PLAN INTERNATIONAL

ADOLESCENT GIRLS IN THE CLIMATE CRISIS:

EMPOWERING YOUNG WOMEN THROUGH FEMINIST PARTICIPATORY ACTION RESEARCH IN ZAMBIA AND ZIMBABWE

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GENDER, CLIMATE CHANGE AND EDUCATION: EMPOWERING YOUNG WOMEN THROUGH FEMINIST PARTICIPATORY ACTION RESEARCH

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1.0 INTRODUCTION

1.1 Background

The Southern Africa region, comprising Angola, Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, is at the front line of some the most extreme impacts of climate change, facing both slow and rapid onset extreme weather events, and placing many areas in a state of protracted crisis. Since the start of the 2018/2019 cropping season in October the region has been severely affected by anomalous dry conditions, leading to precarious food security in the region (Reliefweb 2020). The impacts of the COVID-19 pandemic have also added to health and livelihood stresses in the region.

Climate change impacts the rights of the most marginalised children and young people severely and magnifies gender inequalities for women and girls. Children and young people living in poverty, in fragile and conflict-affected states, with oppressive social norms and under-resourced education systems are often the most marginalised and the hardest hit by climate change (Anderson 2010; OECD 2020). Protracted crises affect adolescent girls in ways that are different to women and children, the larger groups to which they are often assigned. Young women and girls experience insecurity and uncertainty as a result of climate change in ways that are unique to their particular age, gender, and status in their community and family, as well as any additional intersecting identities and lived experiences. In particular, girls are at risk of being pulled out of school to help with the extra domestic tasks and to lessen the financial burden households face due to climate-related shocks and stress (Plan International 2017).

Education is crucial in building knowledge, skills, attitudes and behaviours needed for tackling the impacts of climate change, for engaging in and developing climate policies, for supporting the green economy and for encouraging individual environmental responsibility. Plan International believes upholding the rights of young women and adolescent girls, including the right to quality education before, during and after extreme weather and climate events, must therefore be a priority. Bringing girls on board and ensuring climate-adaptation initiatives are girl-led will improve their adaptative capacities and promote their participation in decision-making. Targeted climate education has the power to play a pivotal role to promote girls' ability to adapt to climate risks and to engage in climate policies and processes.

1.2 Aims

The overall objective of the research was to empower young women to investigate and act on the impact of climate change on young women and girl's lives in Zambia and Zimbabwe. The results sought to build an evidence base that furthers understanding, through girls' views and lived experiences, of how climate change is reshaping their lives and their futures, including as a barrier to quality education. Through this unique perspective, development and humanitarian actors, donors and policy makers will gain a better understanding of the interventions needed to help realise young women and girls' fundamental right to education, equality and climate justice.

The aims of the research are to:

1. Build the evidence base on the impacts of climate change on and the role of education to empower and build the adaptative capacities of girls and young women.
2. Provide young women in Zambia and Zimbabwe with the tools to identify how climate change is impacting their lives and basic rights, including their access to education.
3. Amplify young people's voices regarding their needs, solutions and recommendations towards humanitarian and development actors, donors and policy makers that will address the urgent challenges they face because of climate change.
4. Increase understanding of the link between education and climate change amongst policymakers and practitioners in Ministries of Education and Ministries of Environment, civil society, NGOs, UN agencies and government donors.

1.3 Research locations

This action research was carried out in Southern Africa in regions of Zambia and Zimbabwe, where the impacts of climate variability compound conditions of environmental degradation, poverty, gender inequality and the COVID-19 pandemic. Climate change impacts are already being felt across the region and will amplify existing stress on animals and crops, water quality and availability, human health and the natural environment (Dupar, 2020). In Zambia, historic trends show mean annual temperature has increased by 1.3°C between 1960 and 2003, which is approximately twice the increase in the average global temperature during the same period (see Figure 1). Within the region, countries such as South Africa, Lesotho, Swaziland, Namibia and Angola observed a 0.6 to 1°C annual average temperature increase during a comparable period (Gannon et al. 2014). Zimbabwe has experienced a mean annual temperature increase of roughly 0.01°C/year from 1901 to 2016, with higher warming towards the end of the twentieth century. Overall, precipitation has decreased by approximately 0.6 mm/year from 1901 to 2016 (World Bank CKP). This warming has been greatest during the dry season (MoEWC, 2014).

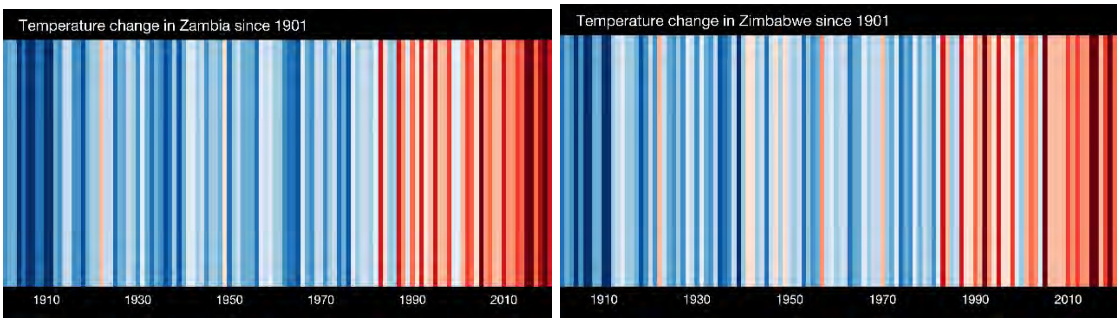
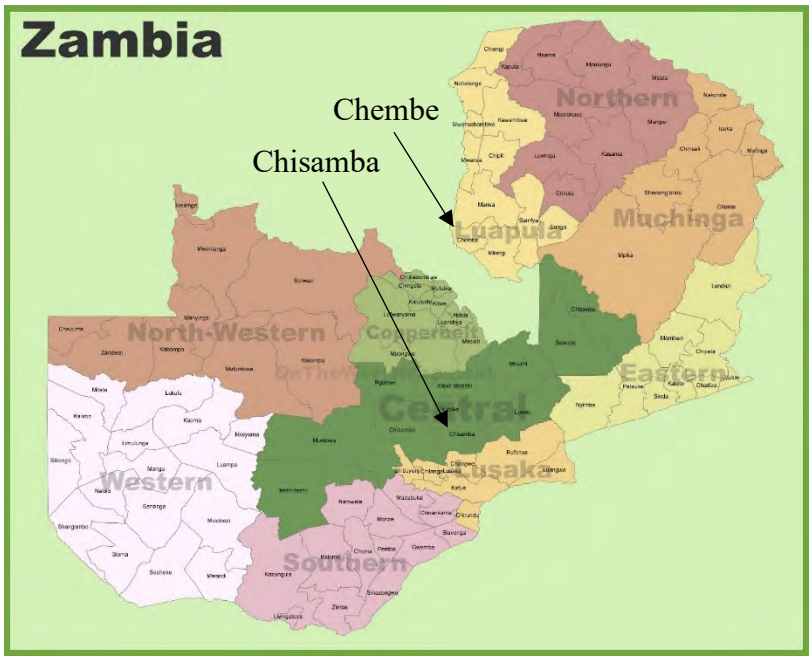


Figure 1: Average annual temperature change in Zambia and Zimbabwe 1910-2020 The progression from blue (cooler) to red (warmer) stripes portrays the long-term increase of average annual temperature Source: https://showyourstripes.info/

In the two countries, the research was conducted by groups of young women in different communities across four areas. These areas were selected in collaboration with the Plan International Country Offices on the basis of two criteria.

Firstly, we chose areas that were marginalised economically and particularly susceptible to climate shocks and stresses, aiming for comparative study between drought and flood-prone areas; although in reality some areas were prone to both, while erratic rainfall was also an important hazard factor.

Secondly, the study locations were chosen for practical reasons such as availability of a PI office in order to provide mentorship and support to the young women researchers through the research process. In Zimbabwe, the two focus areas were Chiredzi and Tsholotsho districts whilst in Zambia the research focused on Chisamba and Luapula districts.

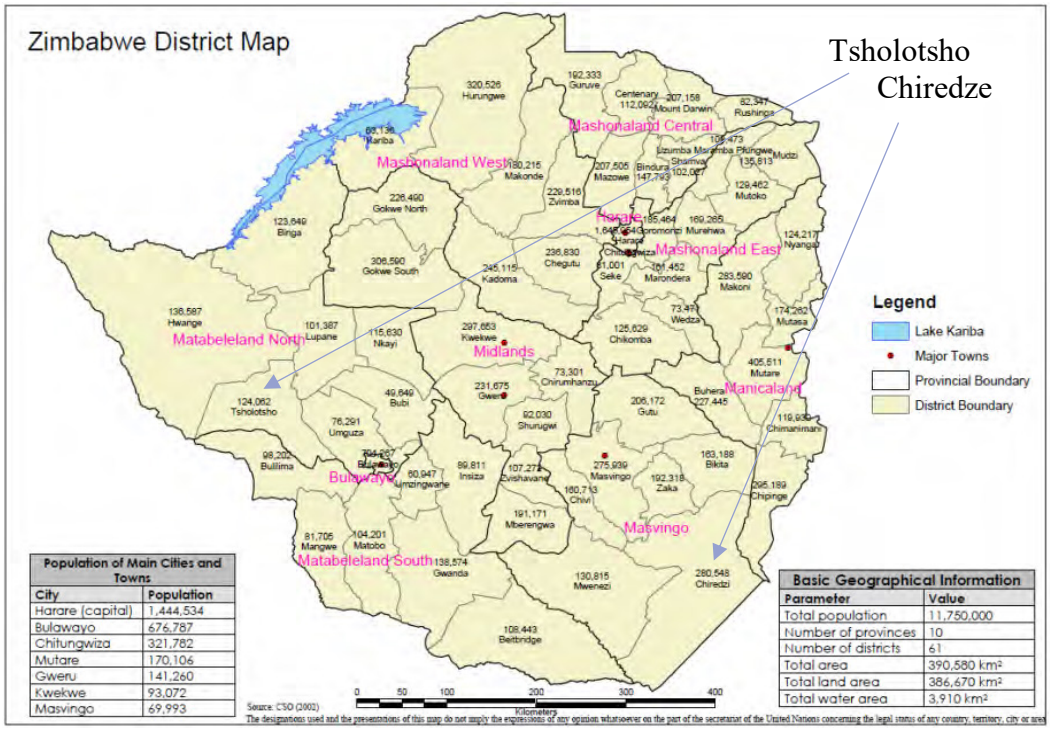


The Zambia case studies and researchers for the study are located in:

Chembe District (Luapula province)
Chembe district is situated in the north-eastern part of the country within Luapula province. Luapula has a tropical climate with three distinct seasons; a cool dry season from April to August, a hot dry season from August to October and a warm wet season from November through to April. Historical mean monthly temperature ranges from 16^{o} C to 24^{o} C in October with the valley recording temperatures higher than 24^{o}C in October (RoZ 2020). The province falls in the high rainfall belt classified as region III with an average annual rainfall of over 1000mm. Rainfall levels are high throughout the province (1,115 – 1,500 mm per annum) with the Northern plateau areas and the Bangweulu swamps receiving the most rain.

