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Communication for Development: Conceptualising Changes in Communication and Inclusive Rural Transformation in the Context of Environmental Change

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Abstract: Globally, rural conditions are in states of change. They are often highly vulnerable to climate and environmental change, extreme weather events, conflict, socio-economic changes, inequalities, and demographic changes. These changes are putting stress on rural areas, which rely upon agriculture and natural resources for their livelihoods and are often the foundation of national economies. Communication for development (C4D) has played an important role in addressing these challenges. Its thinking is broadly consistent with rural development goals—indeed, the roots of C4D come in part from rural development and agricultural extension. Communication for development (C4D) was defined by the World Congress on Communication for Development as "...a social process based on dialogue using a broad range of tools and methods. It also seeks change at different levels, including listening, building trust, sharing knowledge and skills, building policies, debating, and learning for sustained and meaningful change. It is not public relations or corporate communications". However, after decades of action to address these interrelated rural development challenges, much remains to be done. This paper critically considers the following: What does inclusive rural development mean now, in light of environmental change, and how does this affect the conceptualisation and practice of C4D? This was done by using three countries as case studies: Malawi, Ukraine, and the Philippines. Each of these countries represented contrasting challenges and opportunities for rural development and environmental change, with lessons from their experiences shedding insight into the communication for development thinking.

Keywords: communication for development; rural communication; rural transformation; inclusive rural development; environmental change

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1. Introduction

Rural communities and the conditions in rural areas are changing. With changing environmental conditions, rural areas traditionally reliant on agriculture and natural resources are facing substantial challenges in continuing to provide sustainable livelihoods for the rural citizenry. Policy shifts in economic and social development priorities are changing the rural landscape: increased needs for housing have brought rural land into peri-urban areas, changing its use from agriculture to properties and commercial developments. Agricultural policy initiatives have been changing, with a greater focus on increasing production towards more commercial goals, including diversifying agricultural sectors to generate a

larger national income through the agriculture sector. Inclusive rural transformation is important in addressing these changing rural conditions, supporting sustainable development, and redefining the nature of rurality to support rural communities.

Rural transformation was defined by Berdegué et al. (2013) as a "process of comprehensive societal change whereby rural societies diversify their economies and reduce their reliance on agriculture; become dependent on distant places to trade and acquire goods and services; move from dispersed villages to towns and small and medium cities; and become culturally more similar to large urban agglomerations". Additionally, Borodina and Prokopa (2019) indicated that agricultural growth cannot be a goal in itself or the main source of currency returns in a society oriented towards rural development. Consequently, rural transformation results in the blurring of the social, cultural, and economic differences between rural and urban areas. This has resulted in shifting population dynamics, rural identities, and agricultural practices.

Rural transformation not only involves rising agricultural productivity but also increased commercialisation, diversification of production patterns, better rural coverage, and access to rural services and infrastructure (Benfica 2019). Moreover, Berdegué et al. (2013) also argued that the development of infrastructure, such as roads and telecommunication services, are essential drivers for rural transformation. Therefore, transformation is possible through various types of services, each of which requires information as a major input. People in rural areas, whether literate or not, require access to information services that will help them become more capable and productive in their daily operations, discharge their social and political obligations efficiently and become better-informed citizens (Harande 2009). The development and progress of any rural area depends on its ability to acquire, produce, access and use information through effective communication, with the latter being a key aspect of inclusive rural development and inclusive rural transformation.

Inclusive rural transformation is fundamental to the achievement of sustainable and resilient rural communities due to its positive impact on the reduction of poverty and hunger (Wang et al. 2023). The existing rural–urban divide in areas such as access to infrastructure, energy and economic opportunities delays and hinders the progress of socio-economic development (IFAD 2016). As a result, inclusive rural transformation is necessary to ensure that no one is left behind in achieving the Sustainable Development Goals (SDGs) defined by the United Nations. Inclusive rural transformation involves a range of interconnected actors, including government (national, regional and local), non-governmental organisations, the private sector, research institutions, communities, and local organisations. Inclusive rural transformation requires access to information and communication in order to benefit farmers and rural communities. The Food and Agriculture Organisation (FAO) (FAO 2014) notes that,

> *"[S]upporting dialogic communication and knowledge-sharing processes is a powerful means of helping farmer organizations, indigenous peoples, rural communities and civil society organizations to make their voices heard and be part of the development agenda. The challenge is to promote institutional and policy frameworks that will allow equitable access to information and communication services in rural areas and ensure the active participation of smallholder farmers. Communication for development policies can translate farmers' right to communication into fair and transparent regulatory frameworks that enable the rural population to access information and manage communication processes".*

While this articulates the role of communication for smallholder farmers to achieve inclusive rural transformation, these same principles need to be applied to farms regardless of size. The key is inclusive, so the perspectives of farmers and rural communities are integrated into rural development processes.

Communication, in relation to development was initially defined by Quebral (1971) as the "art and science of human communication applied to the speedy transformation of a country and the mass of its people from poverty to a dynamic state of economic growth that makes possible greater social equality and the larger fulfilment of the human potential". A number of definitions of communication emerged (FAO 1984; The World

Bank 2006), which were applied and interpreted by organisations in different ways, with the term eventually referred to as "*communication for development and social change*". Despite its changing definitions and interpretations, Servaes (2007) identified some underlying common values and later defined communication for development and social change as "the nurturing of knowledge aimed at creating a consensus for action that takes into account the interests, needs and capacities of all concerned", concluding that it is a social process with its ultimate objective being sustainable development and change at distinct levels of society. Communication has long been recognised as a driver for innovation and social change in rural development across the world (FAO 2017). It was previously considered a straight line from the developed "source" to the underdeveloped "receiver", a characteristic of the top-down communication model consisting of one-way persuasion (Servaes 2020). However, in the 1980s and 1990s, participation became popular in the development sector, and participatory communication established itself as one of the subdisciplines of communication science (Lie and Servaes 2015). Participatory communication is related to the multiplicity paradigm of development, which focuses on the people as controlling actors and participants for development, emphasising bottom-up communication, as well as the right to communication (Servaes 2007). Agricultural extension is another subdiscipline of communication, both a contributor to communication for development thinking and a disciplinary and practical sibling. It started with concepts of communication, such as diffusion of innovations and knowledge and technology transfer to farmers. As a result, the extension was perceived as a linear knowledge transfer. This approach was reformed by the FAO by promoting communication as the focal and crucial factor for decision-making in development interventions (Balit and Acunzo 2020). The change was also influenced by challenges to dominant linear thinking about rural development, challenging modernist assumptions about how change should take place, through what mechanisms, and to what ends.

Challenging these linear assumptions about communication prompted new conceptualisations of rural change that better fit more systems-driven thinking about the extension, such as agricultural knowledge and information systems (AKIS), innovation systems and farmer field schools (FFS). More recently, rural communication encompasses a broader and more holistic conceptualisation of integrated rural development, including agricultural extension, but with a much wider scope, including education, health, political and sociocultural issues that are not directly related to agriculture.

Communication approaches have gradually shifted from being focused on technology to being focused on people, which was emphasised by the FAO's *Rural Communication Services* (RCS) (FAO 2017). The participation of rural stakeholders and actors is essential to the entire development process and should be embedded at all stages of development projects through dialogue and multi-stakeholder awareness raising, as well as the co-creation and operation of communication systems and processes. This evolution of communication for development has been driven by praxis, which Freire (1972) articulates as "reflection and action upon the world to transform it". For Freire, praxis was part of five characteristics of effective dialogue, which included communication between equals, problem posing, conscientisation and "human values" such as love, humility, faith, hope and critical thinking, as he believed that entering dialogue presupposed equality among participants and that there must be mutual respect and trust for sustainable transformation (Musakophas and Polnigongit 2017). This understanding of dialogue is evident in the principles of communication for development described by Balit and Acunzo (2020) which emphasise two-way communication, with the communicators acting as mediators to facilitate rural community discussion, building on existing resources, enhancing local capacities, and strengthening rural communication services and processes.

