



**CLIMATE CHANGE ADAPTATION  
RELEVANCE OF TANZANIA'S NATIONAL  
BUDGET AND ITS LEVEL OF DEVOLUTION**

**Noah M. Pauline, Peter M. Rogers, Edmund B. Mabhuye, Beatrice K. Sumari, Lucas Katera, Jamal Msami, Per Tidemand and Esbern Friis Hansen**

### **Acknowledgements**

Working Papers make DIIS researchers' and partners' work in progress available to readers prior to formal publication. They may include documentation which is not necessarily published elsewhere. DIIS Working Papers are published under the responsibility of the author alone.

### **Noah M. Pauline**

Senior Lecturer, Institute of Resource Assessment, University of Dar es Salaam  
pauline.noah@udsm.ac.tz

### **Peter M. Rogers**

PhD student, Institute of Resource Assessment, University of Dar es Salaam  
rogerspeter120@gmail.com

### **Edmund B. Mabhuye**

Coordinator, Centre for Climate Change Studies, Institute of Resource Assessment, University of Dar es Salaam  
edmund.mabhuye@gmail.com

### **Beatrice K. Sumari**

PhD student, Institute of Resource Assessment, University of Dar es Salaam  
sumaribeatrice54@gmail.com

### **Lucas Katera**

Director of Commissioned Works, REPOA Tanzania  
katera@repa.or.tz

### **Jamal Msami**

Director of Strategic Research and Senior Researcher, REPOA Tanzania  
msami@repa.or.tz

### **Per Tidemand**

Consultant, REPOA Tanzania,  
pt@dege.dk

### **Esbern Friis Hansen**

Senior Researcher, DIIS  
efh@diis.dk

### **DIIS WORKING PAPER 2023: 02**

DIIS · Danish Institute for International Studies  
Gl. Kalkbrænderi Vej 51A, DK-2100 Copenhagen, Denmark  
Tel: +45 32 69 87 87  
E-mail: diis@diis.dk  
www.diis.dk

ISBN 978-87-7236-106-2 (pdf)

DIIS publications can be downloaded free of charge from [www.diis.dk](http://www.diis.dk)

© Copenhagen 2023, the authors and DIIS

# **CLIMATE CHANGE ADAPTATION RELEVANCE OF TANZANIA'S NATIONAL BUDGET AND ITS LEVEL OF DEVOLUTION**

**Noah M. Pauline, Peter M. Rogers, Edmund B. Mabhuye,  
Beatrice K. Sumari, Lucas Katera, Jamal Msami, Per  
Tidemand and Esbern Friis Hansen**

## **TABLE OF CONTENTS**

<b>Abstract</b>	<b>2</b>
<b>Introduction</b>	<b>3</b>
<b>Methodology</b>	<b>6</b>
<b>Results</b>	<b>8</b>
Climate change adaptation projects with high allocation in the national budget	8
Trend in allocation of climate change adaptation	9
Sectors allocated with climate change adaptation	9
Financial allocation by governance level	10
Level of devolution of climate change adaptation relevant projects	11
<b>Conclusion</b>	<b>12</b>
<b>References</b>	<b>13</b>

## **ABSTRACT**

In Tanzania, climate change adaptation is financed by international development assistance and by nationally generated revenue. While international development assistance is registered by OECD and climate change adaptation relevance tagged by donors, the proportion of the nationally generated revenue that is climate change adaptation relevant is unknown. This paper analyses the climate change adaptation relevance of the national budget (from 2014 to 2022), using the same methodology applied in a previous study (Yanda et al., 2013). The study further assesses the degree to which climate change adaptation financed is devolved to local government.

The study finds that a disproportionately high proportion of climate adaptation finance is used at central government levels due to priorities being established at the ministry level. Moreover, the study finds that local governments lack discretion over climate change adaptation finance due to the country's highly centralised policies, practices and procedures. Qualitative fieldwork indicates that nearly all climate change adaptation finance accessed by local governments comes with a central government tag (directive) on how to use it.

