SPEEDS AND RHYTHMS OF SOCIAL REMITTANCE IMPLEMENTATION FOR CLIMATE ADAPTATION IN SKOURA M'DAZ, MOROCCO

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With 2 figures and 1 table
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Summary: In the debate on climate change and migration, there is growing recognition that human mobilities can function as a means of adaptation to climate change. While much research has focused on financial remittances for adaptation, less attention has been paid to social remittances. We adopt an im/mobilities perspective to examine the pathways of social remittances related to agricultural practices in times of environmental stress. By doing so, we push the conceptualization of social remittance implementation as more than a discrete step, illuminating it instead as a process with meandering speeds and rhythms. Based on intensive qualitative research carried out between July 2021 and November 2022 in Skoura M'Daz, a small town in Morocco, we analyze factors mobilizing and immobilizing the implementation of social remittances. We focus on incorporated social remittances, particularly new ideas or knowledge related to new agricultural practices that could potentially be enacted, like constructing drip irrigation systems and digging wells. Mobilizing factors like personal wealth and access to digital information contributed to their implementation, while immobilizing factors prolonged, delayed, or stopped a remittance flow altogether. Implementation processes also featured stop-and-go, ebbing and flowing rhythms of im/mobilization, where agents made plans, worked around constraints, or put goals on backburners, resulting in, what we name, latent social remittances. This temporal dimension provides opportunities for unexpected transformations and outcomes beyond initial formation that should be taken into consideration when studying the relationships among mobilities, social remittances, and climate adaptation.

Keywords: Social remittances, im/mobilities, Morocco, agricultural change, climate adaptation, migration

1 Introduction

As climate change effects intensify around the world, people whose livelihoods are connected to the environment are most vulnerable (IPCC 2022). Governments and policymakers seek to alleviate effects through planned adaptation (IPCC 2007). In the meantime, affected persons make their own decisions in response to changes - whether environmental or economic - in their lives, called 'autonomous adaptation', not often a 'conscious response to climatic stimuli' (IPCC 2007).

This paper answers the call by Boas et al. (2019) to research 'climate mobilities' but with a focus on migration-as-adaptation–or rather, mobilities-as-adaptation–for climate change (see Black et al. 2011, Gemenne & Blocher 2017, Tacoli 2009) in order to clarify how migration can have consequences for climate change adaptation (Porst & Sakdapolrak 2018, Sakdapolrak et al. 2016). Through mobilities, migrants build new knowledge, capital, or networks that could potentially build the adaptive capacity or resilience of themselves, households, and communities to environmental changes and disasters (Adger et al. 2002, Gemenne & Blocher 2017, Porst & Sakdapolrak 2020, Sterly et al. 2016). For example, the sending of financial remittances creates linkages between mobile persons and their origin or destination communities that can aid investments in climate adaptative practices (Bendandi & Pauw 2016, Maharjan et al. 2021, Musah-Surugu et al. 2018, Pilarova et al. 2022).

This research fills a gap in the examination of human mobilities and adaptation by focusing on social remittances. First expanded upon by Levitt (1998), social remittances, which are ideas, behaviors, skills, knowledge, values, and more exchanged across migrant connections, are less studied than financial remittances. These intangible remittances act as a form of circulating cultural diffusion across areas connected through people's mobilities and can span political, environmental, socio-cultural, or economic content (Levitt 1998, Levitt & Lamba-Nieves 2011, Pinkow-Läpple & Möllers 2025). Research has begun to elucidate mechanisms in which intangible transfers through mobilities can enhance adaptation or resilience to climate change (see Diniega & Sakdapolrak 2025), such as widening social networks (Scheffran et

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al. 2012), transferring skills (Entzinger & Scholten 2022), or gaining or transmitting new ideas (Jost et al. 2016) related to climate adaptation. For example, Klocker et al. (2018) argue that migrants' knowledge from their past agricultural experiences can act as a repository on which to draw for climate change adaptation in their destination communities in Australia.

Our case study embeds social remittances into migration-as-adaptation research, centering on social remittances and their influence on changing agricultural practices in a small town called Skoura M'Daz in rural Morocco. Interviews, participant observation, and surveys with farmers and government officials in 2021 and 2022 reveal how translocal households are responding to current and anticipated local environmental changes, which are simultaneously influenced by climate change.

We analyze our results through the application of an im/mobilities lens stemming from insights from the mobility studies field, contributing to social remittance literature in two ways. First, past research on social remittances has mainly examined longer-term migration, such as labor or permanent migration. However, we assert that physical mobilities like visits or seasonal work in other places, and even short-term mobilities that make up migration trajectories, also expose people to new ways of being and thinking (Diniega & Sakdapolrak 2025). Second, we examine further the temporality of how social remittances are implemented by scrutinizing how or why agents do or do not implement the remittances. Ultimately, the implementation stage is revealed as more than a linear, point A to B step. Instead, it is a flow or process that accelerates, slows down, stops, or takes a circuitous route, creating rippling effects into the future.

The article proceeds as follows. First, a literature review of social remittance pathways is presented. Second, the im/mobilities approach to social remittances is described. Third, the methodology and site selection are explained. Fourth, context regarding the formation and transmission of social remittances related to environmental change is provided. Fifth, we analyze the implementation of social remittances: the speed (mobilizing and immobilizing factors) and the rhythm (pattern of im/mobilizing factors). Finally, we present our discussion and conclusions.

2 Social remittance pathways

In this paper, we examine specifically the outcome process of incorporated social remittances. Incorporated remittances are ones like skills, practices, specific innovation, and knowledge that travel with the remittance-holder and are "transferred and used when migrants return, or migrate somewhere where they can put their skills and knowledge into practice" (Peth & Sakdapolrak 2020: 550). In contrast, there are also intangible social remittances like values, ideas, or norms, which have effects that may be more difficult to evaluate (Peth & Sakdapolrak 2020).

The social remittance pathway is often broken down into three generalized steps (Grabowska et al. 2017, Levitt 1998). Each step is sometimes named differently across the literature: formation or creation; transmission or transfer; and implementation, adoption, actualization, diffusion, impact, or effects (Bivand Erdal et al. 2022, Grabowska et al. 2017, Levitt 1998, Pinkow-Läpple & Möllers 2025). In formation, for example, an agent is exposed to a destination area and may learn a new idea. They transmit it to family or friends through communication or by returning to the origin. They implement a new idea, or an impact is seen. For example, seasonal workers in Australia formed new agricultural skills that they could transfer and implement in their gardens or farms back home on the Pacific Islands. At the same time, they also brought their own knowledge from home to contribute to Australian agricultural practices (Dun et al. 2018).