Environmental communication has recently been dominated by the issue of climate change and is now often interchangeably referred to as climate change communication, which focuses on climate risks and public engagement with issues of environmental change. Although climate change communication has been growing since the late 1990s, green-

house gas (GHG) emissions continue to increase globally, with societies more vulnerable to variabilities in climate and the dynamic nature of environmental change. All of this challenges the effectiveness of current communication efforts and the ability of their audiences to implement changes in response to this communication (Nerlich et al. 2010). Globally, many people consider climate change risks as "virtual", depending on the level of climate awareness and economic status (Adams 2007), which poses a challenge to communication for development. Nerlich et al. (2010) determined that climate change communication involves social and cognitive psychology on the one hand, which studies attitudes to risk, strategies that can be used to trigger behaviour change, mental barriers, and predispositions, and on the other hand, communication studies and social studies of science, which investigate the interactions between scientists, media, policymakers, and stakeholders. Development initiatives in rural areas targeting climate change resilience and adaptation are on the rise, including increasing perspectives such as community-based adaptation (CBA). Reid (2009) defined community-based adaptation as a "community-led process, based on communities' priorities, needs and knowledge and capacities, which should empower the people to plan for and cope with the impacts of climate change". This perspective on environmental change shifts the conversation from simple awareness raising into supporting community-driven action, much in line with Freire's praxis.

Rural development has always been driven by changes in agricultural systems and livelihoods. However, hunger, marginalisation, poverty, and malnutrition are still on the rise in rural areas, which suggests that the current rural development is far from inclusive (Gillespie et al. 2017). Inclusive development was defined by the United States Agency for International Development (USAID) as an "equitable development approach built on the understanding that every individual and community, of all diverse identities and experiences, is instrumental in the transformation of their societies" (USAID 2023). Consequently, inclusive rural development was defined by Borodina and Prokopa (2019) as development resulting in guaranteeing and creating conditions for people in rural areas to use land and other local resources in an economic activity; an adequate distribution of economic growth results in agriculture and other sectors of the rural economy; participation in social and public life to unify communities and protect human rights.

Ruben and Beekman (2019) concluded that inclusive rural development should aim at reaching nutrition security, fostering agricultural productivity and creating people value addition. The entire rural population must have equitable opportunities for access to public services such as education and health (Sachs 2004). Therefore, inclusive rural development not only contributes to poverty alleviation and agricultural improvement but also to overcoming social, political, and economic exclusion of people living in rural areas. Environmental and climate change exacerbate challenges to inclusive rural development, as the effects of environmental change are unequally distributed, with the most severe effects impacting those with the least capacity to adapt and address them.

Rural development is successful when it relies on communities, i.e., when positive changes in rural areas are made by rural communities based on their experiences (World Economic Forum 2018). This was supported by Poyo (2021), who stated that "the practice of inclusive rural development involves investing in the people and places for which the challenges of their rural location are compounded by disadvantages that stem from how they have been impacted by systemic biases and blatant discrimination." To identify feasible strategies for inclusive rural development, Ruben and Beekman (2019) emphasised the importance of understanding major transitions in production, demography, household expenditure and consumption, household assets and markets to generate improved food systems. Theophilus (2021) suggested promoting the participation of rural youth and women in social, political, and economic processes as a strategy to achieve inclusive rural development. Addressing environmental and climate change processes from the perspective of community-based adaptation also needs to keep these interconnected needs and issues at the heart of processes and strategies for change.

This study explores the current interpretation of inclusive rural development in light of environmental change and how this can affect revisiting the premises of communication for development. It does this through a desk-based analysis of case studies from Malawi, Ukraine, and the Philippines. It asks the following questions: What is the rural communication landscape? What are the current environmental issues? What is communication doing to address these challenges? Where are the gaps in theory and practice? By reviewing the different issues and opportunities in these contrasting countries, this study explores the nexus of environmental change and rural communication, asking how it can be improved to support inclusive rural communication given these climate and environmental dynamics. The results of this study will interrogate thinking in communication for development, considering how it can support responses to environmental change in rural contexts.

2. Conceptual Framework

2.1. Conceptualizing Communication for Development and Inclusive Rural Development

This research investigates the context of communication for development and environmental change in Malawi, Ukraine, and the Philippines case studies. To achieve this, we first present conceptual frameworks to understand communication for development and inclusive rural development.

2.1.1. Conceptual Framework for Communication for Development

To better analyse the communication for development context in each case study, the principles and enabling factors of C4D were defined, as shown in Figure 1. For this paper, these principles of communication for development come from a definition articulated by Fraser and Restrepo-Estrada (1998): communication for development is the use of communication processes, techniques, and media to help people create awareness of their situation, create options for change, resolve conflicts, work towards consensus, plan actions for change, acquire knowledge and skills, and improve the effectiveness of institutions. This is consistent with the definition of communication for development adopted by the World Congress on Communication for Development in 2007: "Communication for Development is a social process based on dialogue using a broad range of tools and methods. It also seeks change at different levels, including listening, building trust, sharing knowledge and skills, building policies, debating, and learning for sustained and meaningful change. It is not public relations or corporate communication" (The World Bank 2006). Enabling factors are conditions that support communication for development. In this paper, these come from an articulation of rural communication conditions outlined in the rural communication services framework (FAO 2024a, 2024b). Together, this framework highlights what communication for development aims to achieve and the enabling conditions that promote the successful implementation of these principles. For this paper, these will allow us to analyse the context of communication for development across the three case studies.

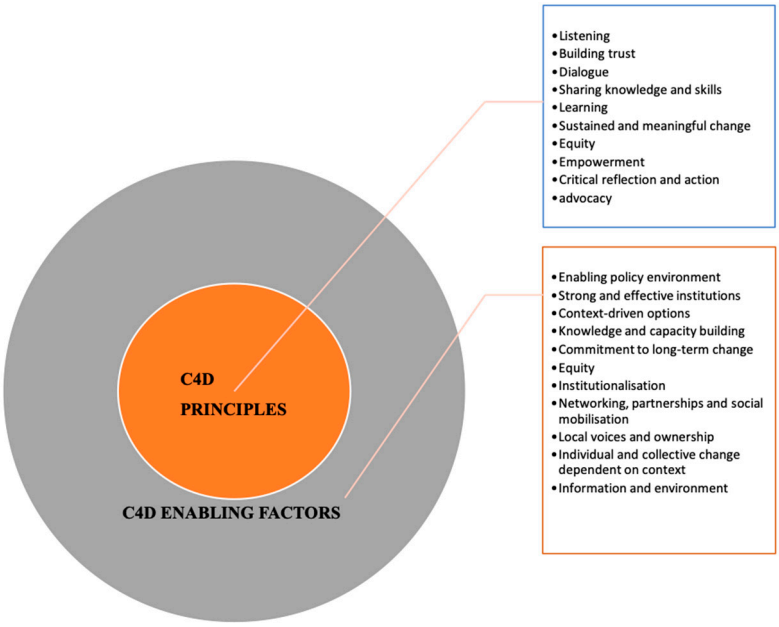

Figure 1. Conceptual framework to analyse principles of C4D and their enabling factors.

2.1.2. Conceptual Framework for Inclusive Rural Development

The main indicators of inclusive rural development include the improvement of integrated agri-food systems, resilience to environmental change, human rights, social equity, food security, and economic growth. The basis of the conceptual framework in Figure 2 was borrowed from the triple helix thesis (Etzkowitz 2003) on university–industry–government relations in innovation and the learning regional model designed by Rutten (Rutten and Boekema 2007). The main components of our design are the rural communities, governance, and communication for development.