## INTRODUCTION

Financing for climate change adaptation remains among the principal components of the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, Article 4.1 (Kibona et al., 2021). The aim of climate finance is to adjust natural or human systems in response to actual or expected climatic stimuli or their effects that moderate, harm or exploit opportunities beneficial to human lives (Yanda et al., 2013). Studies show that investments in climate change adaptation would contribute to an environmentally sustainable economy (UN, 2022; Allan et al., 2019). As suggested by Allan et al. (2019), GDP growth automatically leads to a sustainable economy. The actual global financial allocation to climate change adaptation in 2020 was about 20% of the total public climate finance mobilised (Venkatramani and Hillier, 2021; UN, 2022). The allocation of climate adaptation finance in developing countries has reached an average of USD 12.9 billion and USD 13.9 billion per year in 2017 and 2019, respectively (OECD, 2018; Somorin et al., 2021).

In Tanzania, about USD 6.2 billion has been allocated for climate change adaptation from global sources between 2010 to 2018 (Kibona et al., 2021). Diagnostics and research into volumes and flows of climate change adaptation finance consistently point to a substantial shortfall compared to growing needs (Allan et al., 2019). Meanwhile, climate change vulnerability and low adaptive capacity has increased, mostly in developing countries (Allan et al., 2019). To reduce countries' vulnerability and increase adaptive capacity, the international community increased engagement with developing countries, including Tanzania, to set aside finance from their own nationally generated revenues for climate change adaptation projects (Nakhoda et al., 2011; UN, 2022). In case of Tanzania, Allan et al. (2019) reported that, a government's own budget, financed through domestic taxes, levies and other own-source revenues, is a well-suited mechanism for financing adaptation.

In developing countries, including Tanzania, climate change adaptation finance is allocated as international development assistance, which is done through a number of project level activities within wider sector programmes (Norrington-Davies and Thornton, 2011; Kibona et al., 2021). The different sectors receiving climate change adaptation finance are those mostly affected by climate change impacts, which have reached crisis proportions, and are generally located in already desperately poor areas (UN, 2022). The affected sectors include agriculture, energy, health, education, construction, water and sanitation (Norrington-Davies and Thornton, 2011; Yanda et al., 2013; Kibona et al., 2021).

Tanzania has made progress in putting the climate change adaptation and mitigation agenda at the centre of its development planning. This can be seen at various levels. First, at the national level policy documents have been developed, prepared and submitted, including the National Environmental Policy (NEP, 2021), the Nationally Determined Contributions (2021) and the National Adaptation Action Plan (NAPA, 2007). Second, operational guidance and legal and regulatory framework adjustments have been developed, including the

National Climate Change Communication Strategy (NCCCS, 2012) and the National Climate Change Response Strategy (2021). Through international and domestic sources, the country has been allocating funds to climate change adaptation/mitigation interventions.

The allocation of climate change adaptation finance to different adaptation interventions is done through the Tanzanian national budget, within development projects budget (section IV in the budget books). It has been argued that the national budget is more effective than official development assistance (ODA) in delivering adaptation benefits, principally because it can leverage existing institutional structures, such as social protection systems, thereby improving impact and value for money (Allan et al., 2019). However, the official budget book does not give a clear demarcation between allocations for development projects and those for climate change adaptation projects. This complicates distinguishing the proportion of climate change adaptation finance originating from international revenues versus nationally generated revenues. In other words, it is difficult to identify and track funding allocated for climate change adaptation activities at the national level (Norrington-Davies and Thornton, 2011).

The call to optimise public investment in adaptation is entirely consistent with the primary purpose of the budget process; however, widespread underinvestment in adaptation prevails because climate change adaptation is seen to compete with other demands (Allan et al., 2019). In addition, there is a definitional ambiguity surrounding what adaptation entails (Yanda et al., 2013), as well as the complexity associated with quantifying the negative economic consequences of climate change and the positive economic returns to investment in adaptation (Allan et al., 2019). The magnitude of these combined factors make it hard to 'make the case and win the argument' for financing adaptation in a government budget process (Allan et al., 2019). Furthermore, too often political classes tend to prioritise more expedient, short-term issues over climate change adaptation (as such investments are likely to generate faster, more visible returns in future election cycles) (Allan et al., 2019). Where climate change is on the government's agenda, it is sometimes still perceived to be a 'ministry of environmental issues', leading to insufficient engagement from the ministries of finance and planning, which have greater influence over how resources are spent (Yanda et al., 2013). In contrast, with respect to who should be involved in climate finance coordination in Zambia, the ministry of finance and planning there was considered particularly important by the World Bank, as was the finance and planning departments of local governments (Funder and Dupuy, 2022). The ministry of finance and planning had a primary aim to mainstream climate action into national development budgets and sector plans, thereby 'integrating climate resilience into development strategies and programmes (Funder and Dupuy, 2022). However, the World Bank revealed that environmental and agricultural ministries, were important for technical input but that only finance and planning departments could bring about real change because 'development work is climate work' (Funder and Dupuy, 2022).