Inevitability of implementation cannot be assumed. Numerous factors influence whether remittances flow between each step, including whether they are eventually implemented. Over the years, researchers have identified a wide range of such determinants (Diniega & Sakdapolrak 2025, Levitt 1998), among which are agent characteristics (Drbohlav & Dzúrová 2020), similarities or differences between origin and destination areas (Levitt 1998), and the relevance and applicability of learned skills or ideas across origin and destination areas (Peth & Sakdapolrak 2020). These elements can shape not only whether or not a remittance is formed, or transmitted, or implemented, but also the extent to which they can have an effect. An example by Garapich (2016) showed that Polish migrants to the United Kingdom sometimes displayed resistance to adopting or transferring remittances based on personal decision-making or willingness to change. In one case, a remitter did not believe a specific norm from the Uk would be as seen as acceptable by her friends or family in Poland, so she avoided discussing it with them, preventing transmission of this remittance (Garapich 2016).

Although the social remittance pathway is often presented simplistically, linearity of this pathway is not predetermined. While some social remittances may be translated into reality and effect change, many more never are. 'Potential' social remittances are the ideas migrants or returnees form from realizing discrepancies between 'home' and 'away,' but which may never go farther into transmission or implementation (Karolak 2016). Barriers may prevent the formation of social remittances, or even later transmission and implementation, creating 'lost' remittances. Paasche (2017) asserts that even though migrants may aspire to transmit newly developed ideas, norms, and practices, their abilities to do so are sometimes constrained, whether by structural reasons or receivers' lack of interest.

A few researchers have added complexity to the three stages of the social remittance pathway. For example, Bivand Erdal et al. (2022) refined the conceptualization of the 'formation' step, which they term content creation, dividing it into exposure, comparative evaluation, and articulation. Figure 1 (adapted from Bivand Erdal et al. 2022, conceptual input from Bivand Erdal et al. 2022, Drbohlav & Le My 2024, Grabowska et al. 2017, Karolak 2016, Levitt 1998, Peth & Sakdapolrak 2020) represents a current understanding of the social remittance pathway. Insights added by these other authors hint at the heterogeneous ways a remittance could move along or through the pathway. More clarity could be gained specifically in terms of the implementation stage. Thus, rather than assuming that a remittance either reaches implementation or not, this paper builds on Figure 1 by investigating the implementation stage as a process, rather than a discrete step.

3 An im/mobilities lens for the flow of social remittances

The central objective of the paper is to enhance our understanding of the implementation stage of social remittances, focusing on a case study of changing agricultural practices in the context of environmental change. In this process, remittances may not be binarily non-implemented or implemented, but rather in-process or latent. Remitters and receivers encounter factors that enable, slow down, or block implementation, with back-and-forth movement towards implementation. Moreover, like Peth and Sakdapolrak (2020: 55) hint at, there are possible 'subtle and long-term' effects of remittances over years, and we argue that remittances do not have to be implemented to have influence. Therefore, the main question we answer is: How are incorporated social remittances - knowledge, skills, and innovations - for new agricultural practices implemented, or not, by rural farming households in Skoura M'Daz, Morocco?

The new mobilities paradigm informs our im/mobilities lens for the study of social remittances. It emphasizes the diversity and interconnectedness of mobilities and immobilities of people, ideas, and material things, creating ties and flows among places locally and globally (Sheller & Urry 2006). With social remittances connected to the movements of people, we adopt an im/mobilities lens in two ways.

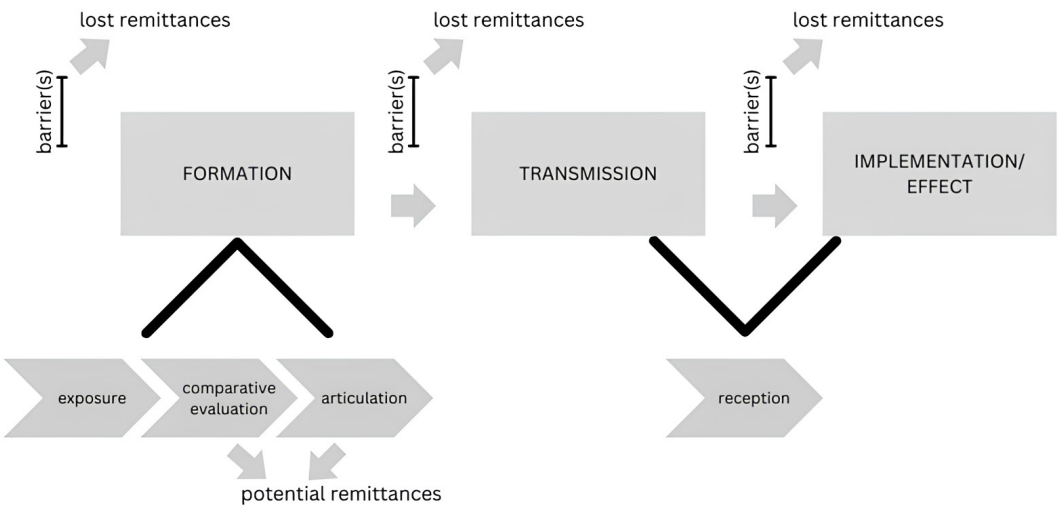

Fig. 1: Current understanding of the social remittance pathway

First, we use 'translocal mobilities' to describe people's physical movement to different places that lead to potential social remittances. Most social remittance literature focuses on transnational migration (Karolak 2016, Suksomboon 2008, Vianello 2013), though a few examples also capture social remittances through internal migration (Entzinger & Scholten 2022, Ge et al. 2011). As explored further by Krawatzek & Müller-Funk (2020) and Diniega et al. (2025), a diverse range of mobilities, not only those normally considered migration, differing by temporality and geographical distance between two or more places can be the impetus for knowledge or skills exchange, transfers of values, and practices: social remittances.

Second, we imagine that a social remittance is im/mobile along the pathway from formation to implementation. This movement is not necessarily linear, but instead takes place at different rates or does not occur at all. In order to describe this im/mobility, we turn to Cresswell's (2010) 'politics of mobility,' which explains that mobilities are produced through and embedded within differential socio-cultural, historical, and power relations. He highlights six aspects of mobility that can be used to evaluate and represent mobilities. These are 1) motive force, 2) speed of movement, 3) rhythm of movement, 4) route, 5) experiential facets, and 6) frictions or stopping (Cresswell 2010). To understand *how* a social remittance progresses as it moves along the pathway towards implementation, this article focuses on speeds, rhythms, and frictions.

