

# ADDRESSING POVERTY IN OLD AGE



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Experiences from “Water Nutrition and Health  
in the Thar”-An Older People led Project





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Experiences from “Water Nutrition and Health in the Thar”-An Older People led Project

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## Author's Note

The 2023 agenda for sustainable development calls for leaving no one behind and for ensuring achievement of SDGs for all, irrespective of their physical, mental, socio-economic, geographic, and topographic vulnerabilities. Older persons form part of this crucial process, and they are viewed as catalysts of development and progress. Despite the role they play, older persons are often confronted with myriad challenges rendering them helpless, neglected, and isolated.

The Thar region, being the most arid and inhospitable desert regions in the world, is a bedrock of community driven and community centric interventions that hold people together against adversities. The third phase of the WNHT project, anchored by GRAVIS in Jodhpur and Barmer districts of Rajasthan, is a step towards empowering older persons in the Thar region to combat challenges they face, through interventions rooted in water, nutrition, and health.

I thank the team at GRAVIS for giving me this opportunity to delve into the lives and challenges that older persons face and overcome in the Thar. Interactions with the team have taken me through a learning curve, embedding valuable experiences. Older persons in the Thar region are valiant, resilient, and exemplary for the strength and wisdom they display, especially in overcoming the harsh and inhospitable conditions imposed on them. Through the interventions undertaken as part of the Water Nutrition and Health in Thar (WNHT) project, GRAVIS has successfully recognised and promoted older persons as the active agents for societal development, to achieve truly transformative, inclusive, and sustainable development outcomes.

**Jyotsna Sripada**

Public Policy Consultant

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## Executive Summary

A thriving spirit and unflinching commitment to achieve and make a difference-these are two hallmark characteristics that evidently appear in every older person in the Thar region. While the region today beams with a sense of hope and revival of natural resources, there continues to be a large section of older persons located in the remotest of regions of the Thar who earnestly seek a ray of hope; a ray that will give older persons dignity, that will acknowledge their contribution and that will uplift them from the deepest trenches of deprivation and dearth. The WNHT project is one such ray of hope for older persons in the Thar region.

This project, anchored by GRAVIS, is currently contributing to the improvement of the health and living conditions of about 4,000 older people and their 24,000 families' members (living in Fifteen villages) within the Thar Desert by focusing on water, nutrition and health aspects; it seeks to demonstrate the effectiveness of an older people led water, nutrition and health model. The project is currently in it's third phase and is being implemented in Baap block, Jodhpur District and Chohtan Block, Barmer District of Rajasthan.

GRAVIS, with the support of it's key stakeholders, has successfully proven that traditional methods of water storage can go a long way in ensuring sustainable, self-sufficient and self-reliant means of water security. Through the WNHT project, several traditional techniques of water storage including taankas (rainwater harvesting storage tanks), khadins (farming dykes) and naadis (community ponds) have been introduced.

As part of the WNHT project, two naadis have been renovated. The water available in these ponds are chemical free and are safe for consumption. This has improved the health of all, especially the older persons, preventing them from contracting life-threatening diseases due to contaminated water.

Eighty older persons, particularly from poor and marginalised sections have been identified as beneficiaries and custodians of khadins in their farmlands. Nineteen khadins have been successfully build and forty are in progress. This intervention has proved to be a very important channel through which older persons can be assured of their food, nutrition and income security as well.

Community Seed Banks (CSBs) have emerged as an important tool for collective action, community owned and community centric means combat the challenges associated with agricultural production in the Thar region. The seed banks are managed by the Village Older People Associations (VOPAs), ensuring that farmers have convenient and timely access to local and sustainable variety of seeds, without having to walk long distances to the market. The project period between April and September 2022 witnessed more than

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thousand kilograms of seeds, including pearl millet, green gram, cluster bean, and sesame, being sourced by 545 farmers, including families of 500 older persons. So far, ten CSBs have been operational, benefitting 2889 farmers in the project area.

Forty older persons were identified and provided with Bio-Sand Water Filters (BSWF). The filters have enabled older persons to consume water in a safe and hygienic manner, pre-empting water-borne diseases. The filters ensure that the taste, odour and appearance of water is appropriate for drinking purposes. The filters have resulted in several short term and long term benefits, impacting the overall health and immunity of older persons and their families.

Further, in addition to training sessions on health, nutrition and self-care, GRAVIS has spearheaded interventions focusing on skill development and resource management for older persons.

The WNHT project has resulted in expanding the canvas to accommodate a larger number of beneficiaries who are acquainted with climate adaptation strategy. The older persons have successfully been transformed into leaders, custodians and decision makers. The WNHT model is certainly emerging as a leading example to reckon with.