The process of allocating climate change adaptation finance in the national budget involves stakeholder engagement and priority setting (Allan et al., 2019; MoF, 2017). The Climate Change Financing Framework (CCFF) provides a robust framework for prioritising adaptation action based on scale of loss and damage being addressed as linked to specific locations and sectoral forecasts (MoF, 2017). However, stakeholder engagement in Tanzania is in question since priority setting has been undertaken by the central government (Norrington-Davies and Thornton, 2011; Yanda et al., 2013). For example, the country has set priorities for climate change adaptation across the country through the National Environmental Master Plan For Strategic Intergrations 2022-2032 (URT-VPO, 2022), while involvement of local communities, especially the most vulnerable groups of youth and women, is not demonstrated (URT-VPO, 2022).

It is also argued that public financial management (PFM) systems do not comfortably accommodate cross-sectoral concerns, such as climate change adaptation. Although a number of external monitoring channels exist, for example the OECD DAC's creditor reporting system and the Climate Funds Update, these systems are not harmonised and information collected does not reflect the national level contribution to climate change adaptation (Norrington-Davies and Thornton, 2011). Despite these challenges, the government in Tanzania has pursued varied and innovative means of augmenting budgetary resources for adaptation, either through allocating more resources to it, or ensuring existing programmes deliver more adaptation benefits (Allan et al., 2019). This paper analyses the allocation of climate change adaptation finance in Tanzania to climate change adaptation relevant projects, using international and domestic resources from the national budget between 2014 to 2022. This paper also investigates the amounts allocated to the ministries and local governments and levels of devolution.

The budget cycle usually begins with the forecast of revenue and expenditure projections, in view of macroeconomic and fiscal sustainability targets (Yanda et al., 2013). This determines overall resource availability and defines the aggregate expenditure ceiling (Allan et al., 2019). In consultation with the cabinet and the president or prime minister, the ministry of finance will then define the expenditure ceiling for line ministries (Allan et al., 2019). Budget preparation guidelines, often known as the 'budget circular', are issued, and contain instructions on how to prepare the annual budget (Allan et al., 2019). Line ministries then prepare their draft budgets, in some cases undertaking a series of internal and external consultations as part of the process, before submitting them to the ministry of finance (Allan et al., 2019). After this, the ministry of finance will normally hold bilateral budget hearings with line ministries to discuss the submissions and agree on any changes required (Allan et al., 2019). Climate change adaptation is discussed in parliament during budget hearings as a means of ensuring climate-compatible development.

Through the national budget, the amount allocated for climate change adaptation was about TZS 159 billion (USD 380 million) during the 3 years period from 2009/10 to 2012/2013 (Yanda et al., 2013). However, the ways of measuring public

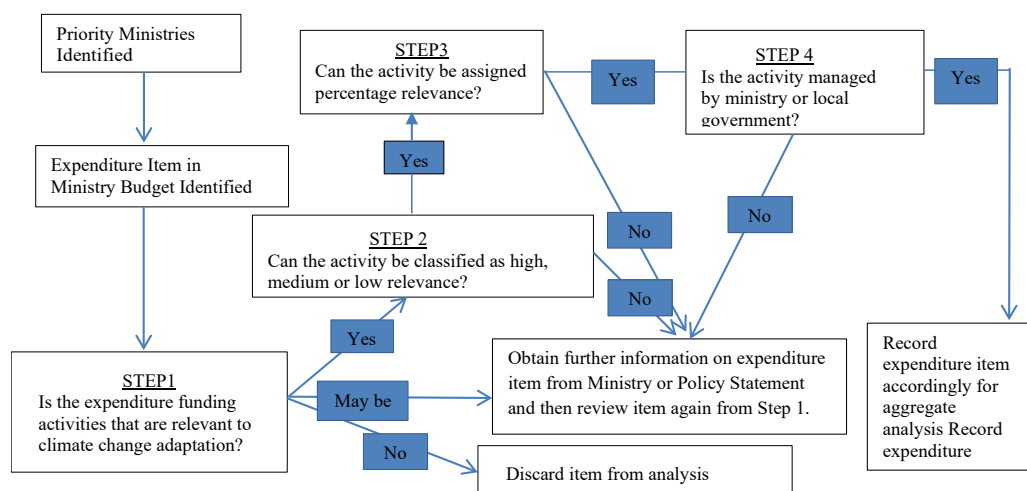


allocation of climate adaptation finance are insufficient and the practices in delivering financial support for climate change adaptation are ineffective (Yanda et al., 2013). This working paper, which is financed by the project Governing Adaptation Finance for Transformation (GAP), analyses Tanzania's national budget allocation of climate change adaptation finance in climate change adaptation projects and the level of devolution. For this purpose, the same methodology applied in a previous study by Yanda et al. (2013) is used.