For speeds and frictions, what makes social remittances continue moving along the pathway without becoming lost, and, vice versa, what makes them halt, slow down, or stop? Changes in speed can come from internal or external pressures, aspects that facilitate or act as barriers to formation, transmission, or implementation. As mentioned previously, social remittance researchers have identified many factors that relate to speed, frictions, and the extent to which the remittance has an effect: characteristics of the remittance-holder or remittance-receiver like socioeconomic status (Grabowska & Garapich 2016, Levitt 1998), similarity between origin and destination (Levitt 1998, Peth & Sakdapolrak 2020), and access to technology to transmit remittances (Lumayag & Mohd Sail 2014). We examine these mobilizing and immobilizing factors.

For rhythms, it is not only a question of whether a social remittance is mobile or immobile towards implementation, but also how a remittance is put into practice over time. Lefebvre (2004) highlights aspects of rhythm, such as repetition, interferences of linear or cyclical processes, and growth and decline. Rhythmanalysis addresses the 'spatio-temporal patterns' (Edensor 2010) of mobilities and immobilities that appear in movement. This article contributes to social remittance literature by showing that, in some cases, even if a social remittance appears to be stopped or lost, it does not mean it is in permanent stasis. Instead, we analyze a social remittance's rhythms, how it stops, goes again, subtly or directly, or continues in different directions, having unexpected influence on agents' actions.

4 Methodology

The research utilized a mixed methods ethnographic approach, including surveys, in-depth interviews, participant observation, and farm walks, in Skoura M'Daz, Morocco, and the surrounding region of Fez-Meknes. The first author had previous experience living and working in Skoura M'Daz for two years. Thus, she selected Skoura M'Daz as the research site based on her awareness of it as a translocally embedded area with ongoing environmental and agricultural issues particularly relevant to the research topic. Ethical approval from the University of Vienna's Ethics Committee was obtained in early 2021.[1)] Data collection occurred over 1.5 years from June 2021 to December 2022.

Initially, two research assistants conducted sampling surveys with 120 participants across the villages comprising Skoura M'Daz through systematic random sampling proportional to each village's population. The surveys collected household demographic data and identified households with migration backgrounds and agricultural lands as purposive sampling for semi-structured interviews. Our definition of households is informed by translocality, understanding that members of a household may be embedded in multiple places and maintain connections with members in the place of origin (see Etzold 2014, Greiner & Sakdapolrak 2013, Islam & Herbeck 2013).

Of the 83 total participants interviewed, 46 participants had personal experience working in agriculture in Skoura M'Daz, upon which the main results of this manuscript are based (Tab. 1). The first author worked with two research assistants and interpreters who conducted interviews in

[1)] Ethics Committee of the University of Vienna, Reference Number: 00631.

Tab. 1: Interview participants with agricultural experience in Skoura M'Daz

Interview	Alias	Gender	Age	Occupation/Role	Main Residence
1	Saeed	M	27	school counselor trainee	Oujda
2	Fouad	M	40	truck driver	Skoura M'Daz
3	Hafid	M	78	herder	Skoura M'Daz
4	Mohamed H.	M	64	farmer	Skoura M'Daz
5	Mohcine	M	52	IT company owner	Casablanca
6	Ali H.	M	24	café owner	Skoura M'Daz
7	Tariq	M	54	association leader	Skoura M'Daz
8	Rachid H.	M	34	farmer	Skoura M'Daz
9	Hamid	M	41	hotel owner	Skoura M'Daz
10	Redwan	M	40s	café owner, farmer	Skoura M'Daz
11	Mustapha E.	M	29	farmer, English tutor	Skoura M'Daz
12	Saad	M	35	nursery manager	Skoura M'Daz
13	Ayoub O.	M	30s	forestry official	Skoura M'Daz
14	Badr	M	20s	farmer	Skoura M'Daz
15	Hassan	M	38	wildlife photographer	Skoura M'Daz
16	Ismail	M	45	tour guide, farmer	Skoura M'Daz
17	Omar C.	M	39	shop owner	Skoura M'Daz
18	Farid	M	30	farmer	Skoura M'Daz
19	Rachid K.	M	27	farmer	Skoura M'Daz
20	Mohamed O.	M	45	Amghar*	Skoura M'Daz
21	Yasser	M	48	Ministry of Agriculture extension worker	Skoura M'Daz
22	Ayoub T.	M	32	amghar	Skoura M'Daz
23	Younness	M	27	herder	Skoura M'Daz
24	Rabie	M	23	university student, agricultural seasonal laborer	Skoura M'Daz
25	Mohamed D.	M	55	trader, farmer, cooperative leader	Skoura M'Daz
26	Taha	M	42	delivery driver	United States
27	Mohamed E.	M	43	IT company employee	Rabat
28	Yassine	M	37	IT company employee	Rabat
29	Youssef	M	70s	retired teacher	Skoura M'Daz
30	Hamza	M	30	cooperative member	Skoura M'Daz
31	Yemna	F	40	baker	Skoura M'Daz
32	Moha	M	37	Commune** official	Kenitra
33	Mustapha M.	M	66	retired police officer	Skoura M'Daz
34	Omar R.	M	30	farm caretaker	Skoura M'Daz
35	Driss	M	25	agricultural seasonal laborer	Skoura M'Daz
36	Ali A.	M	29	teacher, doctoral student	Fez
37	Abderrazaq	M	27	master's student	Sefrou
38	Ahmed	M	54	forest guard	Skoura M'Daz
39	Abdellah	M	38	transport driver, farmer	Skoura M'Daz
40	Achraf	M	36	irrigation technician	Skoura M'Daz
41	Abdellatif	M	50	association leader, farmer	Skoura M'Daz
42	Bilal	M	50	community leader	Skoura M'Daz
43	Kamal	M	60s	farmer, cooperative leader	Skoura M'Daz
44	Faissal	M	30	farmer	Skoura M'Daz
45	Karim	M	45	regional manager for development organization	Fez
46	Mehdi	M	47	organizational development officer	Fez

Notes: *Amghar: Elected irrigation canal manager for an agricultural sector within a commune. **Commune: Local administrative level in rural areas of Morocco.

Darija (Moroccan Arabic) or Tamazight (indigenous Amazigh language) based on the participant's preference. From the surveys and snowball sampling, we selected people with farms or other experience in agriculture to provide insight into new agricultural practices and changes in Skoura M'Daz. All but one of the 46 were men, as women have more limited participation in agricultural work and decision-making.

The goal of interviews was to link mobility histories of participants with their personal experiences of changes in agricultural practices. The semi-structured interviews were divided into the following based on the participant's experience: participant demographic data, mobility history and experiences, agricultural experiences, perspectives on environment and environmental change in places where they were mobile, future visions for Skoura M'Daz, and community involvement. Participants were asked to describe what they had learned visiting or living in other places, especially if they had worked in agriculture in other locations, or whether they had seen, heard about, or applied any new agricultural practices. If so, they were prompted for specifics on the learning or exchange process, including where or when they first came up with the idea or from whom they learned, as well as steps they had taken to implement the new practice. Interviews with agricultural extension workers, government officials, and community association leaders supplemented information on agricultural policies, trainings, and local development projects.