Chisamba District (Central Province)
Chismba district is situated in the central part of the country in Central Province. It lies in the region with favourable rain patterns across the central region and falls on the country's fertile belt (RoZ 2020). Chisamba District receives comparatively high and well distributed rainfall ranging from 800 – 1 000 mm falling between November and April and is one of the

two most productive agroecological areas in the country. The mean annual temperatures range from 14.31 to 27.31°C during the 120 – 150 days of the region's growing season (Chirwa et al. 2017).



The Zimbabwe case studies and researchers for the project are located in:

Tsholotsho District - Matebeland North Province

Tsholotsho District is situated in western Zimbabwe within agro-ecological region IV - these classifications represent areas with homogeneous sets of climatic parameters and natural resource characteristics, such as rainfall, solar radiation, soil types and soil qualities, which correspond to a level of agricultural potential (IPBES 2020). Average rainfall is 650mm per year, mostly restricted to the summer season from November to April. However, rainfall intensity and collapse of small dams has led to high levels of flooding experienced in the district since 2000. This has worsened the situation of poverty-afflicted communities, particularly communities living close to Gwayi River, Bhudani and Gariya dams, and those settled in low lying areas (Dube et al. 2018).

Chiredzi District - Masvingo Province

Chiredzi district is situated in the south eastern part of the country and falls under agro-ecological region V, which represents the lower end of the scale in terms of quality of land resources. The region receives less than 450mm of rainfall per year is part of the dryland regions of Zimbabwe. Typically, the region has a high annual maximum temperature of 32 degrees Celsius and a low annual precipitation of 450mm. Except for situations where water for irrigation is available, livestock and wildlife management are the most viable agricultural activities in this region. Droughts have occurred more frequently in the last 50 years, with increasing frequency since 1970 (FAO 2004). Notably, the number of extreme

rainfall events in excess of 50 mm per day have also increased since 1965, often resulting in flash floods which wash away the top-soil and damage crops and rangelands (Oxfam-UNDP/GEF 2015).

2.0 CONCEPTUAL FRAMINGS

2.1 Climate change: Why does gender matter?

There is growing acknowledgement of the importance of gender and other intersectional characteristics in determining the differentiated effects of exposure and vulnerability to climate-related shocks and stresses (Ravera et al. 2016a; Andrijevic et al. 2020). Gender is socially, culturally and contextually bounded, continually reinforced, contested and renegotiated (Alston 2013). The ways that climate impacts manifest vulnerability is socially constructed. Understanding the role of gender as a conditioning factor is therefore vital in understanding how impacts are felt, how best to adapt to a changing climate, and how to design efforts to limit greenhouse gas emissions and mitigate climate change.

> *"Gender matters to the climate crisis because the experiences of women and men during and after times of climate crisis are different – a difference based on cultural norms and practices, on work roles and access to resources, on safety and security and on different levels of vulnerability resulting from a combination of these factors."*
>
> ***Alston 2013:p3***

At the same time, exposure to climate risks is also differentiated across people of different race, age, geography and gender (Dankleman and Naidu 2020). Women and girls can be less likely to migrate in search of livelihood options and left behind at home with increased workload and caring responsibilities that leave little flexibility to evacuate in case of extreme weather events. Responding to extreme events can also lead to conditions of greater exposure to exploitation and abuse for women and girls.

It is important to acknowledge the contextual nature of gender in different locations and situations, requiring caution with generalising narratives. As such, a binary men-women depiction may be unhelpful: rather than depicting women as not inherently more at risk, we instead understand that "intersections between gender, power dynamics, socio-economic structures, and societal expectations result in climate impacts being experienced very differently by women" (Djoudi et al. 2016:p2). Equally, poverty or gender inequality should not automatically be equated with greater vulnerability to climate change; in some cases there may be greater equality in poorer households than in wealthier ones (Arora-Jonsson 2011).

By contrast, climate and gender writing and initiatives often present generalised narratives that may not be backed up by empirical data. Aurora-Johnson (2014) identifies two such narratives framing women as affected more by climate change than men in the Global South, and that men pollute more than women in the Global North. Similarly, different general starting points for analysis will influence the type of prescribed action. For example, Schipper

and Langston (2014) note how multi-lateral development organisations often state that climate change will exacerbate gender differences and worsen discrimination because it makes people worse off in general. As a result, the cause of this change is centred on climate change rather than the societal structures that create the existing inequalities.

Nevertheless, a number of key inter-relationships can be identified that are pertinent to this research in the context of young women and girls living in rural communities of Zambia and Zimbabwe where livelihoods are sensitive to changes in the climate. Gender-differentiated vulnerabilities to climate change have been highlighted in particular in the contexts of agriculture and water sectors, disaster management and response, and reproductive and mental health (Sultana 2018; Gaillard et al. 2017; Sorensen 2018). Given the importance of the agricultural sector in the case study regions, the implications of climate-related impacts will be mediated by the gendered roles in farming and livestock activities, while it is commonly the men who migrate in search of alternative income generation.

Gendered vulnerability to climate change is framed by women's lower general levels of control over household decision-making, income and spending, land ownership and use, and lower education and training of gender injustice more broadly. Women's role in domestic reproductive activities such as sourcing water and food mean they tend to suffer more when these resources become scarce. Before, during and after disasters and other crises, men are more likely to liaise with officials and make decisions about response and evacuation, while women are more likely to take responsibility for practical preparation of the household or may see their workload increase when men migrate (Dankelman 2010; Alston 2014). Eastin (2018) finds evidence that the unequal burdens of climate change impacts are reflected across broader macro-social institutions, demonstrating how gender disparities in terms of climate change vulnerability both reflect and reinforce pre-existing gender inequalities.

The intersection of age and gender is the starting point for this study, based on a broad recognition that these factors make some children more vulnerable to the impact of climate change. Entrenched social and gender norms dictate behaviours, limit mobility and access to rights, and reduce capacity to deal with uncertainty for the young and female (Plan International 2019b). Climate change magnifies the inequalities that young women already suffer and their unequal access to health, sexual reproductive health and rights, education, participation and protection.

2.2 Linking education, gender and climate change

While the gendered impacts of and responses to climate change cut across wide aspects of lives and livelihoods, children and young people are particularly affected in terms of access to education, both directly and indirectly. The detrimental impacts of the COVID-19 pandemic on school attendance and attainment are overlaid on those from environmental threats, which are estimated to disrupt the education of over 37 million pupils each year globally (Theirworld 2018). Sims (2021) provides a review of the links between climate change, disasters and disruption to education. These include how damage to infrastructure, transport

links or displacement can disrupt learners' physical access to education facilities, as well as the ways that disaster impacts can affect children's physical and neurological development and ability to concentrate (Kousky 2016). Extreme weather events can also affect the presence of teachers in schools, as well as teacher wellbeing, ultimately influencing access to education and threatening child wellbeing. Disruption to education can also stem indirectly through impacts of a changing climate on livelihoods and consequent household coping strategies. In poor contexts, households may no longer be able to afford the costs of schooling, or require additional labour for subsistence and income generating activities (Kousky 2016; Nordstrom & Cotton 2020).

Yet education also has a positive role to pay in tackling climate change, both in developing low carbon approaches to future development and in adapting to the projected impacts of climate change. Sims (2021) identifies the growing evidence of the direct and indirect effects of education on reducing vulnerability to climate change and increasing climate resilience, finding that girls' education has been identified as the most important socioeconomic determinant of such reduction. Tanner and Seballos (2012) chart the effects of engaging children and young people in disaster risk reduction education on reducing impacts of disasters and extreme weather events, thereby building disaster risk resilience.

Plan International (2019a) also highlight the links between girls' education, their sexual and reproductive health and rights in responding to climate change. They note that completing a quality education and being able to freely control their sexual and reproductive health empowers girls to contribute to more resilient and adaptable societies, as well as to greener economies. However, they also caution against links between reproductive rights and population control as a climate change strategy, arguing that this can distract from the issue of inequality with much higher emissions generated by regions of the world with lower population growth rates (Plan International 2019b).

Despite these connections, evidence suggests that climate strategies are not sufficiently picking up either education concerns or gender considerations (See Box 1).

Box 1: Climate Strategies and Girls' Education (Source: Plan International 2019a).

- While 43% of country climate strategies referenced women or gender it was largely in the context of women as a vulnerable group rather than contributors to climate change mitigation or adaptation.
- Only three countries' Nationally Determined Contributions make explicit reference to girls; both in the context of their needs rather than competencies and there is only one clear reference to girls' education.
- Those countries that do attend to issues of future generations tend to be "young" countries – those with a large under-15 population – and climate-vulnerable countries. However, only seven Nationally Determined Contributions reference children/youth as stakeholders who should be included as decision makers or in climate action.
- 68% of Nationally Determined Contributions talk about education but normally in vague terms, including awareness raising, not targeted at young people, or part of a national curriculum to combat the climate crisis.

- No Nationally Determined Contribution formally recognises the contributions that investment in girls' education could make toward their climate strategy.
- Climate strategies overall concentrate on technological fixes, ignoring social concerns and the contributions that people, particularly girls and young women empowered by education and information, might make.

2.3 Empowerment, education and action

Framings of the linkages between young people, climate change and gender has changed significantly in the last decade. Narratives focused primarily on vulnerability and protection have been dominant for a number of reasons, including their use as advocacy instruments to call attention to impacts on, direct resources towards, and make space in decision making for, young people. Yet presenting young people or women as passive victims may both misinterpret the causes of vulnerability and obscure the role of women and young people as proactive agents in tackling climate change (Ravera et al. 2016b). Such vulnerability narratives have therefore been supplemented in recent years with those stressing the active participation and agency of young people in efforts to prevent, prepare for, cope with, and adapt to climate change and extreme events, as well as campaign for action to cut greenhouse gas emissions (Tanner, 2010; Sanson et al. 2017; Thew et al. 2020).