## **METHODOLOGY**

This study used a mixed design of both quantitative and qualitative methods. The quantitative method was adopted from Yanda et al. (2013) and aimed to classify climate change adaptation relevant public expenditure within Tanzania's national budget. Data was extracted from the website of the ministry of finance and planning (<https://www.mof.go.tz/>), specifically section IV of the budget books (development project section) which comprise projects funded by both international and nationally collected funds from 2014 to 2022. The study identified ministries and local government authorities actively engaged in climate change adaptation shown in the national budget books. Seventeen ministries and twenty-six local governments have been identified based on their policy engagement and spending over the eight years period. Since the national budget books do not contain a marker for 'climate change adaptation relevant' spending, the study had to manually identify these programmes and projects in the identified ministries and local government authorities. The study developed a categorisation of these reviewed expenditures based on the degree of their relevance to climate change adaptation. The expenditures were reviewed for the following four considerations: (i) whether spending was relevant or not relevant to climate change; (ii) whether the expenditure was focused on adaptation; (iii) whether the identified expenditure was of high, medium or low relevance to climate change adaptation through project objectives; and (iv) what percentage weight could be assigned to each expenditure within each sector. Percentage expenditure weights were applied based on the definitions of high, medium and low relevance as shown in Figure 1.

**Figure 1. Data collection approach**



Source: Adopted from Yanda et al. (2013)

The qualitative method involved face-to-face open-ended, in-depth interviews (IDIs) with experts from 17 ministries affected by climate change, as well as with budget committee members from the national parliament who are the immediate key decision makers in allocating finance for climate change adaptation. The IDIs explored criteria behind allocating finance for climate change adaptation in different interventions in different climate affected sectors. The IDIs explored the flow of climate change adaptation funds to the local governments and their level of devolution. The data was collected using pre-tested semi-structured interview guides and were conducted in a conversational style. Probing and follow-up questions were emphasised to allow interviewers to capture enough information. The interviews were digitally recorded and transcribed. In instances where the interviewee used Swahili, sentences were also translated into English. A codebook to guide thematic coding of the transcripts was developed, and additional codes were added after coding a small set of transcripts.

A total of 370 climate change relevant projects were reviewed from the national budget, among them 104 projects were classified as climate change adaptation relevant projects with allocated finance from international and national sources. The list of these projects is attached (see Appendix). Quantitative data was analysed using Excel spreadsheet (version 20) for descriptive statistics to understand the allocations in climate change affected sectors, ministries and local government authorities. The data was also analysed to understand the level of devolution among the projects using. To this end, the following questions were employed: (i) Are (the majority of) funds from the project channelled through LGA accounts, and subject to some LGA planning and PFM procedures? (ii) Does the project encourage community participation below local government authority levels? and (iii) Are the funds that budgeted for within national budget under regional or local government authority vote? Results from analysing the 104 projects are presented in tables and graphs.

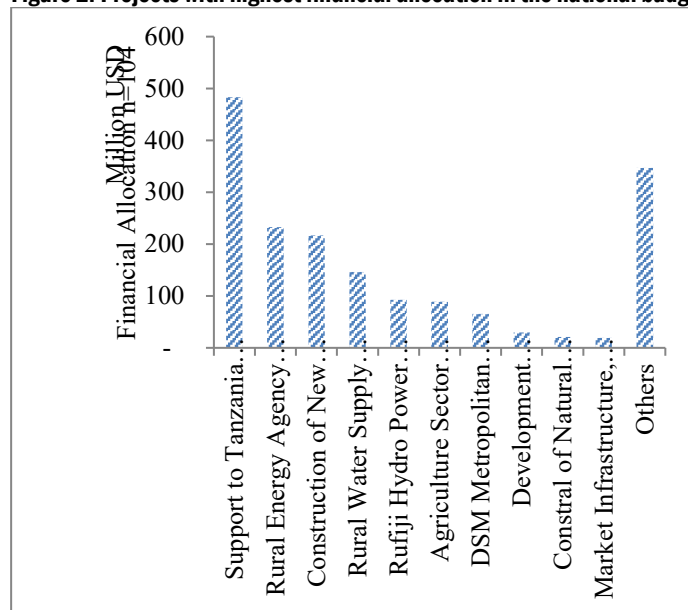
The qualitative data was reviewed to obtain a list of key themes and a codebook was developed to guide thematic coding of the transcripts using the software programme NVivo. Additional codes were added after coding a small set of transcripts. The coded data was then analysed and interpreted using NVivo software. Narrative analysis was also done using entire transcripts to provide context, and preliminary conclusions were drawn regarding the allocation of adaptation finance within Tanzania’s national budget, as well as the flow of that finance to local government authorities and their level of devolution.