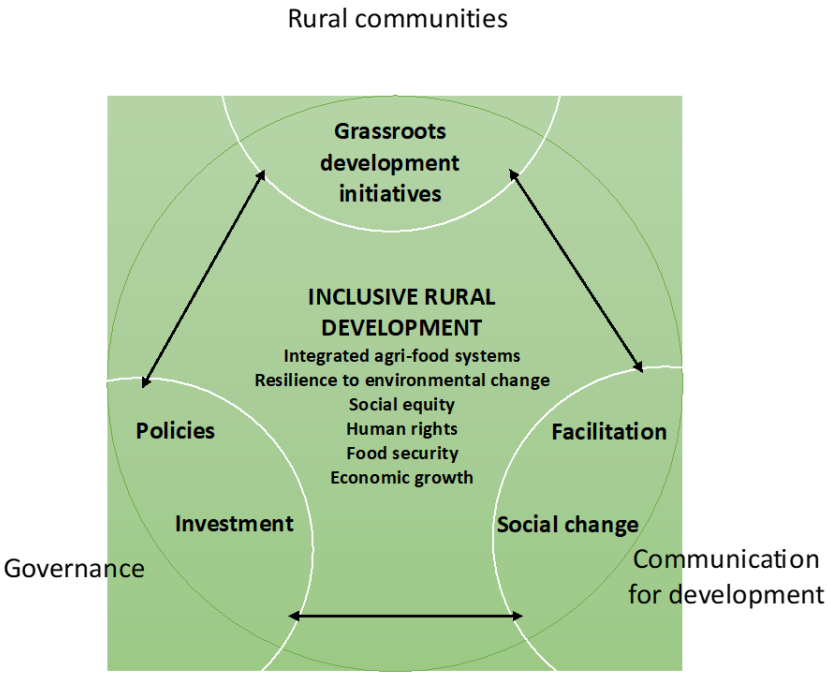

Figure 2. The integrated conceptual framework for inclusive rural development.

The integrated framework, therefore, involves the interaction between the main components, aiming to facilitate effective communication, knowledge sharing, social change,

and the use of local knowledge in grassroots development initiatives, as opposed to the top-down transfer of expert knowledge. This integrated framework was used as a tool to analyse each case study and to investigate the challenges and similarities in communication for inclusive rural development.

2.2. Case Study Analysis

To analyse the context of communication for development and environmental change in Malawi, Ukraine, and the Philippines, a cross-case analysis, based on the case study research defined by Yin (2009), is applied in this study. Each country was treated as a bounded case. Specifically, the multi-case method introduced by Stake (2006)was used to facilitate a comparative analysis of the three countries over the past 25 to 30 years. The conceptual frameworks described in Sections 2.1.1 and 2.1.2 were used to generate conceptual themes to analyse the case studies. Principles of C4D and enabling factors for C4D (Figure 1) were identified (where they existed). These were compared between country case studies. The themes of the integrated framework for inclusive rural communication (Figure 2) were also identified within each country and compared. Environmental change as a cross-cutting theme was analysed across the three case studies. For each case study, the period of observation of rural transformation and communication activities is the last 30 years.

3. Results

3.1. Case Study: Malawi

3.1.1. Introduction

Malawi, an agriculture-based nation in the southern part of the East African Rift Valley, has a population of 20 million, with over 80% being rural and 85% of the population engaged in agriculture (Botha 2023). The rural population relies on small-scale farming, which is significantly affected by environmental changes. Empowerment and access to quality information are crucial for resilience to environmental challenges. However, these facilities are often lacking in rural Malawi, where many vulnerable and marginalized populations live. Technological advancements are changing communication landscapes, presenting opportunities for addressing social and environmental challenges through new communication approaches (CDAC 2022; Malawi Government 2012). Supporting rural communication is essential for addressing environmental sustainability, a key development issue in Malawi.

3.1.2. Rural Communication Landscape in Malawi

Malawi's rural communication context consists of both formal and informal communication systems, which play an important role in supporting the flow and dissemination of information and knowledge among rural populations. The communication landscape in Malawi's rural areas is shaped by a mixture of internally and externally influenced communication approaches, including modern technologies, community-based initiatives, and traditional or discursive practices. TV, radio, and ICT are examples of technology influence, whereas social influence includes community gatherings, informal networks, and institutions. Discursive communication combines mediated and unmediated modes of communication (Gomo 2015).

Radio and interpersonal social modes of communication have traditionally played important roles in community mobilisation and participation in various development initiatives. Radio and traditional forms of communication remain popular among rural populations due to their intimate link to personal and cultural values (Abdulai et al. 2023; Ragasa et al. 2021). However, technological innovation is creating new communication technologies that are altering rural people's access to and distribution of information. According to Abdulai et al. (2023), the fast growth of modern media is diverting attention from traditional communications, which have served as important platforms for cultural production and information dissemination for rural development. As a result, there is an

increase in preference for technologically oriented and modern forms of communication and infrastructure.

In rural Malawi, formal communication structures are part of government-led projects, extension and advisory services, non-governmental organisation (NGO) development programmes, community media services, and educational institutions. Extension services provided by the government through sectors such as agriculture, forestry, fisheries, disaster risk reduction, and overall environmental management practices play an important role in providing public information on development projects and policies to improve rural livelihood. Pluralism in extension service provision has enabled other players, NGOs, to expand their work in rural development (Masangano and Mthinda 2012; Masambuka-Kanchewa et al. 2020). Malawi's informal rural communication structures are mostly interpersonal and heavily influenced by traditional communication techniques, social ties, and social networks. Folk media such as dance, drama, folktales, riddles, songs, and proverbs, as well as communication structures such as village gatherings, religious institutions, community leaders, and word-of-mouth, continue to be used in most rural settings in Malawi (Gomo 2015; Zeleza Manda 2015).

3.1.3. Government's Thrust to Enhancing Rural Communication and Agricultural Information

In Malawi, sectors dealing with specific issues such as agriculture, forestry, fisheries, disaster risk reduction, and overall environmental management practices have their own established official communication and community engagement structures that fall under the category of rural communication practice. These frameworks promote community engagement and inclusion in decision-making on critical problems affecting their livelihoods. For example, in agriculture, the government has structures at the national, district, village, and community levels.

In terms of rural communication, the District Agricultural Extension Service Systems (DAESS) uses decentralised platforms to engage stakeholders at the district, area, and village levels. These institutions include village agriculture committees (VACs), area stakeholder panels (ASPs) comprised of multiple VACs, and district stakeholder panels. All these platforms help to identify significant community needs and hold service providers accountable for meeting them (Freer et al. 2018; Government of Malawi 2000). Participatory extension systems and approaches, such as farmer field schools (FFS), farmer extension facilitators (FEFs), and farmer-to-farmer extension (F2FE), are increasingly emerging as formalised mechanisms for communication and knowledge exchange (Amadu 2022; Fisher et al. 2018). In forestry and fisheries, village platforms such as Community-based Natural Resources Management Committees (CBNRM) and Beach Village Committees (BVCs) facilitate community engagement, communication, and participation, whereas civil protection committees (CPCs) at district, village, and community levels convey disaster-related issues (Haambiya et al. 2020; Zulu 2008).

3.1.4. Collaboration towards Inclusive Rural Communication

The spread of information communication technology (ICT)-based platforms also influences the rural communication landscape. Radio is a popular and easily available ICT platform in rural areas. Malawi has seen an expansion in community media since the dawn of democracy in the early 1990s, with the establishment of community radio stations. Currently, the country has around 30 community radios spread across its 28 districts, which serve as important venues for discussing local issues and sharing information. Audio-visual tools such as participatory videos have also been used to engage rural people and their local perspectives on development issues like climate risk (Padgham et al. 2013).

Telecentres, internet-based technologies, and mobile platforms such as mobile phones that use short-text messaging, mobile instant messaging (MIM) like WhatsApp, and social media such as Facebook as social learning platforms are all examples of ICT facilities. Audio-visual products, such as participatory video, function as both platforms and tools

for information dissemination and knowledge sharing. In Nkhota-kota, a district in central Malawi, women farmers utilised a WhatsApp forum shared with extension workers to seek agricultural advice by posting pictures and questions (Banda et al. 2016). The platform also allows community members to create and consume content by sharing their farming experience and knowledge with other farmers.

3.1.5. Understanding the Environmental and Climate Change Issues in Malawi

Malawi is facing enormous challenges from environmental and climatic change, which are impacting the country's ecosystems, economy, and livelihoods. Over the last seven years, Malawi has faced over 20 significant flooding incidents and seven droughts, resulting in massive losses to people's livelihoods and the country's economy. For example, the country's 2015 floods and 2016 drought caused economic losses of $335 million and $365 million, respectively. The drought rendered roughly 7 million people food insecure (Commission 2021). Women suffer more than men because of unequal opportunities and adaptation support (Global Environmental Facility 2019).