The first author also applied participatory approaches during her long-term stay in Skoura M'Daz. She attended agricultural workshops and local association meetings, and through participant observation experienced life during harvest, school year activities, and holidays. With farmers, she conducted thirteen transect walks across their agricultural lands, where she learned about new and traditional agricultural practices, growing techniques, and land history.

Assistants transcribed all interviews into the spoken language and then translated them to English. Data analysis was conducted through ATLAS.ti with both inductive and deductive coding. Some thematic codes were identified during the fieldwork period when participants brought up similar topics, and others through a generative process while reading through the interviews during analysis. The research questions also produced analytic codes, such as mobility history and agricultural practices. To protect the confidentiality of participants, this article utilizes pseudonyms in the reporting of the results.

5 Research site: Environmental change and mobilities in Skoura M'Daz, Morocco

Today, 38% of Moroccans live in rural areas disproportionately affected by worsening environmental changes like desertification (Swearingen & Bencherifa 1996, The World Bank 2020a), putting into question the future of the 31% of the

Fig. 2: Location of Skoura M'Daz within Morocco

Moroccan labor force employed in the agricultural, fishing, and forestry sectors (International Trade Administration 2022). From 2019, Morocco experienced five consecutive years of drought (Toreti et al. 2024), measuring in February 2022 64% less rain than average after the wet winter season (Eljechtimi 2022a). Morocco has faced the question of water sustainability since colonialist times, from the French expansions of 'modernized' irrigation systems (Swearingen 1987) to the 1970s with King Hassan II's announcement of a decades-long national dam-building program (Benargane 2017), and the current goal to build more desalination plants (Agence France-Presse 2022, Eljechtimi 2022b).

The Green Morocco Plan (GMP) of 2008 established a comprehensive national agricultural policy that sought to increase agricultural output, promote sustainable development, and address rural poverty through support of small-scale agriculture (Agence Pour Le Développement Agricole 2022, Mathez & Loftus 2022). Since the Gmp's expiration in 2020, the newer Green Generation Plan mainstreams climate adaptation and resilience, as well as rural youth engagement to prevent out-migration, into its agricultural programming (The World Bank 2020b). Subsumed under the GMP were preexisting and new water conservation programs, including the National Program for Water Savings in Irrigation[2] (AFDB 2016, Faysse 2015, Ministère De L'Agriculture 2023). As part of these programs farmers were provided subsidies to convert irrigation to drip and sprinkler systems (Bossenbroek et al. 2023, Elder 2022, Molle & Tanouti 2017). Farmers can apply to a support fund, where the subsidy covers up to 100% of the costs for smallholder farmers owning under five hectares of land; for over five hectares, it covers 80%. Either the farmer is reimbursed from receipts after installation, or the farmer works with an entrepreneur who applies on behalf of the farmer.

Along this context of environmental and agricultural change shaped by national policy goals, Moroccans have become increasingly mobile and integrated across networks spanning rural, urban, and international communities (Crawford 2008, De Haas 2007). From the 1960s, emigration and labor mobilities of Moroccans to Europe increased the importance of financial remittances in household livelihoods, rural development, and social transformation (De Haas 2009, Kusunose & Rignall 2018, Silverstein 2015). Recent scholarship highlights linkages between environmental change and mobilities in Morocco (Ou-Salah et al. 2022), including how both financial and social remittances - emigrants' discussions and ideas - led to climate adaptation-related projects in Tinghir (Van Praag 2021).

Given the high mobility experiences of Moroccans, combined with a large portion of the population working in the agricultural sector that is being affected by climate change, this study focuses specifically on the role of social remittances for adaptive practices for agriculture. While previous studies on agricultural change and mobilities in Morocco have centered on desert communities, this research explores a case study in the Middle Atlas Mountains, in the town of Skoura M'Daz (Fig. 2). Located approximately 50 miles southeast of Fez, with a population of 8,776 (at the time of the 2014 census), Skoura M'Daz is a small commune made of about 23 douars, or villages. Historically an agricultural and pastoralist Amazigh tribal region, Skoura M'Daz was also the site of a French colonial fort, as well as a French model farm in the valley of Lfwerem. A system of concrete irrigation canals built under French direction is now managed under water user association and irrigation groups.

In Skoura M'Daz, long-term environmental changes like decreasing precipitation and seasonal variability, as well as generational agricultural change simultaneously affected by land privatization, are influencing livelihoods today. Out of the 120 surveyed households, 65.83% of households listed agricultural activities as part of their livelihoods, with 38.3% identifying agriculture as their household's primary income. Of the 89.17% of households who own or share inherited land, only 7.48% households had more than five hectares. The main cash crops are olives and carobs, while herding, keeping livestock, and subsistence farming are present but in decline.

Skoura M'Daz is connected to various international and internal mobility constellations stemming from the delocalization of rural livelihoods, increasing education for both genders, translocal networks through marriage, and youth unemployment, among other reasons. One-fourth of surveyed households have a member who is from outside of Skoura M'Daz, with a plurality having moved to Skoura M'Daz for family reasons (i.e., marriage) from nearby communes or provinces. Almost 76% of households had translocal members living outside of Skoura M'Daz more than six months out of the year. Destination cities are those in the region,

[2] Programme National d'Economie d'Eau en Irrigation (PNEEI)

including Fez, Sefrou, and other communes like Guigou, as well as outside in Rabat, Casablanca, Tangier, and southern desert cities. Only 10% of surveyed households had household members living abroad, with top destination countries being Belgium, Spain, and France.

6 Results

6.1 Agriculture-related social remittances in Skoura M'Daz

Of the 46 participants who had experience working in agriculture in Skoura M'Daz, 34 of them had at least one idea for a different agricultural practice than what they already used. Twenty-six participants had at least one idea that stemmed from a social remittance, whether through their own mobilities or mobilities of people they knew. Of those, 18 had implemented, had plans for, or were in the process of implementing at least one new agricultural social remittance. Ten had learned about an agriculture-related social remittance or had attempted to but been unsuccessful in implementation. Not all participants identified new agricultural practices as stemming from social remittances; instead, four had heard about practices online or on television. In this section, we give background on the new agricultural practices: What were they, and what motivated participants to adopt new practices? For the social remittances, where did the remittances come from, and how did they get to Skoura M'Daz?