From a gender perspective, agency and empowerment are important to reverse what Djoudi and colleagues label the 'feminization of vulnerability' that can reinforce a 'victimization' discourse within climate change studies (Djoudi et al. 2016). In contrast to the vulnerability narrative, the UNFCCC highlights women's leadership roles in sustainable natural resource management and managing climate risks, including at household level, while women's political participation has contributed to responsiveness to citizen's needs and cross-party and cross-ethnic cooperation: "on the contrary, if policies or projects are implemented without women's meaningful participation it can increase existing inequalities and decrease effectiveness" (UNFCCC 2021).

"Empowerment" is about the process by which those who have been denied the ability to make strategic life choices acquire such an ability. "Agency" is the ability to make meaningful choices and strategic decisions.

Following Kabeer 1999; Rao et al. 2020

"Gender is like any other socio-cultural dimension: often left out of climate change projects and policy because it has roots that are far deeper than climate change projects and policy can go."

Schipper and Langston 2014:p5

Yet these instrumental arguments around young women's participation may be insufficient without attention to morality and the structures driving gender inequality. Adger and colleagues (2017) find evidence that climate change action is most effective when framed as a moral issue, which suggests the need for examination of whose morals and values are reflected in knowledge production and decision making and why (Morchain 2018). Schipper and Langston (2014) highlight that unless underlying gender equality is tackled, even those policy and projects that explicitly seek to address gender

concerns in climate change will not be effective. Nevertheless, evidence from across Asia and Africa compiled by Rao and colleagues, (2020) suggests that environmental stresses can have a negative effect on agency even when women's agency is supported by legal entitlement, household structures and social norms.

2.4 Feminist Participatory Action Research (FPAR)

While understanding of participatory approaches in development contexts is decades old, there is renewed interest in the importance of knowledges, ownership and power relations within grassroots research and project-based interventions (Chambers 1992; Contreras and Roudbari 2021). Within the climate change field, this interest has been both sparked by efforts to decolonise knowledge creation and sharing, and a renewed interest in rethinking the framings of climate change around knowledge, power, and politics (Morchain 2020; Tanner and Allouche 2011).

Feminist Participatory Action Research (FPAR) approaches were employed in this research to support young women in designing and carrying out research that empowers them to take action for structural change. It did so through a cyclical and iterative process of collectively planning, action, observation and reflection to develop, implement and reflect on strategies for social change in the context of a changing climate (Chakma 2016; Lykes and Hershberg 2012). FPAR principles guided the development and preparation of the materials for trainings as well as the writing workshops with the young women (see Figure 2). FPAR focuses on generating feminist knowledge based on women's experiences and stories, with the women working collaboratively in the research process.

Figure 2: Principles of FPAR (Source: APFWLD 2020).

Although feminism has different strands, our methodological approach adopts African feminism as its theoretical pillar, encompassing liberatory political philosophies, theories, writings, research and cultural production, as well as the organizing work of the transnational community of feminists from Africa (Taylor 1998; Nkenkana 2015). African feminism has been identified as a working approach because it pays close attention to context and how it affects the experiences or compounds the struggles of young women, including in the context of climate change impacts. As such, it is cognisant of the intersections of gender, race, class, rural/urban divisions and culture on the experiences of African women.

To guide our approach, feminism is defined as a way of living that challenges systems of oppressive power and inequality, highlighting how power and inequality intersect with the situation of young women in our case study contexts. FPAR is a process whereby participants use a gendered focus to reflect upon, investigate, and challenge the conditions of their own reality (Reid and Frisby 2008). In our study, FPAR is crucial because the combination of the climate change crisis, deepening inequalities and deteriorating and shrinking democratic space have serious ramifications for poor and marginalized young women in both Zimbabwe and Zambia. This approach ensures that the most affected grassroots communities strengthen their knowledge and skills, are enabled to document their concerns and local experiences of how they are affected by climate change and shape recommendations for solutions and stimulate change.

FPAR explicitly aims to develop critical awareness of the root causes of oppressive power, inequality and violence; doing so helps to surface the systemic nature of these issues. FPAR is rooted in the understanding that knowledge production is never neutral and aims to empower the young women researchers to investigate in a way that is liberating and can sustain their own empowerment. The FPAR process combines reflection and learning which allows the young women to better understand their environment as well as empowering them to grow in their analytical capacity and as individuals. The process allows the young women researchers to take actions that are based on their lived realities and experiences as informed by the knowledge generated through the FPAR process.

Our work was guided in particular by four tenets:

a. *The Look and Reflect approach*: Allowing young women to understand and reflect on key concepts of what FPAR is and why it is important as a research methodology.
b. Thinking and building critical consciousness: Reflecting transformative FPAR processes, developing consciousness rooted in feminism, power, and inequality, and how these influence the reality of their lives. This process triggers the thinking of young women over the issues and information that they gather in their communities.
c. *Planning how to generate data and establishing the road map*: Planning collectively to harness the presence, energy, ideas, and feelings of the participants on the research process.
d. Carrying out the action and facilitating reflection: Remembering intersectionality, honouring voice and difference, exploring new forms of representation, or considering reflexivity, and honouring the many forms of action that will come from the information and knowledge generated.

Throughout the process, the research facilitators were conscious of the need to balance the goals of the research with those of FPAR as an empowering process. We remained conscious of the potential for PAR approaches to retain asymmetrical power relationships and that the young women researchers' and community's priorities may be contrary to the framings of the research and action agenda around climate change and education (Meriläinen et al. 2021). Critical researchers studying climate resilience in development contexts have highlighted the importance of agency and empowerment as drivers of

transformation that can enable wider ranges of choices within these pathways towards high resilience, low risk and high welfare outcomes (Morchain 2018; Few et al. 2017).

3.0 METHODOLOGY

3.1 Methodological process and tools

The FPAR methodology employed draws on components at the core of feminism, including:

- *Facilitating collective planning of the FPAR process*, focusing particularly on collectively developing a roadmap for the research and planning how the different actions will be coordinated.
- *Active involvement of young women* through a process of sharing their experiences and learning from each other, a continuous process that builds iteratively through the workshops, research and follow-up. The focus of the research is on the young women as generators of the knowledge - their stories, their experiences and how they interpret their lived reality.
- *Focus on Feminist Popular Education as a way of building critical consciousness*. The young women researchers' understanding of feminism relates to their own lives and how they can use feminist principles to interpret and analyse the world around them.

The research facilitation process was organised around six iterative cycles, illustrated in Figure 3. Plan International local programme offices canvased for volunteers in the case study areas, with 3-5 young women researchers between the ages of 20 and 28 selected from each of the four areas (see Annex 1 for profiles). A consultant team developed the FPAR methodology and a range of appropriate participatory research tools while the young researchers completed an online baseline survey regarding their knowledge and sense of empowerment, as well as self-rating their language and writing skills in order to plan translation and mentoring accordingly.

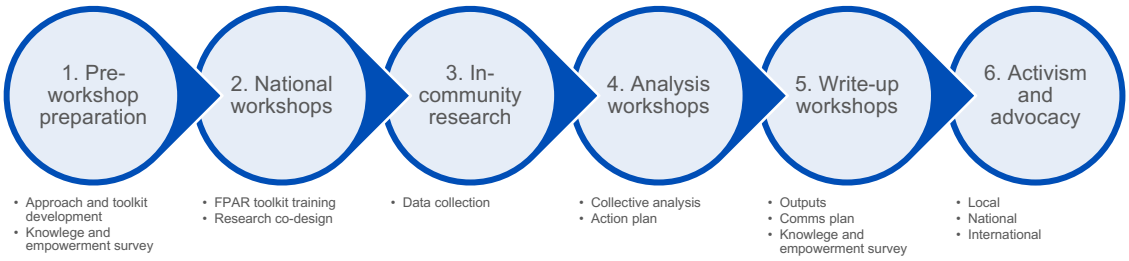
An online survey of the young women researchers was carried out to provide a baseline on pre-existing knowledge and confidence. National workshops with facilitators and mentors then provided the opportunity to co-design and plan out the research process, as well as undertake hands-on training on research skills, feminism, climate change, and FPAR methods. A variety of tools were trialled, from which the groups could select those most appropriate to their contexts when creating their research plans (see Table 1).

Since this research project was taking place during the global COVID-19 pandemic, these workshops were carried out in line with social distancing protocols and were held separately in the respective Zambian districts given travel restrictions. Mentors from the Plan International local offices were also trained in each workshop and provided vital ongoing support to the groups of young women in the FPAR research process, including within their communities. The researchers developed research aims, plans for data collection and

analysis in each location. While the intention was for data collection to be with wider members of the community, Covid risk management meant instead that the young women worked with small groups of young women and girls over a longer period of time in each location.

In cycle 3, the research teams had six weeks of data collection in their communities. The groups then reconvened in each country to share, compare and jointly analyse results in each country and develop action plans for activism and advocacy activities going forward. These plans were compared to the Plan International country office advocacy strategies to identify areas of coherence and future collaboration. A final workshop drew the researchers together once again to plan and write a report summarising findings and communication and to refine their advocacy plans for activism and engagement. The online survey was repeated to help evaluate the processes of learning and empowerment through the process, alongside extracts from the learning journals volunteered by the young women researchers. In the sixth cycle, the young women will work with Plan International locally, nationally and internationally to implement their advocacy plans.

Figure 3: 6 cycles of the FPAR process in this project



The research drew on a range of participatory and creative data collection methods that encourage diverse participation, access and inclusion. These include tools designed to help educate and situate climate change in lived experience, such as visioning exercises, those that helped establish impacts related to weather hazards and a changing climate, and those on understanding the gendered drivers of risk and resilience, especially through household decision making. Adaptation pathways exercises helped generate a range of response options, which could be overlaid onto stakeholder and decision-making maps. Young women researchers gained an active understanding of both feminism and climate change by trialling and developing these tools in cycle two, for deployment with wider groups of 40 girls and young women in each of the four locations for the field research.

Tools drew from common participatory techniques for introducing feminism, FPAR and climate change, including the Climate Vulnerability and Capacity Assessment, Y-Adapt and child-centred risk assessment toolkits (Dazé et al. 2020; Y-Adapt (nd); Plan International 2018; Molina et al. 2009). Stakeholder and power mapping helped to map out activism messages and pathways to advocate for just and equitable policies, and influence decision-makers. Finally, activism plans were mapped onto on Plan's country office outreach and influence mapping to examine synergies and common entry points.