Human actions, particularly the growing population in Malawi, are identified as a significant factor contributing to deforestation and environmental degradation. The population growth rate of 2.8% per year in Malawi is leading to the loss of large amounts of forest due to human demand for natural resources. This is evidenced by the annual deforestation rate of 2.4%, resulting in the loss of 33,000 hectares of forests each year (Government of Malawi 2014; Ngwira and Watanabe 2019). Another concern is the dwindling fish populations in most major water bodies due to changing water flow and levels, pollution, and overfishing. In Malawi, fish accounts for around 40% of the total protein supply. The continuous decline and rising cost of limited fish populations jeopardise Malawi's nutritional diversification in animal protein (Global Environmental Facility 2019). Other challenges include land and river pollution from unsustainable farming and poor domestic and industrial waste management. Climate change also increases the number of invasive alien species, such as the fall armyworm, which is devastating to agricultural productivity, especially maize, Malawi's major crop.

3.1.6. Communication as a Driver to Address Climate Change

Rural communication in Malawi is playing a crucial role in addressing environmental issues by raising awareness, facilitating knowledge sharing, educating communities, and promoting the adoption of sustainable environmental management practices. Community media, such as community radio, spreads environmental information. Chanco Community Radio in eastern Malawi dedicates 60% of its programming to climate change and natural resource management issues for communities in the Lake Chilwa Basin, which suffers water level issues owing to climate variability. The radio station airs environmental programs such as *Zaulimi* (agriculture), *Imvani za Kumudzi* (The Village Voice), and *Ulimi ndi Nyengo* (weather and farming). Community radios and radio listening clubs (RLCs) promote environmental education (Chavinda 2023a; Masina 2023). Chavinda (2023b) found that community radio and RLCs allow "communities and marginalised groups to share knowledge and experiences about climate change."

Another ICT-based tool is participatory video (PV), which some communities use in collaboration with NGOs to share their local climate change adaptation experiences. Baumhardt et al. (2009) investigated how individuals in one village in the district of Salima used PV to propagate community-based climate change adaption solutions. Based on community members' own experiences shared through PV with four neighbouring villages, the study indicated that participatory videos were a successful way to spread knowledge on climate change adaptation. Farmer extension facilitations (FEFs) are participatory extension service platforms that demonstrate how communication structures may tackle environmental and climate change concerns.

3.1.7. Gaps in Inclusive Rural Communication

Malawi's present rural communication landscape has some shortcomings. First, communication services are selective in addressing environmental challenges. According to the literature, most services prioritise trending development issues such as climate change and food sustainability over other equally important issues such as water and land pollution. Another barrier to the efficiency of rural communication is a lack of financial resources to assist the process of inclusive production of information and content on crucial issues. Because of a lack of funds to support participatory approaches to communication and development, most early warning systems and information on climate-related disasters still lack elements of people-centeredness and the incorporation of local knowledge and perspectives associated with climate risks (Calvel et al. 2020).

This demonstrates that some rural communications services continue to use a top-down approach to communication, with little involvement from affected communities. The institutionalisation of rural communication services via policy frameworks is also problematic. Some policies addressing crucial developmental concerns, such as disaster risk reduction (DRR), do not recognise communication (particularly participatory communication) as a vital tool in DRR initiatives. The significance of communication is rarely acknowledged in policy frameworks such as the Malawi Disaster Risk Reduction (DRR) Act of 1991 (Chirwa 2023).

Another problem is the digital gap, which persists due to a shortage of electricity, ICT infrastructure, and extra income to cover the high cost of internet services. The use of internet-based apps such as WhatsApp and Facebook are only prominent among young people compared to adults, and inequality in terms of phone ownership leaves many women out when it comes to access to information through phones because men are the majority owners who control the gadgets and the choice of content (Messenger 2018; Steinfield et al. 2015).

The discrepancies extend beyond formal communication structures. Manyozo (2018) notes that some informal communication channels may reinforce existing social inequalities by marginalising specific voices and perspectives depending on gender, race, sexuality, or class. Some settings, such as community gatherings, are frequently dominated by influential voices from community leaders and men at the expense of women and lesser-known members of society.

3.2. Case Study: Ukraine

3.2.1. Introduction

Effective local government is fundamental for successful community development. This has been repeatedly confirmed within the framework of decentralisation reforms in Ukraine through the rapid development of individual settlements and communities. However, the full-scale war has affected all areas of life in Ukraine. It has exacerbated known problems, revealed others, and delayed the solutions of others. As a result, it is undermining community development across the country.

One of the weaknesses of the local government in Ukraine is the low levels of information and communication technologies employed for basic public services. Local government systems must develop and modernise according to current challenges, considering the disruptions of communications during the war. Local governments were not ready for an urgent restructuring of their information and communication technologies in light of Russia's military aggression against Ukraine. As a result, the war has shed light on the fact that it is the responsibility of local governments and officials to ensure the basis for financial independence, efficient communication and constant communication between the authorities and the community (Проніна and Семенко 2023). For Ukraine, strengthening digital and technological capacity is crucial to its future sustainability through strengthening national security and accelerating European integration as the main vector of Ukraine's recovery (Kitsoft 2022).

Today, the policy of the Ukrainian government is aimed at developing its digital economy and society. One of the areas of digital development is the reform of local government bodies in terms of digitalisation. Local government officials should be more motivated to learn about the new conditions that have arisen during this period of military aggression through the introduction of modern management skills to their activities. However, there is a lack of a systematic vision of the potential results of such development processes. Moreover, even during the pre-war period, officials, local council deputies and representatives of civil society institutions did not prioritise forming a management culture and an appropriate level of professional competence in this field.

3.2.2. Key Issues in Rural Development

Nearly 30 years of agrarian transformations have not brought about the expected increase in prosperity for rural communities. Today, rural areas are in a vulnerable state, with the weakening state of natural resources and the environment. Social infrastructure, livelihoods, and social services such as medicine, culture, and preschool education are all deteriorating. Human potential is decreasing while unemployment and poverty are flourishing, all of which stimulate labour migration and the departure of young people from the countryside. Россоха and Плотнікова (2018) defined the main tasks of rural development as including the implementation of economic, environmental, and social functions, the rational use of natural resource potential, and the compliance with principles of scientific land management. This is more difficult given the conditions of rural change at present.

The level of wages in agriculture remains one of the lowest among other sectors, with wages being 69% compared to the average wage in Ukraine. At the same time, only 661.4 thousand people are officially employed in agriculture, forestry, and fishing, with a high prevalence of personal small-scale farms. However, the share of incomes from personal, small-scale farms is constantly decreasing—23% of rural households have per capita monetary incomes lower than the standard level. The poverty rate is 1.7 times higher among rural populations than in cities, with 39% being poor among rural households, compared to 19% in urban households (Костюченко 2017). The majority of agricultural, forestry, fishing, pasture and aquaculture production is family-owned and based on family labour. There are approximately 4.2 million family-owned small farms, having an average land area of 1.5 hectares. Family-based farms are the places of employment for 80% of people employed in agriculture (Міністерство аграрної політики та продовольства України 2015).

3.2.3. Framing Communication in Ukraine

In the context of the ongoing conflict, for two years, Ukrainian society has relied on news, particularly information about air alerts, changes in the situation on the war front and politics. However, over the past few years, not only have news consumption habits changed, but so has the information space itself. Ukraine is in an active phase of information warfare, manifesting as the spread of information and psychological special operations, disinformation campaigns, and automated accounts to influence public opinion. Ukrainian authorities are trying to address these challenges but are resorting to the monopolisation of the information space, which causes distrust in Ukrainian society. As a result, understanding the specifics of media consumption by different audiences of Ukrainian society is important in reducing disinformation.

