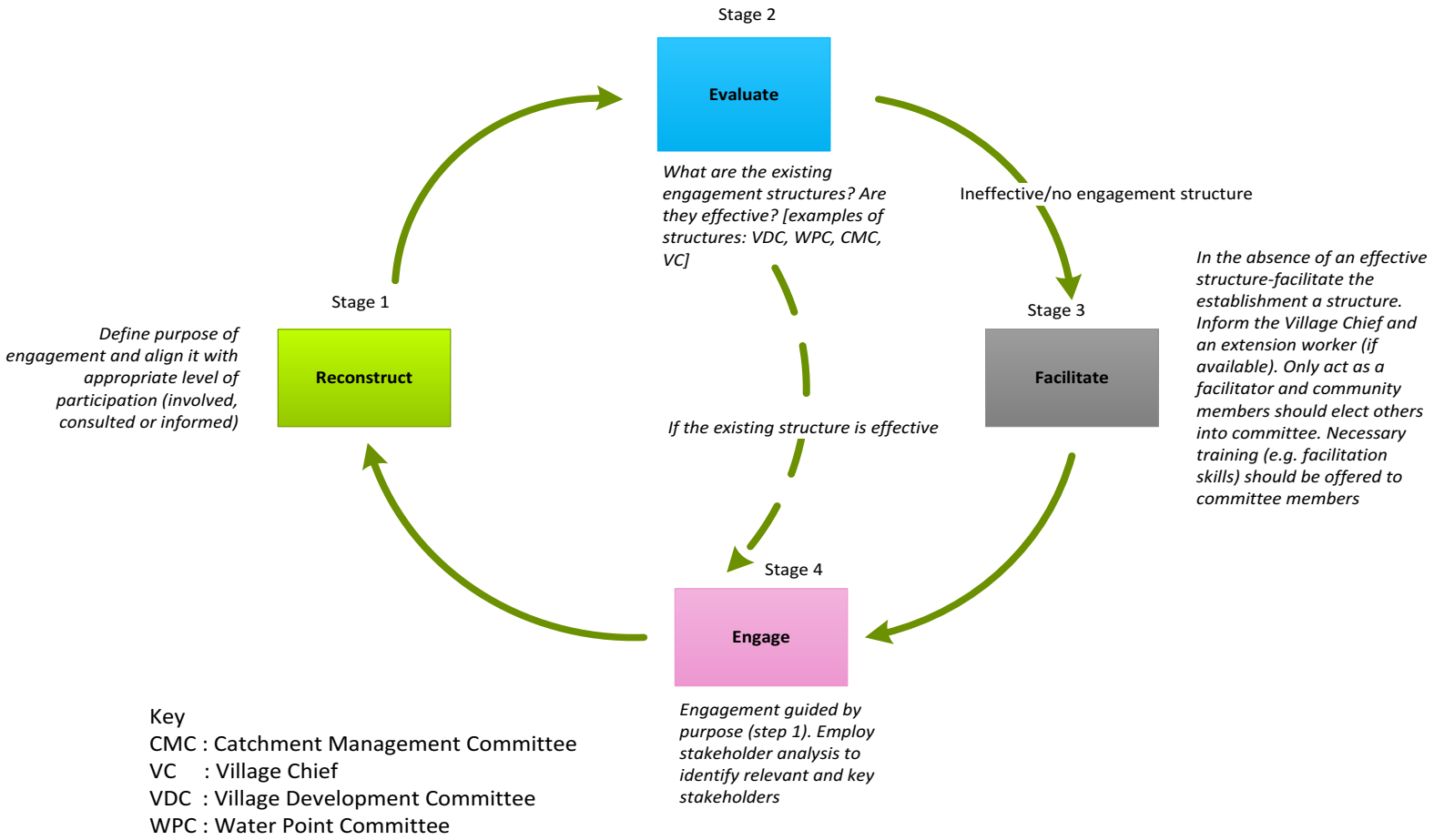

Figure 3: Engagement framework developed by workshop participants showing how policy makers and service providers should engage rural communities in water resources management at the catchment level.

Table 1: Physical and socio-economic attributes of the case study catchments.

Attribute		South Rukuru	Linthipe	SW Lakeshore
Physical	Location	Northern Region	Central Region	Central/Southern
	Rainfall range (mm)	850-1,300	800-1,000	790-980
	Aquifer Type	weathered basement	weathered basement	quaternary alluvium
		fractured basement	fractured basement	fractured basement
			quaternary alluvium	
	Main rivers	Kasitu, Runyina, S Rukuru, N Rumphi	Livulezi, Bwanje, Lingadzi, Kabudire	Linthipe, Lilongwe, Diamphwe, Lumbadzi, Likuni
	Surface water yield (Ml/d)	3,673	3,265	4,450
Socio-economic	Population	1,100,000	2,980,000	890,000
	Pop mix (urban/rural)	176,000/934,000	882,000/2,098,000	0/890,000
	Type of farming	irrigation and rainfed	irrigation and rainfed	irrigation and rainfed
	Dominant type of farmers	smallholders	smallholders	smallholders
Water use category	Arable agriculture	45%	26%	43%
	Domestic	33%	50%	46%

Source: Government of Malawi, 2015 (Aurecon Report on Catchment Management Strategy).

Table 2: Stakeholders identified through focus group discussions in South Rukuru and Linthipe catchments.

Stakeholder group	**Stakeholders**	
Government	Department of Water Resources Department of Forestry Department of Land Resources Department of Wildlife and Parks Department of Environment Department of Energy and Mining	Ministry of Health Ministry of Transport Ministry of Tourism Ministry of Justice Ministry of Finance and Economic Planning
Companies (private and statutory companies)	Illovo Sugar Ltd Demeter Agriculture Salima Sugar Eastern Produce Mzuzu Coffee Kawalazi Tea Estate Tobacco companies	Electricity Supply Commission of Malawi Blantyre Water Board Central Region Water Board Lilongwe Water Board Northern Region Water Board Southern Region Water Board
Public	Youth Women Politicians (MPs, Councillors) Religious Leaders Media	Local leaders Farmers Community members Academics
NGOs/civil society	African Development Bank World Bank European Union Wildlife and Environmental Society of Malawi (WESM)	UNDP UNICEF Arab Bank for Economic Development in Africa Water and Environmental Sanitation Network (WESNet)

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Chunga, Brighton A.; Graves, Anil; Knox, Jerry W.

2023-09-01
Elsevier
https://doi.org/10.1016/j.envsci.2023.06.006
Chunga BA, Graves A, Knox JW. (2023) Evaluating barriers to effective rural stakeholder engagement in catchment management in Malawi. Environmental Science and Policy, Volume 147, September 2023, pp. 138-146

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