Drip irrigation systems or sprinklers were the most common idea participants mentioned. Due to the Green Morocco Plan, drip irrigation had spread quickly around Morocco, including towns in the surrounding region. However, there had been slower uptake within Skoura M'Daz, due to immobilizing factors to be discussed in section 6.2.2. Yet many participants expressed interest in or were actively pursuing installation. For example, Saad, the manager of the privately-owned nursery in Skoura M'Daz, installed an overhead sprinkler system for seedlings after visiting and seeing it at other nurseries during work visits. Participants in Skoura M'Daz also noted that digging wells, buying water pumps, and building water storage basins were ideas they were considering after being influenced by their own or contacts' mobility experiences. Other ideas included planting different drought-tolerant crops; planting more vegetables; building plastic greenhouses; focusing on organic agriculture; changing caretaking techniques for cows, bulls, sheep, or goats; using different fertilizers or pesticides; and adjusting business practices.

There were negative motivators for new practices (experiencing drought, decreasing agricultural productivity, breakdowns of irrigation canals), in addition to positive future visions (conserving water, expanding agricultural production, increasing income, improving family situation, and upgrading to newer technology). The most prominent motivation for being interested in the agricultural practices participants discussed was environmental changes affecting their agricultural production. Drought from decreasing water precipitation, also leading to decreasing groundwater levels, affected most farmers we talked to. Answering why his family had installed a sprinkler system, farmer Redwan described, "The water is not enough. We have to water the olives. [My cousins] planted onions here, which was useful, but the water is scarce here. The tomatoes have dried."

Additional issues affected water supply: participants pointed out that people steal water from canals through hoses or extend their irrigation hours against the agreed-upon times. A broken pipe in the Lfwerem irrigation system built under the French had affected one-third of farms on the western side of the main road, and its repair was at a standstill while awaiting funding from the Ministry of Agriculture. The farmers affected had become dependent on rainfall. We asked Mohamed D. about the broken pipe: "It has affected us a lot…. Water just keeps decreasing and decreasing. We were growing corn in Lfwerem, but now we only want to water the olives…. We are no longer planting crops like corn and potatoes in August because of the heat, and they need more water."

Agricultural social remittances were formed both directly through translocal mobilities and indirectly, with participants identifying different sources for their ideas like work, personal travel, or studies in other places. Said 52-year-old translocal resident Mohcine, "Travelling makes a difference. You travel along a road, you see a pool of water, you see drip-by-drip irrigation systems, which haven't been installed here. People who travel are the ones who bring this idea…. So, it is not important to be educated. Just from observation, you can help other people. Not just money, but your thoughts can be useful as well."

This matched our data. Twelve participants had had personal experience working with a new agricultural practice in another location. Six pointed to their personal mobilities that had led them to seeing different agricultural practices in places outside

of Skoura M'Daz. Ten said they had learned about a practice from someone else outside of Skoura M'Daz. Two people said they had first seen the different agricultural practice within Skoura M'Daz on neighbors' farms and clarified that the neighbors had brought it back from experiences in places outside the commune. Thus, these household social remittances, when implemented, can also spread out into the community as secondary transfer. Participants did not apply social remittances only to their own agriculture; instead, five participants passed on what they knew to others in the community.

6.2 Speeds of social remittances

Viewing implementation of social remittances as a process means that the components of speed and rhythm can be evaluated. In this section, we do not examine the speed in terms of the length of time implementation took, but rather the factors that spurred or blocked movement - thereby giving the social remittance speed - along the implementation path. What factors assisted our participants in moving the social remittance from idea to actualization? What factors halted the pathway to the participants' desired state of implementation? We label these mobilizing and immobilizing factors.

6.2.1 Mobilizing factors for implementation

Several common mobilizing factors cut across our participants' examples of in-progress or implemented social remittances. Practices ranged from changing the vaccination schedules of cattle to using natural herbicides, but most examples related to installing drip irrigation and sprinklers. Financial capability, close proximity to formation, access to digital media, and agents' own characteristics set in motion the movement from idea to actualization.

Particularly for building new irrigation systems (including water storage basins, hoses, pipes, sprinklers, drip irrigation, or wells), financial capability was what enabled implementation. Only one participant had successfully applied for the government subsidy to build his family's irrigation system; everyone else who was taking steps towards new irrigation had the financial means to build systems themselves. Wealth comes through both translocal mobilities and embeddedness: working or living outside Skoura M'Daz. Several participants referenced absentee landowners, such as a taxi driver living in the nearby city of Sefrou and emigrants living in Belgium and France, as early adopters of drip irrigation without the subsidy. For 38-year-old Abdellah, he and his father invested in a drip irrigation system using personal savings gathered from years of truck driving rather than relying on the irrigation subsidy.

Close proximity to the agricultural idea (i.e., personal experience working with it) during social remittance formation provided the awareness or knowledge for implementation either on participants' own farms or farms of those in their network. When installing his drip system, truck driver Abdellah hired his friend, 36-year-old Achraf, who had been an agricultural technician in Agadir and had installed drip systems for corporate farms. Achraf was consulted by almost ten farmers in Skoura M'Daz for his services in installing drip systems. Three participants had studied agriculture-related subjects in higher education and put into practice their knowledge in the commune. A few participants had been part of trainings or excursions run by cooperatives or agricultural extension workers that focused on drip irrigation. Agricultural diploma graduate Ali H. said: "For ideas, we have many competent people here in Skoura. There are engineers, and there are agriculture technicians. They have brought ideas, and they gave new ideas about drip-by-drip systems, and about developed techniques, and about chemical products. Here in the region, people didn't know about pesticides and herbicides, fertilizers. But because people have now studied agriculture, people started to research and bring new ideas. Before we used to eat just organic food, but now people are starting to use chemicals."

However, it is important to highlight that mobilizing factors in a participants' background did not guarantee implementation. For example, a few participants who had personal experience working with drip irrigation did not work towards implementation in Skoura M'Daz.

Agent characteristics also influenced how remittances were put into motion within the implementation process. Younger participants were more likely to say that they consulted online media sources to gain know-how for remittance implementation. For example, 30-year-old Farid watched videos online about building drip systems, as well as information about cattle-raising from other countries. YouTube, Facebook, Messenger groups, and WhatsApp groups were all identified as sources of information for implementation. There were a few particularly innovative participants who had multiple ideas for agricultural practices, like one who had established

solar energy, drip irrigation, garden fountains, and an extensive beekeeping business. These 'purposeful innovators' (Levitt 1998), who sought out advice and information from their networks and had strong motivations to make a difference, each had at least one implemented agricultural remittance.