Table 1: Tools employed in the methodology

Tool	Details	Purpose
Online participant survey	Survey carried out online by participants before and after the research process.	Capture self-rated language and writing skills to plan facilitation. Capture changes in knowledge and sense of empowerment.
Reflexive personal journals	Time set aside daily for personal diaries to reflect on personal development, feelings and the research process.	Tracking and reflecting on processes of knowledge generation and empowerment.
Feminism 101	Group exercises	To examine different understandings of feminism.
Masters House – overcoming patriarchy and oppression	Interactive exercise to construct and deconstruct a building representing patriarchal structures.	To explore the influence of patriarchal structures and how they can be challenged/overcome.
Visioning exercises	Drawing-based process	To envisage idealised development futures onto which climate impacts can be overlaid.
Gender pre-assessment	Cobwebs drawing group exercise	To understand the conditions and status of women and girls in the community from a rights perspective.
Climate change 101 interactive exercises	Physical group-based activities	Physically illustrate the greenhouse effect and climate change impacts.
Seasonal calendars	Participatory mapping of seasonal activities	Understand local livelihood patterns and seasonality.
Hazard mapping	Critical thinking challenge to map out extreme weather and its impacts, overlaid onto seasonal calendar.	Explore the link between climate, hazards and impacts with a focus on local context. Determine which hazards most affect the community.
Vulnerability matrix	Matrix-based group exercise	Identify the highest-priority livelihood assets and hazards. Analyse the degree of impact of hazards and changes on priority livelihood assets.
Impact chains and adaptation pathways	Graphic representations of chains	Analyse direct and indirect impacts of climate change in the community. Identify adaptation options to address identified impacts.
Household Decision-Making Pile Sorting	Interactive card-based sorting exercise	To explore who in the household has the authority to make important decisions. To discuss how decision-making could be more equal as a means to increase resilience.
Stakeholder mapping/power analysis	Dual-axis graph and Venn diagram drawing	To understand which institutions are most important to communities. To assess where power to address climate impacts lies.

**Masters house and the visioning exercises were adapted from tools developed by Just Associates. www.justassociates.org*

3.2 Ethics and Safeguarding

The project followed ethics and safeguarding guidance provided by research councils in Zambia, Zimbabwe and UK. Formal research approvals were given the University of Zambia Biomedical Research Ethics Committee in Zambia and the Medical Research Council of Zimbabwe, and from SOAS University of London. This project was undertaken in two specific circumstances: working with young women from marginalised communities and in the extraordinary circumstances of a global pandemic. The intention of an FPAR approach with young women is to empower their research skills and voices in household, community and wider geographical contexts where they ordinarily would not have the power to make decisions on the nature of the research, the methods, the analysis and outputs. We placed control in the hands of the young women facilitators and community researchers in order to empower voices that might otherwise be lost, harnessing the power of differences and building critical consciousness.

At the same time, the project recognised the potential for anxiety induced by learning about climate change, patriarchal structures or the responsibility of becoming research leaders. This was mediated through regular check-ins and the use of daily journals to help the young women researchers to reflect on their learning experiences and to surface and communicate any concerns. Female mentors from Plan International programme units familiar with the study locations supported the groups of young women through the process, attending all workshops and available to support young researchers if they had any questions or concerns.

Secondly, the COVID-19 pandemic required managing the FPAR process in line with the health risks that this presents. We minimised travel to comply with country-specific restrictions, held workshops in accordance to risk management plans that minimise the potential for virus transmission and related social distancing requirements, and restricted contact with wider community members in undertaking the research.

3.3 Limitations, FPAR and COVID-19 considerations

The relatively short timescale of this research resulted in a compressed version of the FPAR methodology that might otherwise have been realised across multiple years. These contexts and the time-pressures imposed by the funding for this project combined to present a context where the FPAR process did not include extensive pre-workshop contextual analysis that many such methodologies adopt. This is normally an important component in order to tailor the process and methods to the local context and engage wider community members. As such, there were limits to the potential for the research process to develop an in-depth process of personal transformation and empowerment with the young women researchers. It also affected our ability to ensure a robust and representative sample across different members of the communities in question.

Crucially, like research all over the world, this research had to adapt to the context of the COVID-19 pandemic. We took the view that the intent and epistemology of the FPAR research process was more important than the methods themselves (Coverdale et al. 2021), accepting that the main limitations were likely to be the restrictions in ability of the researchers to work with a wide range of participants or with larger groups. As such, fieldwork participation was limited to the researchers' peer groups of other young women in each of

the communities, limiting the robustness of the sample in representing the whole community but instead providing insights into the knowledge and experiences of young women and girls.

The COVID-19 crisis had the potential to derail the training, collaborative planning, data collection, analysis and writing processes. However, our sense is that the process and methods were both flexible and robust enough to provide reliable findings, while “entrusting participants with greater independence and responsibilities, researchers are reinforcing the empowering principles of co-production and collaboration” (Marzi 2020). The strength of pre-established relationships with the research mentors and the leadership of data collection by the young women researchers were central to mitigating the restrictions imposed by Covid- 19.

4.0 FINDINGS

A summary of findings across the two countries is shown in Table 3, before a more in-depth analysis of climate change impacts particularly on education, adaptation options, activism and advocacy plans, and findings on the FPAR process in terms of agency and empowerment of the young women researchers.

Table 2: Impacts and adaptation to climate change – summary of findings

KEY IMPACTS	TOOL TO DEVELOP FINDING	CASE STUDY AREA
Changes in rainfall patterns	Seasonal Calendar/Hazard Mapping	**ZAMBIA** Chisamba District (Chikonkomene, Chikobe, Chowa and Chipembi)
Loss of Crops	Hazard Mapping	
Destruction of Infrastructure		
Low school attendance	Gender pre-assessment	
Limited access to water	Household decision making	
Failing to maintain a livelihood	Vulnerability Matrix	
Contamination of water		
Vulnerability of Girls when seeking shelter	Household decision making	
Adaptation options (irrigation, diversification of livelihoods and drought resistant crops)	Adaptation pathways	
School dropout due to floods	Gender pre-assessment	ZAMBIA Chembe District (Temfwe, Milishi, Kasoma and Mambilima)
Low attendance in school due to droughts	Seasonal Calendar/Hazard Mapping	
Low attendance in school due to increased malaria	Hazard Mapping	
Relocation due to farming	Household decision making	
Young women engaging in sex work	Vulnerability Matrix	
Inaccessibility of schools during extreme weather events such as floods, cyclones: schools are as far as 10km	Seasonal Calendar/Hazard mapping	**ZIMBABWE** Chiredzi District and Tsholotsho District
Unequal gender roles between boys and girls	Gender pre-assessment and household decision making	
Lack of legal and administrative remedies for survivors of gender-based violence and sexual violence before, during and after climate change induced emergencies (not taken as important priority is access to food)	Vulnerability matrix & stakeholder mapping	
Addressing economic vulnerabilities of women and girls	Vulnerability matrix & household decision mapping	
Access to Information on gender equality, early warning systems for climate change induced disasters such as floods and droughts	Adaptation pathway	
Adaptation options (irrigation, diversification of livelihoods and drought resistant crops)	Adaptation pathway	

4.1 Impacts of climate variability and change on livelihoods

The research revealed the importance of climate-related factors in determining the livelihoods, wellbeing and development pathways in all study areas across both countries, something common to many rural communities reliant largely on rainfed agriculture. The seasonal calendar and hazard mapping research tools revealed experiences of less predictable weather patterns, increasing frequency of floods and recurring droughts.

> *"There are drastic swings in the weather patterns in Chiredzi. Within a single farming season, we are experiencing both excessive rainfall and a dry spell, low lying areas experience floods whilst high altitude areas experience strong winds, this puts a lot of pressure on communities."*
>
> **Young woman participant in Chiredzi district, Zimbabwe**

Both locations in **Zimbabwe** were reported as increasingly flood-prone as compared to when the participants were younger. Two school children died in Muhlanguleni, Chiredzi South as a result of floods in 2019, with 50 homes destroyed. In Tsholotsho, 319 households were displaced by Cyclone Dineo in the 2016/17 season. Despite this, both areas also experience relatively low annual rainfall and long periods of drought, which is putting growing stress on agriculture-based livelihoods. Participants reported that Chiredzi district is becoming less suitable for maize and other large grains, while goat and cattle rearing is also sensitive to a changing climate due to declining availability of grass and other forage. High winds are reported to be affecting communities in higher altitudes, though a trend was not identified. Increasing demand on water from a growing human population and reliance on ground-water has reportedly led to intrusion of saline water. Poor water management practices and institutional failures to enable or regulate water access compound the impacts of the droughts. Tsholotsho has also experienced excessive crop failures over recent years.

In both communities, the researchers unearthed a range of local beliefs and customary knowledge related to the climate (see Table 3). While these were labelled as 'myths' by the young researchers, it is important to recognise the cultural significance of these beliefs in determining local understanding of, and responses to, a changing climate. Some of these examples also demonstrate patriarchal gender norms that structure the links between climate, gender and age in the communities.