Social networks remain the most popular source of information for Ukrainians, as chosen by 77.9% of respondents. Television came in second with 62.5%, followed by the Internet (excluding social networks) with 57.7%. Radio and print media accounted for 33.7% and 17.8%, respectively, but have become more popular compared to last year. Золотарьова and Снопок (2023) stated that the "United News" marathon is watched daily by 60% of television news consumers, with 84% of the consumers trusting it. Google Services and Ukr.net are the most popular Internet sources of information, followed by TSN. Among radio stations, music and entertainment stations are most utilised by the people who then

listen to the news in between music sessions, with the leader being "Ukrainian Radio", which is part of the National Public Broadcasting Company of Ukraine (Закусило 2020).

3.2.4. Rural Communication Landscape in Ukraine

Communication with communities has been facilitated by the Ukrainian Crisis Media Centre as a communication partner of the USAID Program—Decentralisation Offering Better Results and Efficiency (DOBRE), with one hundred communities receiving six years of consultation support. Research conducted by the International Republican Institute in collaboration with the Sociological Group "Rating" showed that the level of trust in local government heads increases annually and stands at 59%, specifically due to the high quality of local services and satisfaction with the actions of local authorities.

At the local level, information policy issues are regulated by several types of legislature, including the Statute of amalgamated territorial communities, the Regulations of the council, the executive committee, individual decisions of the council, its executive committee, and decisions of the mayor. According to the law of Ukraine on "Local self-government in Ukraine", local self-government bodies issue regulatory legal acts. At the same time, councils and their executive committees make decisions, and rural and city mayors issue the orders. At all stages of the creation and duration of the official acts of local self-government—from their adoption to cancellation—an informational component is present (Куропась 2020).

3.2.5. Frameworks, Structures and Policies for Rural Communication and Agricultural Information

According to the constitution of Ukraine on local government, information, the procedure for coverage of state authority activities, access to public information and reports on local government bodies by mass media, the necessary authorities are obliged to ensure strict adherence to the principles of transparency, providing citizens access to information, which is realised through constant constructive dialogue with the public. The presence of local government bodies in the information space is ensured on the one hand by ordering and placing relevant materials in printed media, on the air of television and radio programs, and in the online space on contractual terms, and on the other hand, by independently creating and distributing content through social networks. In rural areas where there is limited access to the internet, informational bulletins in newspapers are an effective means of communication. Electronically, the existence of an official website (https://old.loda.gov.ua, accessed on 12 June 2024) is a communication basis connecting the government bodies and the community.

The legal framework for the implementation of agricultural advisory activities in Ukraine is defined by the Law of Ukraine on Agricultural Advisory Services, which states that agricultural advisory services are "a set of actions aimed at meeting the needs of individual peasant and farm households, economic entities, other agricultural enterprises of all forms of ownership and management, as well as the rural population in increasing knowledge levels and improving practical skills for profitable farm management" (Офіційний вебпортал парламенту України 2012). Advisory services have played a significant role in ensuring the processes of land privatisation and denationalisation, the establishment of farming, and the reform of former collective farms and state farms into market organisational formations. However, the network of agricultural advisory services is still developing, currently covering less than 5% of agricultural producers (nubip 2013). All agricultural advisory services, advisors, and experts are unified in the National Association of Agricultural Advisory Services of Ukraine (NAASU), established on 11 March 2023. Корінець and Мітягін (2014) stated that the purpose of NAASU's activities was to contribute to improving the welfare of the rural population and the development of rural areas through increasing the level of knowledge and improving the practical skills of the rural population and agricultural producers, as well as satisfying and protecting the social, economic, as well as other common interests of association members.

3.2.6. Towards Inclusive Rural Communication

Implementing decentralisation policies aimed at transferring power to local government bodies and expanding the rights of rural communities has not yet produced the expected positive impact. Moreover, residents of rural areas are convinced that the new government initiative is a tool for creating political fiefdoms and concentrating power in the hands of the same individuals. The lack of a favourable economic climate leads to the stagnation of development in many local-level institutions, which, in turn, hinders the formation and development of rural civil society. There is an urgent need for effective state intervention aimed at promoting the development of local community institutions, such as local agri-food chains, direct sales of local products, networks of farmer cooperative associations, and associations of small landowners, as such organisations would serve as powerful catalysts for rural economic development.

Valeriy Fishchuk, the vice president of the Innovative Development of Ukraine Association, stated that the most effective way to bring urban opportunities to rural areas is to connect rural areas to the Internet (Дубровик-Рохова 2018). Population distribution by Internet access in rural areas indicates that 6.2 million people (47.8% of the total population) used Internet services over the past 12 months (Осипова 2019). The main problem with internet usage in rural areas is the limitation in technical capabilities for connecting sparsely populated areas and developing digital infrastructure. The overall provision of quality high-speed internet throughout the country also remains unsatisfactory. In the global internet speed ranking, the Speedtest Global Index in January 2020, Ukraine ranked 84th out of 140 countries for mobile internet speed (Бородіна 2020).

3.2.7. Understanding Environmental and Climate Change Issues in the Ukraine

Climate change poses serious threats to the balanced development of Ukraine due to the high carbon intensity of the economy, increasing frequency of extreme weather events, and associated risks to public health, livelihoods, natural ecosystems, and sectors of the economy, which are expected to intensify soon. Ukraine is part of the United Nations Framework Convention on Climate Change and its Kyoto Protocol and is committed to fulfilling a set of obligations under these international agreements (Голова Верховної Ради України 1996).

The Ukrainian government was among the first to ratify the Paris Agreement. In 2021, it submitted an updated nationally determined contribution to reduce greenhouse gas emissions by 65% by 2030 compared to 1990 levels. It is important to consider that since the Russian Federation invaded Ukraine on 24 February 2022, the country has experienced widespread hostilities resulting in extensive infrastructure damage, casualties, and population displacement. War, combined with the COVID-19 pandemic, negatively affects the country's readiness and adaptation to climate change. Additionally, the environmental consequences of the current war in Ukraine, due to military actions near nuclear reactors, burial sites of radioactive waste, oil refineries, and chemical plants, continue to increase environmental risks. Massive damage to civilian infrastructure has also undermined the adaptive capacities necessary to overcome the threat posed by climate change. This will consequently increase the risk of displacement due to natural disasters, increase the threat of environmental shocks and stressors for migrants in vulnerable situations, and force some people to remain in environmentally hazardous areas (Голова Верховної Ради України 1996).

3.2.8. Communication as a Tool to Address Climate Change

The issue of climate communication has become increasingly relevant, involving raising awareness among the general public about the seriousness of the problem, its causes, consequences, and ways to overcome climate challenges, as well as promoting the involvement of all stakeholders in actions to combat climate change. The fourth theory of climate change asserts that the greatest impact on climate is caused by human activities unrelated to greenhouse gas emissions but rather by transforming the Earth's surface through deforestation, desertification, and urbanisation.

Based on the concepts of globalism, new humanism, sustainable development, climate justice, and climate theory, in Ukraine, we propose to consider global climate change from the perspective of "climate humanism"—a concept that should combine two key ideas: the necessity of addressing global climate issues and the importance of human participation in this process to protect and promote human well-being in the context of a changing climate environment (Шевченко 2023). This is consistent with communication for development thinking, putting the focus on local adaptation and resilience to environmental change.

3.3. Case Study: Philippines

3.3.1. Introduction

The Philippines, as a developing country, has been argued to follow the traditional path regarding the implementation and access to ICT (Information and Communication Technology) for Development (Panganiban 2019) due to its centrally driven, top-down approach, which often lacks long-term perspective and sustainability concerning assessing its impact and learning mechanisms. It resulted in poor agricultural performance, particularly in conducting research through agricultural and rural extension programs focusing on training, skills development, and support in non-farm production-based activities (Custodio and Sombilla 2023).

Moreover, since there is a gap in digital transformation, according to Lapuz (2023), community residents must participate in bridging this gap and enabling the co-production of shared interest in a family-centric approach. Based on studies from Panganiban (2019), most Filipino farmers need to learn how to utilise computers. Additionally, farmers have limited access to the internet and therefore seek help from their children to facilitate information and knowledge transfer, which is aligned with Manalo and van de Fliert (2011) suggestion that the youth can be considered as "infomediaries" in ICT utilisation.