6.2.2 Immobilizing factors for implementation

Most social remittances are not immediately enacted without facing factors that can delay, pause, slow down, or stop implementation. Immobilizing factors can happen at the beginning of a remittance's implementation phase, so that no action is ever taken, or they can appear throughout the process of putting an idea into action. Immobilizing factors for implementation included agents' own choices and beliefs, land inheritance patterns, and lack of decision-making power. Specific to the remittance of drip irrigation were lack of financial capability, lack of land titles, and bureaucracy.

Even when an agent forms and transmits a social remittance, they may choose not to continue implementation for any number of reasons, whether assessed suitability or their own choices and beliefs. The nursery manager had visited other nurseries in the region with plastic greenhouses to protect seedlings. However, he said he had never tried out greenhouses in Skoura M'Daz because they would probably not be productive for the specific type of tree species he grows. There was also misinformation about applying for the irrigation subsidy to install drip irrigation. Some farmers with small pieces of lands believed they did not meet a minimum amount of landed required for the subsidy, even though there was none.

One reason for smaller and separated pieces of land per family is inheritance patterns, which in Skoura M'Daz is influenced by Islamic law, local custom, family size, and personal choice. This has led to smaller landholding sizes for households, or fragmented landholdings in different areas around the commune on land with varying agricultural productivities. Many families do not divide lands for inheritance due to conflict amongst family members, or mutually agree not to divide for ease of management over larger landholdings. Twenty-five-year-old university graduate Driss explained, "We are working to split the land even if it is difficult because there are more than 70 people who share the land. We also have problems among our elder family members, but it is not something new. The dispute started a long time ago. Concerning the irrigation system, you cannot get all the family members to agree to the idea."

Here, the lack of decision-making power affects the extent to which new agricultural practices can come into being. For example, many youth do not own lands yet and thus do not have sole decision-making power, even when they are selected by family as the main caretaker of shared land. One local agricultural extension officer said, "I have worked with young people. They have a new mindset and great willingness for change. However, as I mentioned, the majority of them don't own lands, so their activities are limited."

For 24-year-old Ali H., despite studying agriculture in university, his father believes Ali has only book knowledge that is not applicable to their agriculture. Others who wanted to implement changes lacked decision-making power as sharecroppers; in these cases, the relationship with the landowner mattered. Sharecropper Mohamed H. said, "We personally can't change it because our origin is not from here, so we don't own our land. We do what the owner tells us."

Although the most common new agricultural practice participants wanted to try was new irrigation, many participants encountered a number of immobilizing factors specific to applying for the irrigation subsidy. The biggest barrier for implementing new irrigation systems, particularly drip systems, was lack of financial capability. There is a high start-up cost to dig a basin, buy a pump, and install a drip system. Actual and estimated costs ranged from 60,000Mad to 80,000Mad, or $6,000-$8,000Usd, in an area where an average monthly income can be around 5,000Mad, or $500. Many farmers cannot afford even the upfront cost before potential reimbursement from the Green Morocco Plan. "We are thinking about buying a water pump from the river, but we need money," said 45-year-old amghar Mohamed O.

Farmers in Skoura M'Daz faced additional difficulties accessing the subsidy because many do not have land titles, necessary for the subsidy application. That in itself is not unique to Skoura M'Daz. Legacies of historical collective lands, as well as tribal lands now being privatized, influence the agricultural sector across Morocco (Rignall & Kusunose 2018), and the government has created programs to assist smallholder farmers formalize land ownership (Thompson & Feld 2020). Moreover, farmers sometimes expand their agriculture or have land based on oral or traditional agreements, but their holdings may conflict with the land records of the Agency of

Forestry and Water. However, Skoura M'Daz was singled out among the regional officials to whom we talked for having problems with land titles. The unique challenge for titling land in Skoura M'Daz is due to an ongoing dispute unresolved by the Qaid[3] since the early 2000s. The conflict revolves around landownership of Lfwerem, which had been a French model farm under the Protectorate era. Descendants of the farmers who had worked on the French farm had land rights for decades, until, in the 2000s, descendants of a local tribe raised potentially valid but conflicting claims to the land. Until the conflict is decided, no more official land titles will be given out, though descendants of the farmers maintain their rights to work the land in the meantime. Said Ismail, a 45-year-old activist, tour guide, and farmer, "For agriculture, the government should solve the problem of papers here. People need to install drip systems. If they solve this problem, people will apply for the fund and then agriculture will develop."

Beyond the need for land titles, another barrier was dealing with bureaucracy. Submitting papers for the subsidy involves multiple appointments and trips to provincial and regional offices. Steps for developing drip systems or digging wells requires permission from multiple government offices. Digging wells in Lfwerem will soon become more complicated: after the M'Daz dam[4] being built just downstream from Skoura M'Daz is completed, farmers will need permission from an additional panel of ministry representatives.

6.3 Rhythms of social remittances

The varying pattern of mobilizing and immobilizing factors create rhythms within the social remittance implementation process. We distinguish how a combination of factors leads to four different scenarios for implementation, though likely more are possible. These are: stop-and-go patterns, compounding remittances and mobilities, waiting or preparing for other conditions, and integration into future plans. The first two represent completed implementation processes with distinct rhythms. The latter two mirror the first, but implementation is not yet completed. Instead, what we call 'latent' social remittances underlie current actions, goals, and plans in a nonlinear path.

The first rhythm is a stop-and-go pattern of mobilizing and immobilizing factors. Agents encounter barriers, but work around or overcome them, or conditions change. For example, farmer Badr in his 20s worked for a season at a vineyard near Fez, which is where he first saw drip irrigation being utilized. He suggested to his father that they install it on their land in Skoura M'Daz, but his father refused, saying they could not change their practices as they were farming on shared land with his brothers. After Badr's father passed away, he became head of household and installed drip irrigation, resulting in increased agricultural production on a previously untilled hillside. He took inspiration from the French irrigation system of pipes and canals existing in Skoura M'Daz, as well as YouTube videos in cultivation expansion and building sprinkler systems. During the years-long stop-and-go implementation process of Badr's elaborate irrigation system, his father's decision against the irrigation system functioned as an immobilizing factor; Badr's own innovative personality, access to technology, and personal experiences with different irrigation systems were mobilizing factors.