Table 3: Customary knowledge related to climate reported in Zimbabwe

Rainmaking ceremonies should be done by women who are no longer giving birth and should not be sexually active when this is done, if this is breached there will be drought.	Both locations
Before rainmaking ceremonies, communities collect bones and burn them as part of cleansing(kelele) – if this is not done, it does not rain.	Tsholotsho
Beer is brewed and sent to the sacred place of *Njelele* every August to pray for the rains, if this is not done properly – there will be droughts.	Tsholotsho
Abortions result in drought.	Chiredzi
If there are clouds for three days without raining, elders must go and check the graveyards if there is an open grave, this can cause the rains not to fall.	Chiredzi

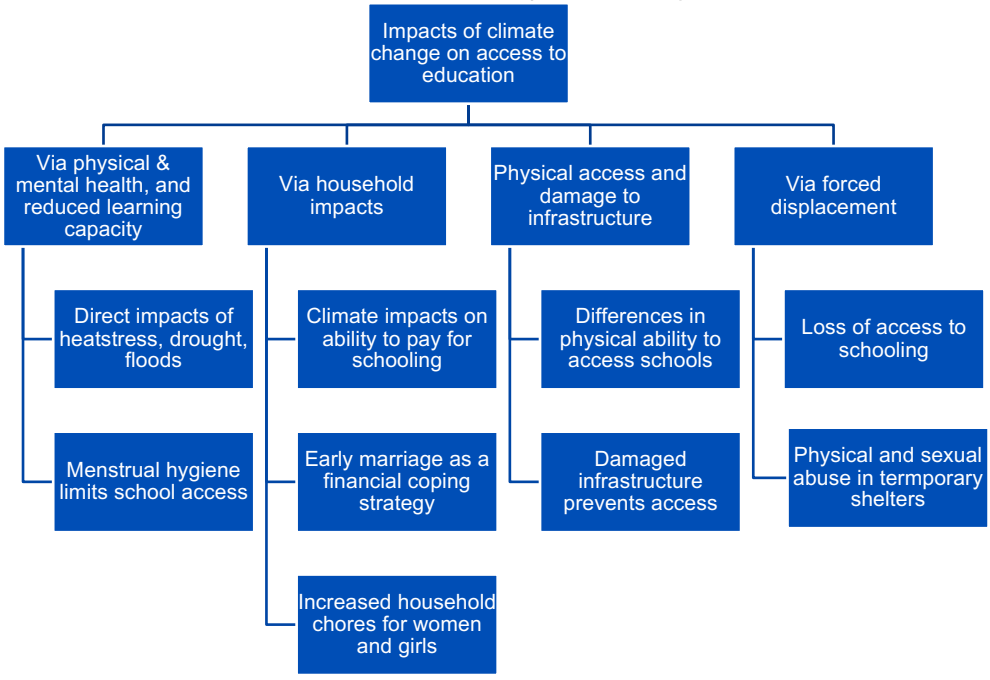
In **Zambia**, all locations reported both higher temperatures as compared to when the participants were younger and changes in rainfall. Delays in the onset of rains (reported in

Chisamba district locations) and excessive rainfall when it did arrive (reported in Luapula district) have both led to crop failures in recent years. Extreme weather conditions have also resulted in loss of livestock, destruction of buildings (including marketplaces), contamination of water and in Luapula was linked to outbreaks of diseases such as malaria. Focus group discussions in Chisamba district revealed instance of floods in 2021 sweeping a bus from a bridge, leading to serious injuries to passengers. Flooding was also linked to social impacts such as reduced access to church buildings, with the consequent loss of societal interaction, or hazardous behaviours as parishioners try to cross flood waters. Yet the low rainfall totals have also caused water shortages, leading to use of contaminated water, with consequences for household health and hygiene.

4.2 Gendered climate-related impacts on education

The research results emphasised access to education as one of the major impacts of a changing climate, with significant implications for girls and young women's life-courses. Some of these impacts were the result of an inability to access education due to physical access restrictions caused by extreme weather events such as flooding. Some responses to these impacts can be termed 'maladaptive', mediated by gendered household decision-making as a response to climate-related impacts that reduced girls' access to education. Others related to the increased exposure to physical and sexual abuse caused when schools provide temporary shelter from extreme weather events. These impacts are discussed below and captured in Figure 4, building on the typology by Sims (2021).

Figure 4: Gendered impacts of climate variability and change on education



Physical access problems were illustrated in the research results in Chiredzi district, **Zimbabwe**, where participants noted that some girls cannot swim across flooded rivers to

go to school or go home in contrast to boys. This is compounded by the distances that many students have to walk to school (up to 20km for those who travel from Gulugi to Mupinga secondary school in Chiredzi), which heightens potential disruptions and can tire pupils before they reach school, especially when walking in higher temperatures or rainfall (see similar findings from Solomon Islands - Plan International Australia 2019). In Zambia, although there has been an increase in the number of schools, in Chembe floods have often destroyed roads and bridges, rendering schools inaccessible. Reduced physical access to other services was also highlighted, including clinics, which compromises access to contraception, with knock-on impacts for sexual and reproductive health and rights of young women and resulting educational attainment.

The consequences of both drought and floods on **menstrual hygiene** illustrates how the experience of climate change impacts are mediated by gender. Respondents in Chembe, Zambia, reported lower school attendance for girls during their menstrual cycles as they are unable to cross flooded rivers while their male counterparts are able to do so. Respondents in both countries also reported that limited access to water at schools because of climate change has affected girls' menstrual hygiene, particularly where they have to walk long distances to school and back without adequate sanitary products and limited water for hygiene and laundering. Impacts ranged from lower self-esteem to missing classes altogether until they finish their cycle.

> *"Because of low rainfall received we now share water with animals and that contaminates it making it difficult to maintain a good health and menstrual hygiene."*
>
> ***FGD, Chisamba district, Zambia***

Results from both countries demonstrated how climate vulnerabilities intersect with socio-economic poverty and gendered **household decision-making** to influence girls' experiences of impacts. All locations in both countries reported that poorer households affected by climate-related impacts were reported as more likely to use early and forced child marriage and unions as a financial coping response, resulting in these girls dropping out of school with limited opportunities to return.

Poorer households were also reported as more likely to pull girls out of school than boys when shocks meant they could not afford fees or needed assistance with domestic and economic tasks. Researchers in Zambia noted that where the rains hinder businesses and livelihoods, parents prefer keeping the boy child rather than the girl child in school, if they are forced to choose between the two. In Zimbabwe, girls were more commonly kept home to help meet household food demands or find water from further afield. Girls from poorer families in Zimbabwe suffer from cold weather extremes during classes as they cannot afford winter wear such as shoes, socks and jerseys.

A major finding across locations related to the link between climate impacts and the heightened risk of **physical and sexual abuse** to girls and young women. This includes both domestic and school-based contexts. Results in Chiredzi, Zimbabwe highlighted that when rivers flood during school hours, girls are forced to stay in classrooms or travel at night, increasing their vulnerability to sexual abuse. Further, Cyclone Idai in 2019 forced girls to stay in inappropriate, unhygienic, and indecent accommodation where they shared

bedrooms with boys and/or older men, exposing them to abuse and unwanted pregnancies which disrupted or ended their schooling.

While mental health was not raised directly by the participants, a number of studies have identified a causal chain between a child's experience of a weather-related disaster; an increase in post-traumatic stress, anxiety and other psychological symptoms, and declining educational outcomes (Siriwardhana et al., 2013; Kousky, 2016; Peek et al., 2018). Peek et al. (2018) highlighted the experience of disasters as a key influence on children's ability to focus on schoolwork and poor classroom behaviour.

In both Chiredzi and Tsholotsho, Zimbabwe, women and girls have been forced to stay in temporary shelters (tents) in camps during extreme weather conditions like floods. Confinement to temporary shelters with limited water, sanitation and hygiene infrastructure exposes girls and women to diseases in addition to sexual assault and rape. In Zambia, the researchers revealed that girls are often abused while seeking shelter when their homes are flooded, but that this commonly went unreported or ignored.

> *"As girls, when the rains destroy our houses, our parents seek shelter on our behalf in the neighbourhood. While there, we are taken advantage of by boys and men living in that house where we will be sheltered."*
>
> ***Young Woman Researcher, Zambia***

Limited access to water also increases the time allocated to girls for completing household chores such as fetching water from more distant places, reportedly increasing the risk of abuse and sexual violence from men and cattle herders in Zambia who use the same drinking places. In Zambia, teachers were also reported to be sending girls to fetch water for them, putting them in danger of abuse and reducing the time for girls to concentrate on schoolwork. Similar impacts of climate change on domestic chores were reported in Zimbabwe, both risk of abuse and reduced educational time as such work is done either before or after classes, limiting time for study. In Gujuli Village, a young girl aged 12, was sent to fetch locusts during school hours in March 2021, never returned home and is still missing. In Chemba, Zambia another indirect effect of climate-induced economic challenges is the increased risk of girls turning to selling and exchanging sex as a livelihood, especially in villages near the DRC border with haulage traffic.

In both countries, researchers highlighted the influence of patriarchal structures, social norms and entrenched cultural beliefs in contributing to gender-based violence. In Zimbabwe, they noted that rape is not considered sexual violence in the two communities, with one young woman researcher commenting: "*Traditional leaders who are the custodians of culture do not believe women and girls when they report that they have been raped, they always assume that there was consent. This belief makes it difficult for perpetrators to be brought to book and for the girls to get justice in traditional courts*."

Finally, research in Zimbabwe highlighted gender gaps in **access to early warning information** regarding extreme weather events, including floods, with girls experiencing limited access to radio and television, newspapers, or social media. In both Chiredzi and Tsholotsho girls reported that this increased their vulnerability and any such information was commonly provided by brothers and fathers who have the opportunity and time to go to local

shops and drinking places that have TVs and radios, especially during European soccer seasons.

The gendered impacts of climate change surfaced in this research demonstrate a range of implications for the future lives of young women and girls in these locations. Drawing on the metaphor of development pathways (Denton et al. 2014), these impacts can be classified into three types of impact: disruptive, divertive and deterministic. Disruptive impacts characterise climate risks that set back or limit progress on development pathways; Divertive impacts constrain options for particular development pathways; Deterministic impacts dictate the course of future development pathways. Disruptive pathways are exemplified in the research findings by reduced school attendance or reduced time for study due to domestic duties due to floods or droughts. This constrains learning and academic achievement, which in turn limits progress on, but does not necessarily prevent, a particular pathway towards improved human development and climate resilient outcomes. Divertive pathways represent the potential for climate change to constrain the choice of different options available to young women. This is illustrated by the decline of agriculture as a livelihood option under changing climatic conditions, pushing young people to seek less climate-sensitive options, including waged employment in urban centres. Deterministic impacts provide an extreme scenario of pathways becoming locked-in, with limited choices available for future potential for human development and/or climate resilience. This is exemplified by the case of child marriage as a coping strategy for climate shocks and stresses, which permanently ends schooling for girls and locks them into a future centred on domestic activities.

4.3 Climate resilient development and adaptation options

Most existing adaptation options identified in the study related to reducing the climate-sensitivity of livelihoods activities, particularly in agriculture. In both Chiredzi and Tsholotsho in Zimbabwe, farmers grow drought resistant crops such as sorghum, rapoko and millet, peanuts and round nuts, maize, watermelons, pumpkins, sunflower, mashamba, cotton, bhondasi. However, these small grains are only sufficient for subsistence purposes and in most cases do not avail them with sufficient income to be able to afford expenses such as school fees. In Chiredzi, however farmers get some income from engaging in contract farming with Delta Beverages (a beer and soft drink manufacturing company) wherein they grow sorghum on behalf of Delta Beverages.