## RESULTS

### Climate change adaptation projects with high allocation in the national budget

Result shows that USD 1.7 billion of the national budgets were allocated to the 104 climate change adaptation relevant projects. The projects with high allocation include: Tanzania Social Action Fund (USD 483 million); Rural Energy Agency and Rural Energy Fund (USD 232 million); Rural Water and Sanitation (USD 146 million); Construction of New Standard Gauge Railway (USD 216 million); Agriculture Sector Development Programme (USD 89 million); DSM Metropolitan Development Project (USD 65 million); Rufiji Hydroelectric Power (USD 92 million); Development Management of Water Resources (USD 29 million); Construction of Natural Gas Pipeline Mtwara-DSM (USD 20 million); Market Infrastructure, Value Addition and Rural Financing (MIVARF) (USD 19 million); DSM Rapid Transport Programme (USD 19 million); and Tanzania Strategic Cities (USD 18 million). Another 93 remaining projects were allocated about USD 290 million. Figure 2 shows climate change adaptation relevant projects within the national budget, sorted by size.

**Figure 2. Projects with highest financial allocation in the national budget**

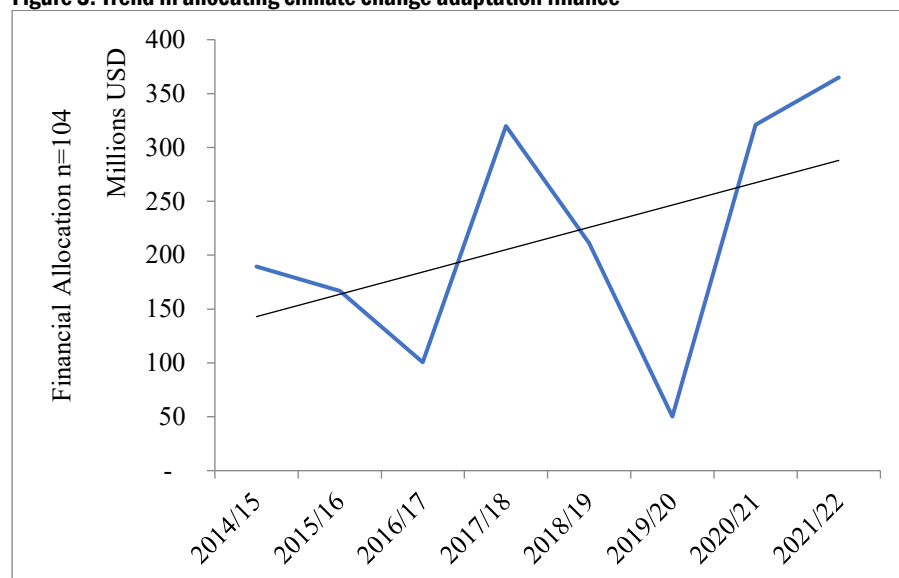


Source: Tanzania National Budget 2014-2022.

### Trend in allocation of climate change adaptation

The results show that, the trend for financial allocation to climate change adaptation relevant projects ( $n = 104$  for all figures) slowly increased due to the fact that some years had low allocation compared to others. The study shows that, the allocation in year 2014/15 was USD 189 million; in 2015/16 it was USD 166 million; in 2016/17 it was USD 100 million; and in 2017/18 it was USD 318 million. In the year 2018/19 the allocation was USD 211million; in 2019/20 it was USD 50 million; in 2020/21 it was USD 320 million; and in 2021/22 it was USD 364 million. Figure 3 shows the trend of financial allocation from 2014 to 2022. The line graph shows variation in adaptation finance in each year and the trend line a slow increase in allocating adaptation finance.