Second, rhythms of implementation are not necessarily linear with defined beginning or end points. Compounding mobilities and remittances can combine or build off each other throughout an agents' lifetime, affecting the implementation process of specific remittances. Fifty-four-year-old association leader Tariq told us he was committed to protecting and conserving Skoura M'Daz's environment and agriculture. After being held as a prisoner of war in the Sahara for decades, he had returned to Skoura M'Daz in the 2000s and been shocked at how the once verdant mountain sides and flowing streams were drying up. He started an association, applied for funding to dig communal wells, and planted almond trees, following advice of other association contacts he had in the region. Two years prior to our interview, he had visited a friend, a fellow released prisoner of war, near the city of Meknes. That friend had a farm with drip irrigation systems and gave him a few materials to try it out at home. Tariq found success, gave some materials to his cousins next door, and then also installed sprinklers. By looking at Tariq's overall story, the implementation process of the drip and sprinkler systems did not arise out of a vacuum, but rather was a part of his overarching goal to preserve the agricultural way of life. His past mobilities and experiences with implementing other

[3] Qaid: Appointed Ministry of Interior representative at the commune level.

[4] The dam is a climate adaptation project aiming to stave off aquifer depletion by transporting surface water from the dam reservoir to the Saiss Plain in between Fez and Meknes (Green Climate Fund 2017).

agricultural practices, also remittances, formed context for his new irrigation experiment.

The third rhythm of social remittance implementation resulted from immobilizing factors, but participants were actively making plans or waiting for conditions to change as part of implementation. Several farmers we talked to had short- or long-term goals or were actively changing their conditions for implementation. Farid showed us where his future water storage basin and drip system would be. "We need money. I will start in January or February, when there is enough water. I will fill the basin. I will consult my friends and the people who installed it in Lfwerem, then I will get the materials. I don't have enough money right now," he explained. Unlike other farmers, who ended the discussion at not having money, several like Farid talked concretely of plans in the near future - once the money was gathered, from harvest, friends, or family. Other participants were in the process of implementing systems, consulting experts to find groundwater, applying for permission to dig wells, or learning how to build storage basins. In this rhythm, participants were still in the implementation process, working around immobilizing factors and being spurred on by mobilizing factors.

Other participants were planning for implementation over a longer period, even though current factors were slowing down action. Immobilizing factors can inhibit implementation or action from being taken in present day, but future conditional changes could remobilize implementation. Twenty-nine-year-old Mustapha E. had seen the success of drip systems outside Skoura M'Daz and wanted to implement one on his family's land, but he was seeking out more information online on Facebook and YouTube. He was waiting, however, for both money and time; he was in the process of starting an ecotourism cooperative and wanted to wait to see where he should invest his money first. Badr, whom we described previously, was planning to expand his agriculture based on the current success of his drip and sprinkler system. He pointed out the area, "I will build a basin above to collect water, then I will install a drip system, and I will plant onions…. I still need more land. I will buy this land from my cousins." He, too, was making careful decisions on where next to invest his money. This third rhythm mimics the first stop-and-go implementation process, but instead the outcome is unknown. Even if the implementation process is not completed, participants' lives have already been affected from the steps taken for implementation.

Fourth, social remittance implementation may combine with other goals, mobilities, or remittance ideas. Twenty-three-year-old Rabie, a university student and seasonal worker, traveled through northern Morocco on holiday in 2018 with his friend visiting from Germany. He saw a sign for a cactus fruit cooperative, which he believed was a good idea to bring to Skoura M'Daz. Market prices were increasing, plantings could help stem soil erosion, and cactuses would need little water, which would be beneficial in light of decreasing precipitation. The factor that immobilized implementation? "We need only money. If I went to Germany, I would come back and do everything…. Now, we need only the capital. I will come back to invest. I have my brothers and my dad here to run the business." His dream to move to Germany was motivated mainly by other facets of his life - lack of job opportunities in Skoura M'Daz, better educational opportunities in Europe, stories told by his friend in Germany - but the latent social remittance of the cactus fruit cooperative served as an additional driver. With a plan this far into the future, it is unknown whether this remittance will ever be implemented, but for now, the cooperative idea undergirds and gives further urgency to Rabie's goal to move to Germany.

7 Discussion

This paper expanded upon the implementation step in the social remittance pathway, investigating speeds and rhythms of agriculture-related ideas and practices in Skoura M'Daz, Morocco. We contribute to the discussion surrounding social remittances and migration-as-adaptation in three ways. First, we advocate viewing the implementation stage of the social remittance pathway as a process rather than an either/or outcome. Second, we discuss how im/mobilizing factors of remittance implementation map onto intersectional inequalities. Third, we emphasize that social remittances can contribute to adaptation practices, though maladaptive outcomes can also result.

7.1 Social remittance pathways: Implementation as a process

Using an im/mobilities lens, the results demonstrate how implementation is not always immediate, inevitable, or a single step of transmitting and acceptance or non-acceptance. Rather, we add to what is known about the social remittance pathway by emphasizing the processual facets of implementa-

tion, wherein agents can work on-and-off towards the adoption of a new practice, outside factors can impede, or agents may wait for conditions to change. For this reason, we suggest thinking of the latency of social remittances, ones that may not have been implemented yet due to immobilizing factors but stay with a remitter or receiver to potentially have other effects. This falls in line with research by Drbohlav & Le My (2024), who assert that there is a period of 'evaluation' in transmission and implementation. Vietnamese immigrants in the Czech Republic communicated with contacts back in Vietnam about a range of subjects, stating in some cases that they had learned or were thinking about the transferred remittances but had not fully accepted them. Thus, similar to our research, there is an in-between stage of implemented and non-implemented remittances (Drbohlav & Le My 2024). Moreover, we argue that remittances have effects beyond their intended purpose.

Temporalities also play a role in the assessment of social remittances (Boccagni & Decimo 2013, Levitt & Rajaram 2013), which could be studied further in future research. It may be understood that the time of our interviews was incidentally what made the social remittances latent, non-implemented, or implemented. Following up long-term with those remittances currently in-process could reveal how narrative structures change as remittances come closer to implementation or are ultimately not implemented. Remittances themselves face im/mobilities through time as contexts, policies, and other outside factors influence the remittances and agents themselves. Separating the distinct formation of social remittances through migration or mobilities from other cultural diffusion forces can sometimes be difficult (Pinkow-Läpple & Möllers 2025); a long temporal stage of social remittance transfer or implementation could increase exposure or likelihood to additional influences.

7.2 Im/mobilizing factors and intersectionality

The im/mobilizing factors align with past social remittance literature, particularly regarding how agent characteristics and existing structures influence remittance outcomes (Levitt 1998). Having the resources to implement a new agricultural practice - often requiring money for materials or equipment, as well as the know-how for implementation, aided by access to digital technology - was particularly significant to our case. Similarly, as found by Van Praag (2023), international immigrants living in Belgium had varying awareness levels of climate change in their origin and destination communities based on their educational background, and their abilities to transfer remittances - both financial and social - related to climate adaptation were affected by their socioeconomic situations. Other immobilizing factors like land inheritance resulted from pre-existing circumstances difficult to overcome; as Levitt (1998: 940) wrote, "remittance adoption, as well as evolution, is also path-dependent in that existing normative, cognitive, and structural constraints condition future choices."