Another adaptation method shared in Zambia was in diversifying away from agricultural or crop-growing livelihoods. In Chipembi, learning other skills like tailoring and hairdressing was reported as an ongoing initiative. Girls in Temfe and Kasoma shared their experiences with chicken rearing as an alternative source of income. In Zambia, participants also reported growing of drought-resistant crops such as cassava and sweet potato in Luapula and preserving food such as vegetables, cassava and cow peas. Conservation agriculture was reported as one of the strategies in Mambilima, Chembe District, while planting on higher ground in Luapula is one measure that was noted by the girls as an adaptation measure. Communities in both Chiredzi and Chilonga, Zimbabwe, are moving to livestock production in lieu of crop production. The Lowveld is a hub of livestock which can thrive under the harsh

climatic conditions (hard Mashona cattle and goats, pigs, sheep, donkeys, guinea fowls and chicken).

Methods for conservation and storage of water were also popularly reported technical measures. Girls in Chikomeni and Lupani (Chembe District, Zambia) reported tree planting efforts in areas affected by deforestation, including due to the impacts of drilling of boreholes. In Chiredzi, Zimbabwe, the government is planning to convert the area around Chilonga into a green belt through planting lucerne grass. There have nevertheless been widespread complaints from the Chilonga community that such a project will render over 12,000 families landless, illustrating a trade-off and potentially maladaptive outcome for these communities already impoverished by climate change. Building reservoirs and practicing water harvesting was also reported in Chipembi and reducing exposure by building houses away from shores in Chembe, Zambia. In Zimbabwe, various government plans have been drawn up to construct sub-basin dams for surface water supply, with some of these such as the Tokwe Mukosi Dam recently completed. Understanding and managing the impacts on both the natural environment and local communities will be critical to their success as measures to enhance resilience to climate change.

While the existence of these adaptation actions is encouraging, it is at odds with tackling the gender-related impacts on education and wellbeing identified by the FPAR research in the case study locations. As such, it reveals the technical and managerial biases often associated with climate change adaptation and resilience. These biases reflect the framing of climate change problems as stemming from the natural hazard rather than as social-environmental relations (Nightingale et al. 2020). As emerging and potentially urgent issues, there remains a danger that climate change and disaster risks are prioritised or treated separately from wider risks to livelihoods, especially given the increasing amounts of resources earmarked for climate change issues globally. In contrast, this research highlights how impacts related to climate change are mediated as part of a wider range of human and societal dimensions of risk and resilience. This interlinking spectrum suggests that interventions that focus on climate-related risks alone are unlikely to reflect community perceptions or priorities, and may inadvertently lead to actions that contradict other development priorities, or indeed increase potential harm from climate-related risks (maladaptation).

In this context, the research highlights the importance of social structures of patriarchy that are fundamental to the transformational changes that are increasingly being called for to promote more gender just climate-resilient pathways for sustainable development; many of these emphasising the importance of agency and empowerment rather than only socio-technological step-changes (Bahadur and Tanner 2014; Mapfumo et al. 2017; Chung Tiam Fook 2017; Magnan et al. 2020).

The FPAR approach helped to surface some of the structural conditions that both mediate the impacts of climate change on women and girls, and guide the changes necessary for adaptation, that can address the root causes of risk and resilience. This helps to reinforce the importance of personal and political spheres of transformation in determining outcomes for gender just climate-resilient development, rather than a sole focus on the practical, technical and behavioural (O'Brien and Sygna, 2013). Nevertheless, transformations also require contesting and breaking down structures of patriarchy that constrain decision options

and pathways, which in turn can have a large influence on both behaviours and technical responses.

4.4 Recommendations and advocacy action plans

The emphasis on agency and empowerment in using FPAR approaches extends beyond the research planning and implementation and into advocacy and engagement activities in order to effect changes. In the case of this research, the recommendations made in the analysis exercises were developed into advocacy strategies that map out key issues, key stakeholder and influencers, desired changes, messages and communication channels.

Full recommendations and advocacy summaries can be found in Annex Four, but are captured in Tables Four and Five below. The young women in both countries recommended that communities should take action to address the immediate and looming challenges of climate change, noting the need for behavioural change, including at a personal level. The young women recommended that more young people need to learn, understand, and act on climate change in their communities.

Recommendations included those to government to address the impacts that are faced by girls and young women especially in access to and attendance in schools, such as the need to build more/safer schools, changing the school calendars and establishing satellite schools. The researchers also highlighted the role of community and families in ensuring that they reduce the vulnerability of girls and young women by avoiding the coping strategy of marrying off girls when faced with climate induced challenges. For civil society organisations and other players including the private sector, the young women recommended the setting up of programmes that enhance the community's resilience to climate change and the creation of alternative livelihoods that are less climate-sensitive.

Table 4: Country Specific Recommendations: Zambia

ISSUE	TARGETED STAKEHOLDER	RECOMENDATION
Low school attendance	Ministry of Education Ministry of Water Development, Sanitation and Environmental Development	Build more schools so that pupils don't cross rivers. Reschedule school calendar. Build bridges and drainages. Establish satellite schools in flood prone communities. Provide scholarships to cover school fees for girls.
Limited access to water	Ministry of Water and Sanitation	To drill boreholes and provide safe, clean, gender sensitive water systems and storage.
Failing to maintain a livelihood	Ministry of Gender Ministry of Forestry	Empower girls with entrepreneurial skills that are not likely to be affected by climate change. Encourage people to stop cutting down trees.
Loss of Crops	Ministry of Agriculture Ministry of Forestry	Provide drought resistant and water-resistant plants. Enforce policies on cutting down trees. Encourage afforestation and re-afforestation.
Destruction of Infrastructure	Ministry of infrastructure Development	Provide high quality safe and gender sensitive climate resilient infrastructure.
Contamination of water	Ministry of water and Sanitation	Provide safe, clean and gender sensitive water systems. Provide chlorine.

	Ministry of Health	
Vulnerability of girls when seeking shelter	Disaster Management and Mitigation Unit	Provide safe, gender sensitive temporary shelter for those affected by floods and other disasters. These include protection components such as separate toilets and adequate lighting, referral systems to easily report or complain where necessary.
Low attendance in school due to increased malaria	Ministry of Health	Provision of more mosquito nets. Provide information through gender sensitive channels on the importance of sleeping under a mosquito net.
	Ministry of Fisheries	Implement the guidelines in the Fisheries Act to ensure that people engaged in fisheries are adequately supported and do not have to resort to using mosquito nets earmarked for malaria prevention.
	Traditional Leaders	Mobilise the community to understand and support the sleeping under a mosquito net and its important in preventing malaria in the community

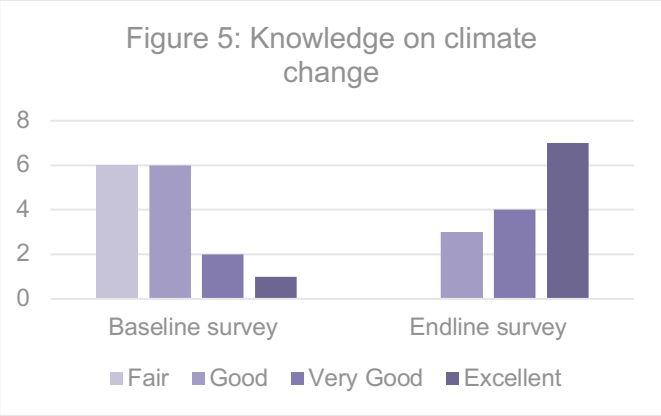
Table 5: Country Specific Recommendations: Zimbabwe

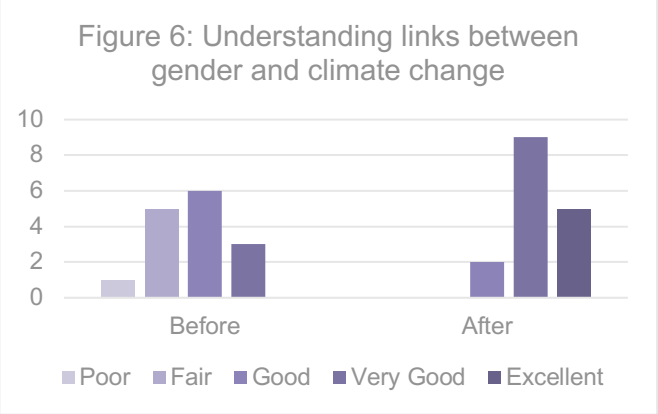
CONCLUSION	TARGETED STAKEHOLDER	RECCOMENDATION
Inaccessibility of schools during extreme weather events such as floods, cyclones: Schools are as far as 10km away.	Ministry of Education Rural District Council Member of Parliament Councillors	Gender budgeting by Rural District Councils: Their budgets must mirror the social needs and concerns of women and girls including: provision of safe water, construction of schools within reasonable distances from homesteads, construction and repair of roads and bridges, provision of health care facilities, projects that reduce economic vulnerabilities of women. Provide scholarships to cover transport and fees for girls. Community Development Funds (CDF) to be used for the above listed purposes.
Unequal gender roles between boys and girls	Parents NGOs Ministry of Education	NGOs to support capacity building of family members on gender equality. Ministry of Education to mainstream gender equality and climate education in primary and secondary education curricula.
Access to information on gender equality, early warning systems for climate change induced disasters such as floods and droughts	Ministry of Information Mobile Service Providers District Civil Protection Unit Meteorological Department	Girls, through their local councillors and members of Parliament, engage to demand installation of boosters in areas where there is no mobile network coverage so as to devise ways of sending information to those with access through personal and family-owned mobile phones. Ministry of Information to provide radio and television coverage to areas where this is not available.
Lack of legal and administrative remedies for survivors of gender-based and sexual violence before, during and after climate change induced emergencies (not taken as important a priority as access to food)	Zimbabwe Republic Police (ZRP). Ministry of Justice NGOs Traditional Leaders Church Leaders	Girls engage with NGOs to support local ZRP offices in the establishment and operationalization of Victim Friendly Units (VFUs). Girls to work with local NGOs working on GBV to establish referral pathways for the survivors.

Addressing economic vulnerabilities of women and girls	Local NGOs Local MPs Local Councillors	Demand local MPs to prioritize climate change responsive economic activities (projects) for women and girls from the Capacity and Delivery Fund (CDF) and other funds at their disposal. Attend budget consultation meetings for Rural District Councils (RDC) and demand investments in climate change responsive gainful economic activities (projects) for women and girls.