3.3.2. Key Issues in Rural Development

In a rural transformation study by Custodio and Sombilla (2023), the Philippines has not been experiencing any significant transformation for more than three decades, with only three out of the 16 regions except for Metropolitan Manilla having a relatively higher rural transformation, namely, Calabarzon, Central Luzon, and the Davao Region. The proportion of the underprivileged in Philippine rural communities has reached 25.7% compared to 11.6% in the urban areas, and there were 2.7 million farmers and fisherfolks (30% of the population) who lived below the national poverty threshold as of 2022 (Authority 2023). This resulted in a continuous shift towards participating in highly industrialised sectors of the economy between 2010 and 2020 (Ali and Son 2007), wherein the economy improved, and employment opportunities in the urban areas increased, encouraging rural–urban migration. The same study highlighted that occupational opportunities for the male population tended to be broader than those for the female population.

3.3.3. Framing Communication Access in the Philippines

There are several forms of media in the Philippines which enable access to information. According to Evans (2016), as of 2013, there were 105 daily newspapers, 104 magazines, and more than a hundred local commercial radio and television stations. According to a study by Cruz et al. (2016), radio was essential to reach, inform, and engage in Philippine rural communities. However, the broader perspective of agricultural information needs to be further explained due to media practitioners and broadcasters' limited skills and technical knowledge. Based on the same study, as of 2012, 85% of Philippine households had radio access, while 60% had access to television, which is particular to the rural communities, especially those that do not have stable access to electricity. Hence, the use of radio, which is perceived as handy, portable, and affordable, tends to have more advantages than its traditional media counterparts, such as television and newspapers (Cruz et al. 2016). Mobile phones are also being used to explain organic agriculture technology (Declaro-Ruedas 2019). This was supported by Galeon et al. (2019) with farmers utilising mobile

phones to communicate, access, and share information through text messaging, the most practical and highly available technology to share knowledge.

However, according to Panganiban (2019), in-person communication strategies remain a significant part of the agricultural extension services in almost half of the municipalities in the country. Through the establishment of the Farmers Information and Technology Services (FITS) Centres, which aim at bridging the gap between information and technology, farmers and other stakeholders are provided with fast and easy access to information and technology services in agriculture, fisheries, forestry, and natural resources (Dela Cruz 2022). These centres provide physical access to the Internet and information, education, and communication (IEC) materials through e-learning modules and receive training support from agricultural extension workers (Panganiban 2019). FITS centres are established in key municipalities by the Department of Agriculture-Agricultural Training Institute, which they would eventually turn over to the specific municipal agricultural offices once they can utilise the centre to assist their stakeholders.

3.3.4. Rural Communication Landscape in the Philippines

The rural communities' access to communication modalities varies depending on the ability to access various forms of communication. However, among these forms of communication, addressing the issue of accessing technology-mediated communication modality is perceived as more of a secondary issue since the country has a more significant issue concerning the need to address basic needs such as food, clothing, and shelter (Dela Pena-Bandalaria 2007; Panganiban 2019).

Therefore, the Philippines' primary source of information lies in their family-centric approach as a mechanism for social empowerment since, in the digital world, commonalities in the function and responsibilities make individuals more open to networking. According to Cruz et al. (2016), 97% of rural households rely on radio, the most pervasive medium of mass communication in the Philippines, particularly at the grassroots level. Moreover, as the reach of the Internet broadens and now includes radio applications, it also broadens the reach through integration with television broadcasts, such as the concept of podcasts and Teleradio. Declaro-Ruedas (2019) suggested enhancing agricultural extension workers' skills in delivering key messages through different extension modalities that would reach a broader audience.

3.3.5. Government's Thrust to Enhancing Rural Communication and Agricultural Information

The agricultural extension in the Philippines is governed by RA 7160, otherwise known as the Local Government Code of 1991, which decentralised the extension function from one central government that supervises and facilitates extension and training services for farmers, fishers, and other beneficiaries wherein extension and training activities were delegated to the local government units (LGUS) (Declaro-Ruedas 2019). As such, the value of agricultural extension work largely depends on the availability of extension professionals who are qualified, motivated, committed, and responsive to the social, economic, and political environment (Declaro-Ruedas 2019). In line with this, modes of extension activities include training and visit systems and farmers' group meetings, which are perceived as practical tools for technology and knowledge transfer. However, these activities suffer from the risk of unsustainability due to the threat of limited funding allocation.

Furthermore, the establishment of Farmer Field Schools, which started in Southeast Asia, promoted a participatory approach to learning and decision-making by farmers, engaging a farmer-to-farmer approach by combining indigenous and modern technologies (Declaro-Ruedas 2019). However, based on the same study, the devolved extension seems isolated in the context of Agricultural Knowledge and Information Systems (AKIS) due to a very weak linkage with national and international agricultural research resulting from the quality of farmers' participation in government programs. According to Panganiban (2019), social networking platforms were also utilised by the agriculture department and

attached agencies as alternative dissemination channels. Facebook is used to share recent news about activities, post and link announcements, broadcast essential activities such as training and seminars, or even report emergencies not limited to natural disasters and crop pest damage. Moreover, social media channels are also utilised to obtain feedback from the public and communicate their concerns to the government.

3.3.6. Collaborations towards Inclusive Rural Communication

Non-government organisations and private entities also initiate ICT systems, particularly Knowledge Sharing Systems (KSS), comprising social media, websites, mobile apps, digital libraries, and radio programs, to address relevant issues (Galeon et al. 2019). A study by Paderanga (2011) cited that the existence of the private sector was tremendously skewed as large enterprises comprised only a small unit of the economy compared to micro, small, and medium enterprises.

Moreover, to ensure connectivity, the telecommunications industry is vital to the country's economy. However, the need for telecommunications in the country and some degree of competition in the industry, such as penetration of telephone lines, was low at 4.48 persons per 100 population. In comparison, internet utilisation stands at 6.03 persons. Meanwhile, the number of mobile subscribers per 100 people is 58.88 due to the preference for nonvoice services, especially text messaging. As the study by Librero (1999)argued, most telecommunications firms could not meet their respective commitments to install lines in rural areas where such services are considered economically impractical. Since telephone companies were assigned areas where they should install their lines, most have been unable to comply with this requirement because of various factors such as lack of electricity, inaccessibility, and peace and order conditions. Moreover, they avoid installing communication lines in areas with low commercial activities, such as rural areas, due to the fewer opportunities to gain capital investments.

3.3.7. Understanding Environmental and Climate Change Issues in the Philippines

Holden (2019) cited the Philippines as one of the most vulnerable countries in the world to climate change. The same study argued that environmental degradation and unsustainable development practices contribute to the country's vulnerability to climate change. Several factors affect the country's vulnerability, particularly mining-related environmental degradation (Holden and Jacobson 2012). In addition, deforestation also contributes to the immense degradation of the environment in the country, resulting in landslides in deforested lands. Coral reef degradation and mangrove loss have also affected the country's efforts to mitigate the effects of climate change. According to the National Disaster Risk Reduction and Management Council (NDRRMC 2014), after Super Typhoon Haiyan, communities with preserved mangroves survived the severe storm surge experienced in other coastal areas in the country.

Poverty is a significant contributor to climate change, which lessens the population's resilience. The outmigration of people from rural areas towards urban cities due to issues of land ownership affects the ability of the people to cope with the basic needs that are essential to resilience, such as having a decent living wage and provision of housing (Holden 2019; Morin et al. 2016). The population's rapid growth is another factor experienced by specific sectors in the country. As the population density increases, access to resources also increases, affecting the quality and quantity of assistance that the government can provide to the population.

3.3.8. Communication as a Driver to Address Climate Change

According to Friedrich (2020), for specific areas in the Philippines, as with other countries in the Global South, people's access to information about climate change and access to media needs to be more comprehensive. Rural areas depend on media sources through radio, television, the internet, and newspapers to some extent. Moreover, educational institutions provide information through community discussions and tackle it in churches.