**Figure 3. Trend in allocating climate change adaptation finance**

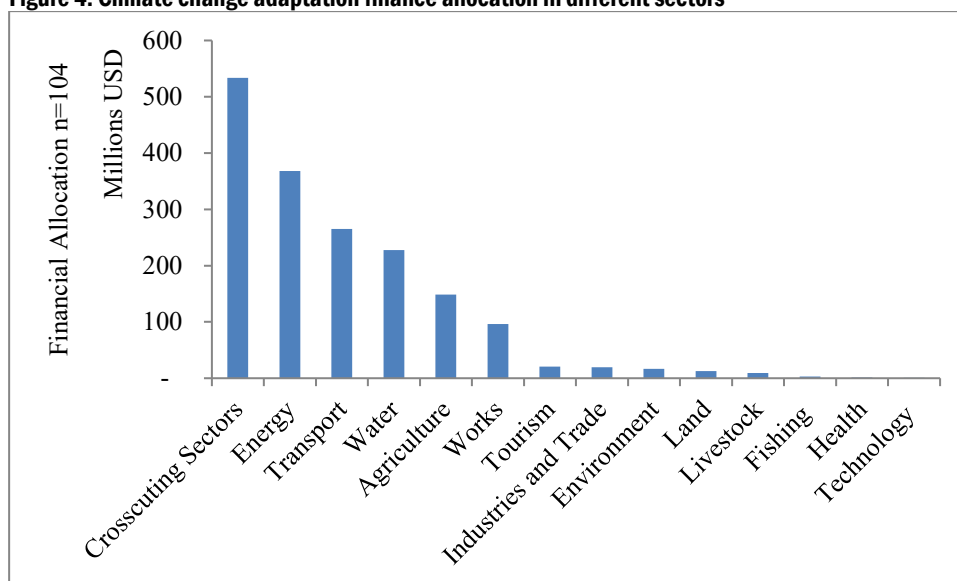


Source: Tanzania National Budget 2014-2022.

### Sectors allocated with climate change adaptation

Results show that climate change adaptation was allocated in different sectors in the national budget as shown in figure 4. The sectors allocated include crosscutting that was allocated about USD 533 million, energy was allocated USD 368 million, transport was allocated USD 264 million, water was allocated USD 227 million, and agriculture was allocated USD 148 million. Other noteworthy sectors include works that was allocated USD 96 million, tourism was allocated USD 20 million, industries and trade was allocated USD 19 million, environment was allocated USD 16 million, land was allocated USD 12 million, livestock was allocated USD 9 million, fishing was allocated USD 3 million, health was allocated USD 1 million, and technology was allocated USD 0.6 million.

**Figure 4. Climate change adaptation finance allocation in different sectors**



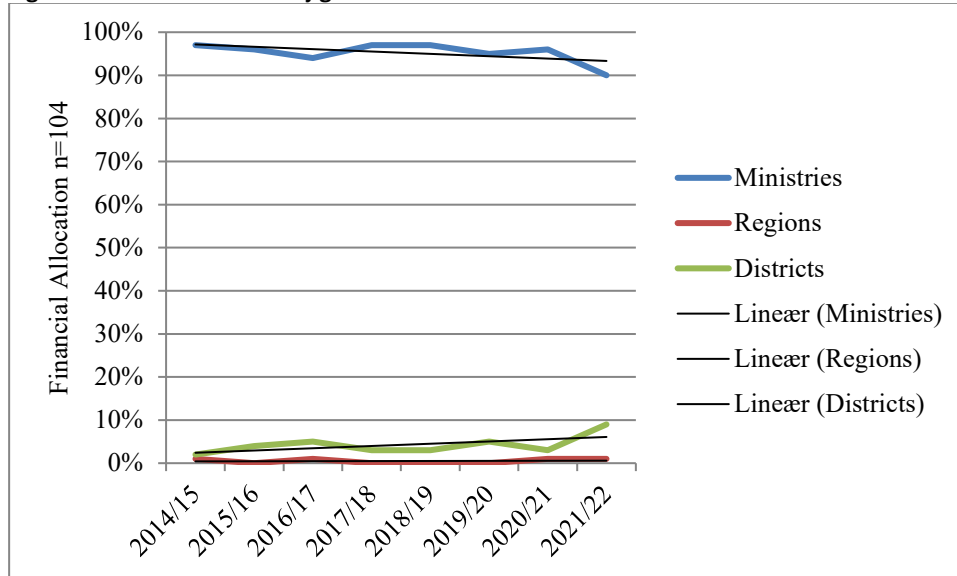
Source: Tanzania National Budget 2014-2022.