4.5 Empowerment and agency through the FPAR process

The FPAR approach draws attention beyond instrumental outcomes to ethical concerns around gender empowerment and the processes of change needed to achieve gender equality. Climate change policy has tended to frame both problems and solutions in terms of technical and economic solutions, for which entry points for youth or gender concerns may not be obvious (Tanner and Allouche 2011; Westholm and Arora-Jonsson 2018). FPAR explicitly aims to empower participants by situating their own experience within the context of structures and contestations of power. The research aims to serve as a platform for renegotiating power relations, including through acts of advocacy and resistance (Woroniecki 2019). The research captured the process of empowerment through the advocacy plans outlined above, reflective journals by the researchers and a before and after online survey. Results of the survey are shown in Annex 3 and reveal a significant increase in participant confidence as researchers, in using participatory tools and in knowledge about climate change (Figure 5). Crucially, the reported understanding of links between gender and climate change rose through the process, with over 87% of participants reporting their understanding as very good or excellent, compared with less than 19% before the training and research processes (see Figure 6).





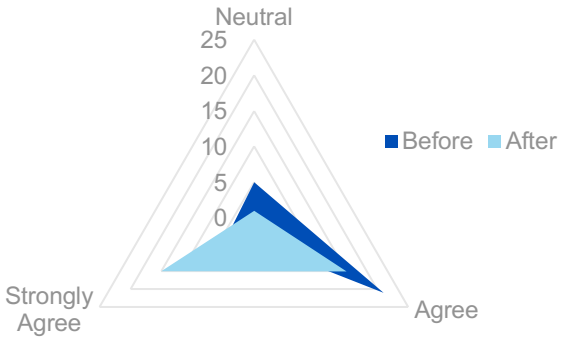
Those strongly agreeing with the statement 'I feel empowered to act on climate change at household level' rose from 19% to 50%; and at 'school level' rising from 6% to 44% (see Figure 7). However, changes in the perception that the community as a whole was empowered to act were less significant, in part because COVID-19 limited the reach of the action research and partly as researchers discovered the scale of the task and the difficulty in tackling embedded social norms and power structures.

A number of the journal entries helped demonstrate the sense of personal empowerment as a result of the research process, including:

- *"I feel so happy, I never knew that someone like me can do research and now I understand better issues of climate change."*
  Annie Nkonde, 24, Chembe District, Zambia
- *"I am very proud that I helped my community to learn and start discussions on climate change. This process has helped me to gather confidence."*
  Musonda Chibwe, 23, Chembe District, Zambia

- *"I now know that everyone can be a feminist."* Penlop Makoleka, 21, Kabwe District, Zambia
- *"I never thought I could be a researcher at some point in my life, getting the opportunity to be a feminist researcher was good for my status."* Ilandra Ndlovu, 20, Tsholotsho District, Zimbabwe
- "*Now they call me a feminist in my community."* Grace Chiponge, 24, Chisamba District, Zambia
- *"I felt very empowered by leading this research using the unique tools and methodology that was easy for people to unpack climate change which I thought was very complex."* Faith Manduzana, 25, Chiredzi District, Zimbabwe
- "*This research enabled young people to be free and share their views, for me I was happy to meet new people and hear how they live their lives. To know the decision making in homes was interesting and how girls challenge this."* Mwaka Siamayuwa, 20, Kabew District, Zambia

Figure 7: Combined responses: I feel empowered to act on climate change in my school and my household



5.0 LESSONS AND CONCLUSIONS

The results of this FPAR process provide a number of lessons and conclusions going forward.

On the findings of the research:

- The incidence and impacts of climate-related shocks and stresses are growing in the case study locations, which are acutely exposed due to the climate-sensitive nature of livelihoods.
- The impacts of climate variability and change are acutely felt in terms of disruption of and access to education in households in rural Zimbabwe and Zambia.
- This disruption is experienced through a range of intersectional characteristics, but gender plays out as a significant driver of lower education and wellbeing outcomes for girls and young women.
- While there is evidence that activities to adapt to climate change are developing in the case study areas, to date these are largely linked to agricultural livelihoods and not to educational access.
- Climate change impacts on education play onto existing structures of inequality and patriarchy that place greater value on boys' education than on girls' education, and place value on early and forced child marriage and unions as a coping strategy during times of crisis.
- Climate shocks and stresses can undermine health and learning not only directly, but also lead to greater risk of physical and sexual violence against women and girls.

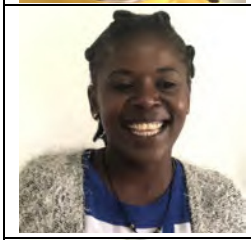
On the Feminist Participatory Action Research process:

- FPAR approaches provide an emancipatory and decolonising approach to research that is owned by local researchers.
- An explicitly feminist approach helps to highlight the need to challenge societal structures that create existing inequalities, rather than centring responses solely on climate change.
- Learning and research leadership through FPAR approaches can empower and enhance confidence of young women to understand feminist perspectives on climate change as it relates to their lives.
- FPAR provides a framework that is explicitly geared towards understanding and challenging the barriers to gender inequality in a changing climate, enabling advocacy and engagement strategies that are underpinned by evidence.

ANNEXES

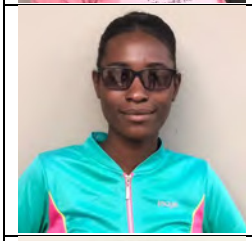
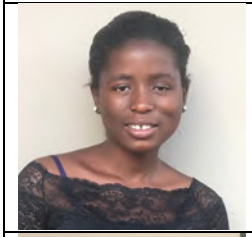
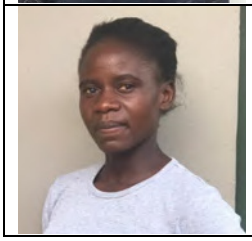
Annex 1: Researcher profiles and reflections

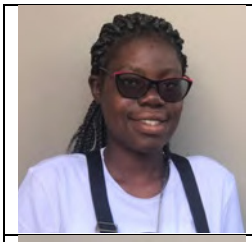
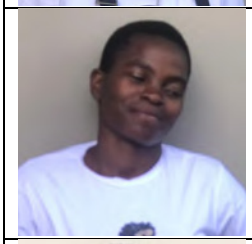
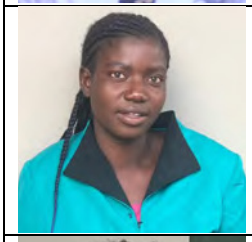
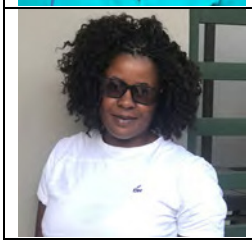
Zambia researcher profiles and reflections

	**Name: Mwaka Siamayuwa** Age: 20 Years Area: Kabwe *"This research enabled young people to be free and share their views, for me I was happy to meet new people and hear how they live their lives. To know the decision making in homes was interesting and how girls challenge this."*
	**Name: Naomy Namukoko** Age: 23 Years Area: Chembe *"It was good to be part of a process that everything was provided and to be part of this process where girls shared their stories. I was really helped in summarizing everything by keeping a journal."*
	**Name: Idah Salimu** Age: 24 Years Area: Chipembi *"We were well prepared for the research and the data we gathered gave us an idea of how people live their lives, and it was important for me to know that people out there have plans to adapt to the effects of climate change."*
	**Name: Penlop Makoleka** Age: 21 Area: Kabwe *"It was good that we were paired under this research as we complemented each other. The Impact analysis and adaptation tool gave me interesting empowering information. I now know that everyone can be a feminist."*
	**Name: Grace Chiponge** Age: 24 Area: Chipembi *"Most of the girls did not know about FPAR until I explained. Now they call me a feminist in my community. I also enjoyed the ride in the vehicle and going around the communities."*
	**Name: Purity Mwewa** Age: 20 Area: Chembe *"I worked well using the methods that we were taught; it was easy for me because there was always a helping hand from my partner and mentor. Now they all call me a climate change champion."*

	**Name: Annie Nkonde** Age: 24 Years Area: Chembe *"I feel so happy, I never knew that someone like me can do research and now I understand better issues of climate change."*
	**Name: Musonda Chibwe** Age: 23 Years Area: Chembe *"I am very proud that I helped my community to learn and start discussions on climate change. This process has helped me to gather confidence."*

Zimbabwe researcher profiles and reflections

	**Thabisile Previous Mpofu** Age: 20 Years Tsholotsho *"We had easy and accessible tools that allowed participants to freely engage in the conversations. I actually learnt that people know their rights and had a lot of knowledge and experience on climate change."*
	**Name: Ilandra Ndlovu** Age: 20 Years Area: Tsholotsho *"I never thought I could be a researcher at some point in my life, getting the opportunity to be a feminist researcher was good for my status."*
	**Name: Patricia Lisimati** Age: 27 Years Area: Chiredzi *"The research was well received from stakeholders, mothers and girls were happy that the programme allowed them to talk about gender issues as they relate to climate change since most interventions in their communities are gender blind."*
	**Name: Gracious Sibindi** Age: 23 Area: Tsholotsho *"The research was one of the few in person meetings after lockdown, hence it was well received, people were excited to participate, the communities helped us to set up the meetings and divide the women and girls into various groups making it possible for the research to have a smooth flow."*

	**Name: Beaullah Chihosana** Age: 22 Area: Chiredzi *"Participants appreciated the tools and approach to the research, when we went to meet the adolescent girls in schools, teachers especially those who teach geography also attended and took copious notes."*
	**Name: Faith Manduzana** Age: 25 Area: Chiredzi *"I felt very empowered by leading this research using the unique tools and methodology that was easy for people to unpack climate change which I thought was very complex."*
	**Name: Lizzinety Mudzingo** Age: 28 Years Area: Chiredzi *"Since this was the first week of schools opening, when we visited some schools, we met young girls who had been expelled from school for non- payment of school fees, we could therefore relate with the impact of climate change on girls' education."*
	**Name: Nomakhosazana Mlalazi** Age: 27 Years Area: Tsholotsho *"I was surprised to discover that communities actually knew a lot more about climate change, a lot of myths and beliefs were also shared, this made our work much easier and fun."*

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PLAN International, the Red Cross Red Crescent Climate Centre, the Engagement Lab at Emerson College, the Philippines Red Cross, and PLAN Philippines.