Returning to Cresswell's (2010) 'politics of mobility,' the analysis of the im/mobilizing factors of social remittance implementation exposes the inequalities, power relations, and challenges stemming from participants' emplacement in a marginalized rural community. Several participants echoed an awareness of the disparities within Skoura M'Daz and across Morocco, as well as on the international stage. These include income inequality at the individual and community levels, continuing delays by the government in fixing the broken irrigation pipe, and bureaucratic standstill over land titling. Government provision of funds for irrigation system renovations and a resolution for land administration papers for Lfwerem would help residents overcome these barriers.

Intersectional inequalities not only limit the implementation of social remittances of households, but additionally the reach and effectiveness of planned adaptation policies like the Green Morocco and Generation Plans. The irrigation subsidies contributed to the spread of the irrigation systems in places outside Skoura M'Daz, from where our participants found inspiration through their translocal mobilities, creating the conditions for so-called autonomous adaptation. Aligning with our results, Assefa Mersha & Van Laerhoven (2018) emphasize how planned and autonomous adaptation can intertwine and lead to differential outcomes based on variances in household vulnerability, as well as socioeconomic and institutional factors. The Moroccan government's adaptation plans need to include on-the-ground programs or funding that addresses the contexts of localities, particularly land rights, which are seen as integral to developing climate resilience and climate smart agriculture, main goals of the new Green Generation Plan (Thompson & Feld 2020). Globally, climate finance mechanisms could address immobilizing factors and promote enabling factors for social remittance implementation. Investment

can support locally-led adaptation, which may be the product of social remittances fusing with localized inputs and context-specific considerations.

7.3 Social remittances for climate adaptation?

In our study, the exchange of ideas and knowledge through translocal embeddedness and connections can contribute to the spread of new agricultural practices. This is in line with other research on effects of knowledge exchange through mobilities for home gardening and agriculture (Diniega & Sakdapolrak 2025), such as the circulation of farming techniques through farmers' mobilities to regional markets (Rios & Watkins 2015), or the transmission of new ideas for crop types and gardening practices by migrants in new home communities (Strunk & Richardson 2019). Not all of the social remittances we found resulted in autonomous adaptation strategies to climate change but will still effect change on the environment.

In some cases, the implementation of social remittances results in maladaptation, whereby autonomous or planned actions and strategies result in inadvertent outcomes of increased or shifted vulnerability to climate change (Schipper 2020). The most predominant social remittances in our research were irrigation techniques, touted as water-conserving and motivated by decreasing water availability. However, we also found that some participants who installed these irrigation technologies also increased the area of cultivated land, encroached onto public lands, or switched to more water-intensive crops like fruit trees and vegetables, thereby potentially equaling or increasing their prior water consumption. Therefore, social remittance implementation should not be assumed to have positive outcomes and can instead have negative consequences.

These findings are substantiated through other studies on the spread of drip irrigation in Morocco. Project results from the Green Morocco Plan and Green Generation Plan emphasize the positive outcome: "The areas under drip irrigation have increased 3.7 times through the [Green Morocco Plan] (and cover nearly 40 percent of total irrigated area), greatly enhancing resilience to droughts" (The World Bank 2020b: 8). However, there is evidence that conversion to new irrigation systems in Morocco can increase water consumption and groundwater withdrawal (Alonso et al. 2019, Boularbah et al. 2019, Jobbins et al. 2015), also found in irrigation conversion cases worldwide (Grafton et al. 2018, Van Der Kooij et al. 2013, Venot et al. 2014). Intensification of crops and diversification of agriculture increasing water usage has also been documented in Morocco (Molle & Tanouti 2017). For example, crop conversion to watermelons in desert regions has stressed water resources (Bossenbroek et al. 2023, Fico 2024); in September 2022, Morocco ended irrigation subsidies for water-intensive crops: watermelon, avocado, and citrus fruit (Zouiten 2022). Therefore, the policy goals of expanding agriculture while promoting water conservation have often contradicted each other in cases around Morocco, leading to increased water demand in some areas (Molle & Tanouti 2017).

Our case demonstrates the type of maladaptation in autonomous adaptation that can occur under influence from flawed planned adaptation strategies (see Schipper 2020). Broadly speaking, the Green Morocco Plan came under critique for its conflicting focus on economic growth through sustainable agricultural development, leading to unintended effects both for the environment and for the farmers (Elder 2022, Faysse 2015). Mathez & Loftus (2022) argue that the Green Morocco Plan narrative favored a state-defined technical 'modernization' for smallholder agriculture, reducing it to one part of an agribusiness strategy without taking into context long-term rural development. Nevertheless, the current iteration of the Green Generation Plan encourages further implementation of such 'climate smart agriculture' solutions like drip irrigation (The World Bank 2020b). During this phase of program implementation, policymakers should heed the warnings of maladaptation and focus on collaborating with smallholder farmers in pursuit of water conservation strategies.

8 Conclusion

Overall, this research examined the speeds and rhythms of social remittance implementation regarding new agricultural practices in Morocco. The research adds to the social remittance field by assessing implementation as a process with patterns of im/mobilizing factors. We also found that implementation could be a multi-step pathway intersecting with other mobilities and remittances, challenging the idea of a linear formation-transmission-implementation pathway. We proposed the term 'latent social remittances' to describe how remittances can undergird present actions and influence future plans despite non-implementation. Thus, these findings demon-

strate a need to consider temporal dimensions of social remittances. Furthermore, this study did not investigate the intangible social remittances, like values and social capital, though these, too, have lingering effects, albeit more difficult to identify.

The research provided evidence that social remittances can lead to the adoption of agricultural practices in some instances. It also expanded the understanding of migration's impact on the environment beyond financial remittances by focusing explicitly on new ideas and knowledge that are returned to an origin community, contributing to a distinct research gap in the environmental and climate mobilities field regarding social remittances. Some participants enacted practices directly in response to ongoing environmental changes they experienced, thus hinting at the potential of social remittances resulting from translocal mobilities playing a role in climate adaptation, in essence, 'mobilities-as-adaptation'. Nevertheless, flaws within the planned adaptation program for new irrigation techniques, combined with intersectional inequalities that contributed to the pattern of im/mobilizing factors in social remittance implementation, emphasize the importance of investigating power relationships in climate mobilities (Boas et al. 2022). Therefore, we conclude that continued research explicitly centered on social remittances and their effects on the environment through time would help policymakers and other actors identify im/mobilizing factors in formation, transmission, or implementation of social remittances and better understand the situations of those particularly vulnerable to climate change effects.

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