The key informants revealed that the allocations in different sectors are aligned with national policies, the manifesto of Chama cha Mapinduzi (CCM) (the government running party) and priorities raised by local government authorities from village and ward general meetings. Despite the adaptation finance allocation, some of the most vulnerable sectors ranked low in financial allocation. For example, severe climate change impacts have been recently reported in the northern part of the country such that intensive and prolonged drought caused the death of thousands of cattle, leading to poverty in the area which has not yet convinced the decision makers to increase interventions there, as seen in the low allocation (USD 16 million) to the livestock sector.

#### **Financial allocation by governance level**

The results in Figure 5 show that about 89% (USD 1.5 billion) of adaptation finance was allocated to the ministry level for project implementation. About 1% (USD 17 million) of adaptation finance was allocated to the region level for project facilitation since the implementation of climate change adaptation relevant project is done in districts. The study further shows that the proportion of climate change relevant finance allocated to district levels never came above 10% during the period 2014-2022. During the same period more than 90% climate change adaptation finance was used at the ministerial level.

**Figure 5. Financial allocation by governance levels**

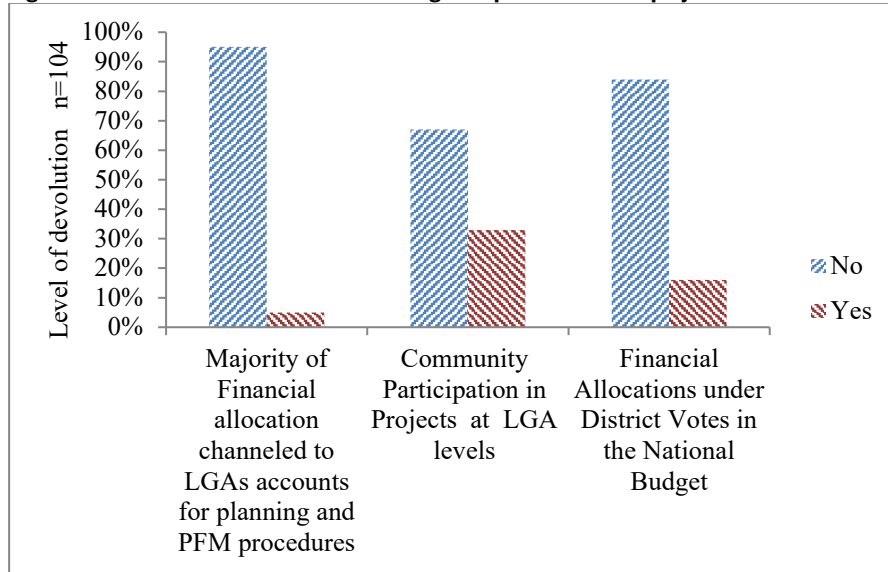


Source: Tanzania National Budget 2014-2022.

### **Level of devolution of climate change adaptation relevant projects**

Results of the analysis show the level of devolution among climate change adaptation relevant projects was low. About 5% of the climate change adaptation projects channelled a majority of their allocated funds to local governments' bank accounts for planning and public financial management procedures. The projects involved include: Support to Tanzania Social Action Fund (USD 483 million); Expanded Rice Production Project (USD 10 million); and Constituency Development Fund (USD 10 million). The study further shows about 33% of the climate change adaptation relevant projects involved some community participation at the district level. Community participation involved the employment of locals and the supplying of materials and food for project activities involving construction of social service infrastructures such as schools, health centres, water services and markets—all of which benefit the communities surrounding the projects. This helps to build community capacity in dealing with climate related challenges towards resilience. In addition, 16% of the projects had their financial allocation within the national budget under district vote. The projects involved were: Agriculture Sustainable Development Projects (ASDP) (USD 89 million); UNICEF Support to Multispectral (USD 0.5 million); and Support Nutrition for Improving Health (USD 83 million). Moreover, all the three were among the projects with low allocations in the national budget.

**Figure 6. Level of devolution of climate change adaptation relevant projects**



Source: Tanzania National Budget 2014-2022.