Annex 3: Results of Knowledge and Empowerment Survey

Experience in Research		
	Pre-Training	Post Training
No Response	1	0
Fair	1	0
Good	12	6
Very Good	2	4
Excellent	0	6

Experience in participatory tools		
	Pre-Training	Post Training
No Response	1	0
Fair	3	0
Good	7	4
Very Good	5	3
Excellent	0	9

Understanding of impacts of climate change		
	Pre-Training	Post Training
No Response	1	0
Fair	6	0
Good	6	3
Very Good	2	4
Excellent	1	7

Knowledge on possible responses to climate change		
	Pre-Training	Post Training
No Response	1	0
Fair	6	0
Good	6	5
Very Good	2	10
Excellent	0	1

Understanding on gender		
	Pre-Training	Post Training
No Response	1	0
Good	7	3
Very Good	4	9
Excellent	4	4

Understanding of feminism		
	Pre-Training	Post Training
No Response	1	0
Poor	3	0
Fair	4	0
Good	4	1
Very Good	2	7
Excellent	1	8

Understanding of relationship between gender and climate change		
	Pre-Training	Post Training
No Response	1	0
Poor	1	0
Fair	5	0
Good	6	2
Very Good	3	9
Excellent	0	5

Empowered to act on climate change at household level		
No Response	1	0
Neutral	2	1
Agree	10	7
Strongly Agree	3	8

Empowered to act on climate change in my school		
No Response	1	0
Disagree	0	1
Neutral	3	0
Agree	11	8
Strongly Agree	1	7

Community Empowered to act on climate change		
No Response	1	0
Neutral	4	8
Agree	10	4
Strongly Agree	1	9

ANNEX 4: ADVOCACY STRATEGIES

ADVOCACY STRATEGY FOR CHIKONKOMENE, CHIKOBE, CHOWA AND CHIPEMBI - ZAMBIA

CHALLENGE ADVOCACY ISSUE	STAKEHOLDER	DESIRED CHANGE	KEY MESSAGES	KEY INFLUENCERS	CHANNELS OF COMMUNICATION
Low school attendance	Ministry of Education Ministry of Water Development, Sanitation and Environmental Development	Build more schools so that pupils don't cross rivers. Reschedule school calendar. Build bridges and drainages.	Even with affirmative action, there is low school attendance by girls due to floods.	Community Chief	Dialogue meeting
Limited access to water	Ministry of Water and Sanitation	Drill boreholes and provide good water systems.	I need water, it's my right.	Plan International Zambia Water Aid World Vision (NGOs)	Stakeholder Meeting
Failing to maintain a livelihood	Ministry of Gender Ministry of Forestry	Empower girls with entrepreneur skills that are not likely to be affected by climate change. Encourage people to stop cutting down trees.	I need a skill to sustain my Livelihood.	Community Leader and NGOs (Plan International Zambia)	A detailed letter
Loss of Crops	Ministry of Agriculture Ministry of Forestry	Provide drought resistant and water-resistant plants. Enforce policies on cutting down trees. Encourage afforestation and re-afforestation.	Large portions of crops are destroyed due to floods and drought.	Camp Officers of the community	Detailed Letter
Destruction of Infrastructure	Ministry of Infrastructure Development	Provide high quality infrastructure.	We need high quality, strong and reliable infrastructure.	Disaster Management and Mitigation Unit	Dialogue Meeting
Contamination of water	Ministry of Water and Sanitation Ministry of Health	Provide good water systems. Provide chlorine.	I'm entitled to clean water for good health.	Ministry of Good Health	Stakeholder Meeting
Vulnerability of Girls when seeking shelter	Disaster Management and Mitigation Unit	Provide temporal shelter.	Provide temporal shelter in disasters as girls are being abused.	Media	TV programs on local channels e.g Sunday Interview on ZNBC

ADVOCACY STRATEGY FOR TEMFWE, MILISHI, KASOMA AND MAMBILIMA - ZAMBIA

CHALLENGE ADVOCACY ISSUE	STAKEHOLDER	DESIRED CHANGE	KEY MESSAGES	KEY INFLUENCERS	CHANNELS OF COMMUNICATION
Low school attendance	Ministry of Education Ministry of Water Development, Sanitation and Environmental Development	Build more schools so that pupils don't cross rivers. Reschedule school calendar. Build bridges and drainages.	Even with Affirmative Action, there is low school attendance by girls due to floods and other extreme climate events.	Community Chief	Dialogue meeting
Limited access to water	Ministry of water and sanitation	Drill boreholes and provide sustainable water systems and storage.	I need safe access to clean water, it's my Right.	Plan International Zambia Water Aid World Vision (NGOs)	Stakeholder Meeting
Failing to maintain a livelihood	Ministry of Gender Ministry of forestry	Empower girls with entrepreneur skills that are not sensitive to climate change. Encourage people to stop cutting down trees.	I need skills for a sustainable livelihood.	Community Leader and NGOs (Plan International Zambia)	A detailed letter
Loss of Crops	Ministry of Agriculture Ministry of forestry	Provide drought resistant and water-resistant plants. Enforce policies on deforestation. Encourage afforestation and re-afforestation.	Large portions of crops are destroyed due to floods and drought.	Camp Officers of the community	Detailed Letter
Destruction of Infrastructure	Ministry of infrastructure Development	Provide high quality climate resilient infrastructure.	We need high quality, strong, reliable and gender-sensitive infrastructure.	DMMU	Dialogue Meeting
Contamination of water	Ministry of water and Sanitation Ministry of health	Provide sustainable and accessible water systems. Provide Chlorine.	I'm entitled to safe water for good health and hygiene.	Ministry of good Health	Stakeholder Meeting
Vulnerability of Girls when seeking shelter	Disaster Management and Mitigation Unit	Provide temporal Shelter.	Provide safe, adequate and gender sensitive temporary shelters in disasters to protect girls and young women from gender-based violence.	Media	TV programs on local channels e.g Sunday Interview on ZNBC

ADVOCACY STRATEGY FOR CHIREDZI AND TSHOLOTSHO - ZIMBABWE

CHALLENGES/ ADVOCACY ISSUE	STAKEHOLDER	DESIRED CHANGE	KEY MESSAGES	KEY INFLUENCERS	CHANNELS OF COMMUNICATION
School dropout due to floods	Ministry of education	Build more schools Seasonal Calendar Provision of boats Satellite Schools Educational financing for girls All the above should be done in consultation with girls.	Education should be prioritized for girls.	The Media Traditional Leader Plan	Radio programs Dialogue
	Disaster Management	Provide relief food and gender sensitive sanitary facilities.	We need food and gender-sensitive dignity kits during times of emergencies.	Traditional Leaders	Meeting
	RDA	Construct roads and Bridges.	Safe roads and bridges for better education.	Traditional Leaders	Dialogue
	Metrology Department	Provide accurate information on weather.	Information is power to us as girls.	Media	Media
	Ministry of Health	Provision of Chlorine	Our health matters.	Traditional Leaders	Meeting
Low attendance in school due to droughts	Ministry of Agriculture	Grow drought resistant crops (Cassava and sweet potatoes).	Think beyond now.	Traditional Leaders	Meeting
	Plan	Drill Boreholes.	Water is life.	. CDF . Community Members	Community Mobilization
	Forestry Department	Sensitization on reforestation	We have the power we can plant more trees.	Forest Officers	Meeting
	Community	Have alternative source of green energy	Promote diversified sources of energy.	Traditional Leaders	Drama
Low attendance in school due to increased malaria	Ministry of Health	Provide more mosquito nets.	We can fight malaria by concerted efforts.	Traditional Leaders	Media Drama Posters
	Ministry of Fisheries	Implement the guidelines in the Fisheries Act.	Let's act now for a sustainable ecosystem.	Fishery Officers	Meetings
	Traditional Leaders	Provide information on the importance of sleeping under a mosquito net.	Let's work together to end malaria.	Ministry of Health	Meetings
	Community	Keep the surroundings clean, Bury ditch holes.	When we as communities face uncertainties such as floods or droughts, my best interest should be a priority.	Community	Drama Posters Music

Relocation due to farming	Traditional Leaders	Sensitization on importance of education	Education is key for girls	Ministry of Education	Dialogue
	Community	Prioritize education.	Whenever you see a girl, you should see potential, strength, someone who has a dream, wants to live a fulfilled life. You don't have to see house chores and a wife.	PTA Traditional Leaders	Meeting
	Plan	Help build schools.	Better buildings, better education	. CDF . Community Members	Community Meetings
	Parents	Encourage their children to attend schools	Girls have the power to foster and drive development.	. Traditional/Religious Leaders . Ministry of Education	Meeting Drama

Acknowledgements

Report Authors: Dr Tom Tanner, Lucy Mazingi and Darlington Farai Muyumbwa.

This report is the result of collective efforts from various contributors. However, the young women researchers, from Zambia and Zimbabwe, who participated throughout the entire process, and their colleagues in the communities that they visited and engaged with, are the primary authors and true owners of this output. We are grateful for their dedication and hard work.

The authors gratefully acknowledge the mentors Dolly Chanda, Evelyn Lungu and Mwango Mwenya from Plan Zambia and Pamela Chinembiri and Mandy Ruka from Plan Zimbabwe who supported the process, enabling the young women researchers to complete this research successfully.

Additional thanks go to: Shadreck Mwaba (Plan International Zambia), Masimba Mujuru (Plan International Zimbabwe) and Isobel Fergus (Plan International Global Hub) who helped coordinate the research process.

We are also grateful for funding contributions from Plan International Sweden, Plan International Finland, Plan International UK and the Plan International Global Hub.

Thank you to the following Plan International staff who provided valuable feedback on this report: Katherine Philipps (Plan International Australia), Dr Jacqueline Gallinetti, Isobel Fergus and Rachel Lumley (Plan International Global Hub), Sara Tornros (Plan International Sweden), Chiara Ambrosino (Plan International UK) and Masimba Mujuru (Plan International Zimbabwe).

Cover photograph: ©Plan International

Editing: Sharon Goulds

Design: Out of the Blue Creative Communication Solutions – www.outoftheblue.co.za

About Plan International

We strive to advance children's rights and equality for girls all over the world. We recognise the power and potential of every single child. But this is often suppressed by poverty, violence, exclusion and discrimination. And it's girls who are most affected. As an independent development and humanitarian organisation, we work alongside children, young people, our supporters and partners to tackle the root causes of the challenges facing girls and all vulnerable children. We support children's rights from birth until they reach adulthood, and enable children to prepare for and respond to crises and adversity. We drive changes in practice and policy at local, national and global levels using our reach, experience and knowledge. For over 80 years we have been building powerful partnerships for children, and we are active in over 75 countries.

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