Additionally, several policies, laws, and regulations have incorporated natural and environmental hazards and possible consequences, making the Philippines one of the first countries in the world to cite climate change as a legal issue (Friedrich 2020). There is a need to disseminate country-specific knowledge in dealing with climate change. As such, the government was perceived to pre-select and highlight particular knowledge that would address the country's climate change issues.

3.3.9. Way Forward

The case of rural communication and climate change mitigation in the Philippines still has a broad area of knowledge to explore. As Panganiban (2019)suggested, the government needs to bridge the gap in communication within the rural and agricultural areas as evidence regarding ICTs' contribution to development results in challenges. Developing policies utilising the grassroots approach is necessary to encourage stakeholder collaboration and enhance public value.

Regarding effective climate change communication, including local knowledge in knowledge transfer can be an efficient way of studying how to successfully relay information in rural areas (Friedrich 2020). According to Evans (2016), there is a need to conduct qualitative research studies focusing on the differences between nations across the risk or responsibility divide about climate change. Furthermore, studying the relationship of cultural values to news coverage of global issues is a potential area to exploit in communication for development.

4. Discussion

4.1. Rural Transformation

Table 1 presents key themes in relation to rural transformation and rural transformation actors in each of the case studies. Across the three case studies, we can see common types of rural transformation in linking actors across agricultural value chains and in agricultural areas to achieve collective change. Networks of actors and stakeholders in rural transformation increasingly cooperate or engage in dialogue for enhanced environmental sustainability, natural resource management, sustainable energy, and sustainable agriculture. This is recognizing the need for collective work across sectors to achieve sustainability goals. There are also transformations in economic terms, with change taking place through increased networks across value chains, digitisation in agriculture, working across rural value chains to make better use of technology, and greater integration of businesses for economic development. These transformations are driven by a consistent range of actors across the three countries: local, regional, and national governments; non-governmental organisations, including farmer and agribusiness associations; private sector actors; civil society organisations; media entities; and learning institutions, including higher education. These demonstrate the multi-sectoral and multi-actor nature of rural transformation.

Table 1. Rural transformation and rural transformation actors.

	Malawi	The Philippines	Ukraine
Types of rural transformations	• Enhanced community-based forest management practices; • Adoption of sustainable practices for agricultural production; • Improving environmental stewardship through community structures responsible for best practices in environmental management; • Increased adoption of sustainable energy technologies that conserve energy and reduce overreliance on cooking energy from charcoal; • The emergence of environment-related projects in rural communities is addressing environmental issues.	• Multiple stakeholder partnerships in designing and implementing development programmes; • Enhancing the abilities of rural communities in co-creating knowledge, fostering a more sustainable and inclusive development process. • Collaboration between NGOs, private entities towards enhancing ICT-mediated systems	• Globalisation and increased engagement with global economies; • Digitalisation across sectors; • IT technology expansion across rural value chains; • Conglomeration in businesses and enterprises; • Environmentally sustainable agricultural practices are emerging.
Who addresses problems related to inclusive rural transformation	• The government (local, regional, national); • Civil Society Organisations; • International, national, and local NGOs; • Media; • Community members.	• The government (local, regional, national); • Support from other actors (academia, NGOs, and private entities) for a holistic approach to rural transformation.	• The government (local, regional, national); • Agrifood companies and private sector; • Nongovernmental organisations and networks; • United territorial communities.

4.2. Environmental Change

For each country, environmental change and climate change are substantial rural development concerns. All the case study countries have policy mandates for implementing sustainable development agendas. They have different strategies for coordinating these policies, so the cohesiveness of the response differs nationally. It is important to note that while there are differences in the environmental concerns for each country, they differ more in scale than in scope. In each country, issues around water, soil and land degradation, biodiversity loss, deforestation, and air pollution are key environmental challenges. They are also all affected by weather events whose severity has been linked to climate variability and change—increase in temperatures, extreme weather events (like typhoons) and changing rain conditions. Malawi and Ukraine report issues around pollution from industrial and domestic sources, an issue that, while not as dominant in the Philippines, remains relevant, particularly with changing population patterns through urban–rural migration in the country and policy aspirations towards more agricultural production rather than the export of raw materials. Ukraine has the added specificity of the environmental impact of the war, as arable and highly fertile land has been contaminated by the fallout from missiles, terrestrial war, and ammunition contaminants. The environmental impact of this is still being determined, but the nature of the compounds that have leeched into the soil has implications for plant, animal, and human health in addition to the impact on land use for agriculture itself. The nature of the response—the scale, who pays, what tools are available—differs by resources and national priorities. Table 2 presents a summary of the key themes in environmental change from the three case studies.

Table 2. Key themes in environmental change in case study countries.

	Malawi	The Philippines	Ukraine
Key environmental challenges	• Rapid deforestation; • Soil degradation; • Water scarcity; • Climate change; • Biodiversity loss; • Pollution from industrial, agricultural, and domestic sources; • Overpopulation.	• Environmental Degradation; • Unsustainable development practices • Destructive typhoons such as Typhoon Haiyan in the mid-2010s heavily affected the Visayas region. • The increase in temperatures brought about by El Niño in 2024 resulted in the rapid loss of water and electricity supply in several areas of the country.	• Poor quality water; • Air pollution; • Degradation of land resources; • Destruction of forests; • Household waste; • Objects of military activity.

4.3. C4D Principles and Enabling Factors

We can see in each of the cases the continued relevance of communication for development principles in inclusive rural transformation. We can see continued challenges in supporting inclusive rural development where they are lacking. Communication remains at the heart of integrated rural development. When we look at how communication functions in Malawi and the Philippines, there has been a longer history of engagement with communication for development projects and processes. There has been a specific emphasis on communication in integrated community development, and activities at local, regional, and national levels have been designed with these principles in place. Indeed, Malawi and the Philippines are both theoretical drivers of communication for development thinking (i.e., Chris Kamlongera in Malawi and Nora Quebral in the Philippines). They also have substantial practical integration of communication for development in national and local activities. In Ukraine, this has not yet been so explicitly articulated. The nature of the communication activities and roles in transformation, when compared to Malawi and the Philippines, is broadly consistent in scope and intent. Conceptually, there are different histories and levels of engagement with communication for development as a framing mechanism for communication and rural transformation. In Ukraine, this is very new. However, the communication roles and processes are comparable, and institutions for rural transformation are growing in scale and national importance (such as UCAB—the Ukraine Agribusiness Club). Table 3 highlights the key themes in how communication operates and how it contributes to inclusive rural transformation.

Table 3. Key themes in communication and rural transformation.

	Malawi	The Philippines	Ukraine
How communication operates	• Community engagement and participation; • Community media; • Traditional forms of communication such as community drama, storytelling, folk music to relay environmental messages resonant with local context; • Extension services; • Unearthing environmental challenges through media coverage.	• Establishment of farmer field schools and adoption of a family-centric approach to communication for development; • Communication that recognizes the family as a unit of change; • Interaction with transformed rural communities during activities facilitated by the government at the local level.	One-way communication tools: - Dedicated section on the website, a column in newspapers and newsletters; - Announcements and information notices on boards; - Posts on Facebook. Two-way communication tools: • Formal and informal meetings/gatherings; • Formal and informal groups in messengers (Telegram channels, Viber groups, etc.); • Holding events for united territorial communities; • Surveys (organised through questionnaires or through surveys on Facebook, message systems, etc.); • Farmer organisations and associations; • Higher education institutions (secondary and tertiary).
How communication contributes to transformation processes	• Community mobilisation for participation in environmental management practices; • Community empowerment through knowledge acquisition and exchange; • Advocacy for environmental policies, legal frameworks, and sustainable practices; • Resource mobilisation for interventions on environmental issues; • Communication and information dissemination serve as an aid in disaster preparedness and response.	• The intersection between the use of communication media and the facilitation of dialogue between and among the stakeholders, including rural communities themselves; • While there are limitations in providing equal access to basic communication services, these are being addressed through innovative practices by government agencies to bridge the gap in facilitating various government-mandated services.	• Interaction involving feedback between the rural populations and authorities; • Communication between rural actors—within farmer networks, in informal and formal settings.