## CONCLUSION

Generally, this study shows public finance for climate change adaptation projects has increased 50% from USD 188 million per year during the three year period 2009/10 to 2012/13, as reported by Yanda et al. (2013), to USD 288 million per year during the period from 2014 to 2022 reported in this study. However, some years experienced a lower allocation of adaptation finance, e. g. 2019/20. In specific, the study found that the majority of climate change adaptation relevant finance was used at the ministerial level, while only a minority of financial resources was allocated to local government.

## REFERENCES

- Allan, S., Bahadur, A. V., Venkatramani, S., and Soundarajan, V. (2019). *The Role of Domestic Budgets in Financing Climate Change Adaptation*. Rotterdam and Washington, DC: Global Commission on Adaptation.
- Bird, N., and Yanda, P. (2014). *Climate Finance in Tanzania: What is Recorded in the National Budget?* London, United Kingdom: Overseas Development Institute.
- Bird, N., Asante, F., Bawakyillenuo, S., Trujillo, N. C., Eshetu, Z., Tumushabe, G., Yanda, P., Norman, M., Tagoe, C. A., Amsalu, A., Ashiabi, N., Mushi, D., Muhumuza, T., Kateka, A., and Simane, B. (2016). *Public Spending on Climate Change in Africa: Experiences from Ethiopia, Ghana, Tanzania and Uganda*. London, United Kingdom: Overseas Development Institute.
- Crawford, A., and Terton, A. (2016). *Review of current and planned adaptation action in Tanzania: CARIAA Working Paper no. 14*. Ottawa, Canada and UK Aid, London, United Kingdom: International Development Research Centre.
- DART. (2019). *Improving Urban Public Transport in Dar es Salaam City through the Implementation of Bus Rapid Transit (BRT) System (Green Transport)*. Dar es Salaam, Tanzania: DART Publishing Press.
- Funder, M., and Dupuy, K. (2022). Climate finance coordination from the global to the local: norm localisation and the politics of climate finance coordination in Zambia. *The Journal of Development Studies*, 58(10), 1899-1916.
- Kibona, S. E., Pauline, N. M., and Hepelwa, A. S. (2021). Distribution of adaptation climate finance in Africa region. *Tanzania Journal of Development Studies*, 19(2), 132 – 147.
- MoF. (2017). *Climate Change Financing Framework: A Roadmap to Systematically Strengthen Climate*. Kathmandu, Nepal: Ministry of Finance, Government of Nepal.
- Nakhooda, S., Caravani, A., and Bird, N. (2011). *Climate Finance in Sub-Saharan Africa: Climate Finance Policy Brief*. Heinrich Böll Stiftung North America: Overseas Development Institute and Liane.
- Ngimbwa, S. B. (2020). *The Determinants and Benefits of Community Participation in TASAF Project. A Case Study Temeke Municipality. Masters thesis*. Dar es Salaam, Tanzania: The Open University of Tanzania.
- Norrington-Davies, G., and Thornton, N. (2011). *Climate Change Financing and Aid Effectiveness: Tanzania Case Study*. London, United Kingdom: Agulhas.
- OECD. (2018). *Public climate finance to developing countries is rising*. OECD. Retrieved from: <https://www.oecd.org/environment/public-climate-finance-to-developing-countries-is-rising.htm>



Savvidou, G., Atteridge, A., Omari-Motsumi, K., and Trisos, C. (2021). Quantifying international public finance for climate change adaptation in Africa. *Climate Policy*, 21(8), 1020-1036.

Somorin, O., Nduhiu, M., and Robert, O. (2021). *Financing Adaptation in Africa: The Key to Sustainable Development? Policy Briefing 250*. Johannesburg, South Africa: South African Institutes of International Affairs.

UN. (2022). *Financing Climate Action*. United Nations Climate Action. Retrieved from <https://www.un.org/en/climatechange/raising-ambition/climate-finance>

URT. (2021). *Tanzania's Nationally Determined Contribution*. Dodoma: United Republic of Tanzania, Vice President's Office.

URT-VPO. (2022). *National Environmental Master Plan for Strategic Interventions (2022-2032)*. Government City Dodoma: The Office of Vice President.

Yanda, P., Mushi, D., Henku, A. I., Maganga, F., Minde, H., Malik, N., and Tilley, H. (2013). *Tanzania National Climate Change Finance Analysis*. London: Overseas Development Institute.