Communication, remaining at the heart of integrated rural development and rural transformation, is key to listening, building trust, and empowerment for sustained and meaningful change, which are fundamental to creating the networks needed to support farmer resilience. This requires creating relationships and networks between actors to create a communication environment that will contribute contextually relevant solutions for rural communities.

Learning, capacity building and dialogue are also fundamental in capacitating rural communities with technical and analytical skills that can enable them to design programmes, contribute to local development initiatives, and make decisions about their future concerning environmental change.

We can see in the case studies similar challenges and opportunities in the communication environment. While each case study has a different policy environment, each one has a policy context that, in principle, wants to address environmental concerns and has different inhibiting factors for the communication policy environment. For formal communication, this can be how the communication environment and access to information are institutionalized within national, regional, and local government structures. Where there are weak local institutions, there are also information gaps and a weaker policy environment. To improve information and build communication capacity to address environmental change, each case study pointed out the need for greater knowledge and capacity building, networking, partnerships, social mobilisation, and consensus building between institutions. With these weak local structures and the need for improvements in the communication environment, particularly in information access, there remain questions about how much there is local ownership, local voices, and context-based individual and collective change.

4.4. Conceptualizing Inclusive Rural Development

4.4.1. Communication for Development

If we return to our conceptual framework for integrated rural communication, two key themes emerge from the case studies for communication for development: the context of media and communication and rural communication.

Each of the case studies has a diverse communication landscape, with a range of communication tools such as radio, TV, newspapers, and mobile telephony. While different communication preferences exist in each country (i.e., preference for radio in Malawi versus social media in Ukraine), they have robust landscapes. They are also highly regulated media environments: in Ukraine and Malawi, the government has control over communication—therefore, there is a high chance of reporting only what is relevant to the authorities and not necessarily considering the rural community. In the Philippines, the governance of media is restricted, but there is more room for a rural media ecology.

There are national policies around media institutions, but communication concerning rural and agricultural information is largely decentralized in each of the three countries. National services provision—be it extension or through services delivered by different ministries—are, in principle, provided at local levels. However, there are notable gaps between national policy and local service delivery. In each country, we see a range of private, public, and non-governmental actors filling gaps in government service delivery to varying degrees of quality, consistency, and success.

There are gaps in the physical ability to extend media—each country reports infrastructure challenges in electricity, internet hardware, and telephony in rural areas, which undermines media access. In Ukraine, this is exacerbated by the war. This has led to a reported digital gap in the three countries—digital technologies need more infrastructure and technical knowledge to reach rural populations. With the growth of social media as an important information source and communication network in each country, there are gaps in access, ability to critically interpret information, and misinformation.

4.4.2. Rural Communities

Across the case studies had common themes around the nature of rurality and rural–urban dynamics. The poverty rate across all three case study countries is high, with a substantial urban–rural split. While the Ukrainian economy has been growing and diversifying at a different pace in different ways from Malawi and the Philippines, it is being damaged by the ongoing war. For rural communities, this has meant that the rural economy is facing constraints and challenges across the value chain, and rural agricultural capacity has been weakened. In the Philippines, economic and growth policies are looking to expand agriculture as a section of the economy, particularly in value addition and processing. In Malawi, while there are much smaller farms than in the Philippines and Ukraine, it is still a hugely important sector, making up 80% of the rural economy. As a result, changes in rural dynamics have an effect across national economies in each case study.

However, population dynamics make rural economies more vulnerable. Rural–urban migration is a challenge in all three countries, particularly for young people who are leaving the agriculture sector. There is an ageing rural population, which will experience environmental change differently and have different sets of livelihood challenges. This can affect rural innovation, livelihoods, and community environmental resilience. In Ukraine, this migration extends across borders to escape the war, though there was a movement from the countryside before the large-scale invasion.

That said, there is space for community-driven initiatives to re-emphasize the importance of the rural environment in each country. There are initiatives to support rural innovation, improving infrastructure and opportunities in rural areas, and efforts to stem rural–urban migration. However, they will need citizen participation and action to be effective in long-term change.

4.4.3. Governance

Questions about governance have already arisen in the discussion of media governance and rural communities. However, there are two additional areas. One is land ownership and control. In each country, who owns the land and makes decisions about it is important in rural development. Policy and practice around land ownership remain contested in each country. Land ownership is different based on gender, socio-economic position, and social position. For instance, women may be less likely to own land or decide its use. Indigenous groups in the Philippines can claim ancestral domain rights in principle, but there are questions about the practice of granting land that can challenge the practice. In Ukraine, there has been a process of de-communalising farms since Ukraine's independence, but the newer engagement with European Union (EU) legislation and the changing government position means that rules about land ownership are in a state of fluctuation.

There is also the question of policy goals around environmental change and climate change. In each case country, there are strong national policy plans and multi-year programmes for how the countries will address environmental change dynamics. They depend on the country's specific challenges, but all are consistent with international goals around the SDGs and engage with ongoing policy development related to international policy priorities. However, each country also sees gaps between national policy creation and local policy implementation. The structures, such as extension systems, that are due to implement programmes based on the national policy directives are under-resourced and overburdened, with a tendency towards top-down programmes and policy implementation.

5. Conclusions

Information and communication environments are key in addressing environmental change and building community and rural resilience. A strong information and communication ecology must support critical dialogue, transparent communication, and communities getting the information they need at the right time. This suggests a focus on capacity building and building knowledge systems. Technical skills and information are crucial

in being able to adapt agriculture and rural practices to continue to support rural livelihoods. However, networks, strong institutions, a strong communication environment, and networks of local actors are also fundamental to ensuring a longer-term communication environment that can respond to and support the resilience of communities to climate change and climate shocks.

Governance remains an issue. For communication, this means governance of the media environment—regulation and support for formal media institutions, governance of informal media and communication infrastructure. Where these are weak, communication will be undermined, and gaps will remain in communication and rural transformation. Governance related to environmental priorities also needs to address the linkages between national priorities and local implementation: what are the gaps, where are their capacity challenges, and are there mismatches between national and local rural and environmental priorities?

Equity remains important at all levels. Gender inequalities remain and must be addressed. However, power structures at local levels can also prioritize different factors of social differentiation (such as age). In failing to address these power structures, we will continue to fail in the equity goals of inclusive rural transformation. These same inequalities will also continue to undermine resilience to environmental change. Each of these can be addressed through strategic communication for development principles and a strong enabling communication environment.

When we look at the rural landscape for the three case study countries presented in this paper, we can see similar challenges: governance, communication gaps, income and social inequalities, livelihood challenges, and their intersection with environmental change. In each of these case studies, rural communities had less capacity to address the environmental challenges they were facing but still needed to contend with the consequences of their outcomes. As a result, these are issues at a crisis point. However, when we look at the principles of communication for development and their contributions to rural development, they speak to the core of the challenges articulated in each case study. Overlooking the contribution communication can make to equitable, sustainable change undermines and frustrates inclusive rural transformation. This leaves communities and individuals more vulnerable to the consequences of environmental change and climate events—less resilient and adaptive, with poorer livelihood and food security outcomes. These do not fulfil the visions for equitable and sustainable global development enshrined in the SDGs.

However, communication for development does need to expand the conceptualisation of the communication environment. It needs to consider in its principles the need for interdisciplinary and trans-sectoral knowledge specifically to deal with climate and environmental change. The information environment needs to provide the skills and capacities to interpret complex environmental information locally and make locally driven decisions about resilience and adaptation. This information needs the networks and infrastructure (hardware and software) to get information to the people who need it at the right time. This requires building strong networks and a communication environment where urgent information can pass quickly to communities. This means that communities have the capacity to assess information, there is a strong local capacity for environmental information, and longer-term social change is supported by communication processes that follow communication for development principles. As the Ukraine case suggested, a perspective of "climate humanism" combined with communication for development holds great potential to grow communication for development while also supporting integrated, inclusive rural development in the context of changing environmental conditions. Looking forward, frameworks such as Rural Communication Services hold great potential for consolidating these issues to support integrated rural development through communication, adjusted to ensure we address key environmental and climate change challenges.

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