## Chapter 1

### Introduction

A thriving spirit and unflinching commitment to achieve and make a difference-these are two hallmark characteristics that evidently appear in every older person in the Thar region. Constantly burdened with uncertainties and unpredictability, older persons in the Thar have, for decades together, learnt to overcome challenges with their indelible spirit and indomitable strength. Armed with traditional knowledge and wisdom, older persons in the Thar have championed several interventions to ensure climate change adaptation and natural resource management.

While the region today beams with a sense of hope and revival of natural resources, there continues to be a large section of older persons located in the remotest of regions of the Thar who earnestly seek a ray of hope; a ray that will give them dignity, that will acknowledge their contribution and that will uplift them from the deepest trenches of deprivation and dearth.

The WNHT project is one such ray of hope for older persons in the Thar region. This project, anchored by GRAVIS, will be to contribute to improving the health and living conditions of about 4,000 older people and their 24,000 families' members (living in 15 villages) within the Thar Desert by focusing on water, nutrition and health aspects; it will also demonstrate the effectiveness of an older people led water, nutrition and health model. The project is currently in its third phase and is currently being implemented in Baap block, Jodhpur District and Chohtan Block, Barmer District of Rajasthan.

The WNHT is a combination of key strategies that are currently being implemented through a time-tested model. All interventions are anchored by community-based institutions that have, over the four decades of operation of GRAVIS, become large network and a lifeline for the most vulnerable and marginalised sections. The project is built on the foundation of older persons associations (OPAs) that play the axial role in empowering older persons in all project areas where GRAVIS is currently operating. This is done along with strengthening village development committees, inter-generational groups and self-help groups, all of which are sensitized and trained to centre their discussions around the needs and challenges faced by priority groups such as older persons and persons with disabilities. In the first year of the third phase of the implementation of this project, the interventions have already begun to make evident changes in the attitudes and approaches of families towards the older persons. This is perhaps the first step towards making older persons as the custodians of decisions associated with their physical, mental, emotional, and financial well-being. Some of the key aspects of this project include water-based storage units using



traditional methods, establishing farming dykes, arid horticultural units and training sessions on various themes self-awareness, health and safety.

This document captures some of the key milestones and impact achieved in this year of the project implementation. The stories and experiences emerging from this study has already cemented the next few steps to be undertaken for a larger and sustaining impact on the lives of older persons. These will be discussed in detail in the next few chapters.



*Older people in Thar*



## Chapter 2

### Poverty among older persons

Poverty is a major threat to the survival and well-being of older persons. With limited physical and emotional capacity to earn or support their families, older persons are often compelled to depend on their children for the smallest of needs. Older persons are often viewed as a burden on the resources available for the family, which is why they are neglected. They are placed at the bottom of the pyramid in terms of distribution of food, water or income for other needs and are compelled to make do with a meagre sum. In a report released by Agewell Foundation in 2021, more than ninety million of the Indian elderly do not have financial security. Although the risks and vulnerabilities increase with age, older persons have no backing in terms of personal savings or additional income security that can enable them to access treatment or care facilities. Since they do not have the strength or ability to contribute or be productive, majority of them are not considered to make critical decisions for the family or themselves. This is particularly evident in resource deficit areas such as the Thar region. Widening social disparities, evolving family structures from traditional to nuclear forms, and an insufficient welfare system are some of the factors that can be attributed to poverty among older persons.

In the Thar region, older persons dwell in constant penury, faced with barriers at multiple levels. It is often observed that the older population is entirely dependent on another member of the family or the community to procure ration, water, medicines, pension, etc. Ensuring the availability of essentials for older persons would mean that the family member must forego an entire day of work and his/her daily wage. In some situations, it involves more number of days, resulting in a significant portion of the family income being lost out on. Owing to this, many members prioritise their needs and neglect the specific needs of the older persons. This results in further deterioration of their health and well-being. Although older persons are equal stakeholders and have the right to access common property resources such as forests, community wells, ponds and rivers, their access is often limited and conditioned upon the willingness of other family members to procure the resources for them. This results in an inordinate delay, influencing timely consumption of essentials such as water, medicines and healthy food. Older persons are trapped in a constant cycle of deprivation, debilitation and despair, not knowing when or how their concerns or needs would be addressed. Furthermore, there is limited information and awareness of issues concerning the development of the older population and are thus left out of the realm of any policies, plans and interventions. Older persons are not recognised for their role or contribution to development and are not considered direct beneficiaries of progress.





This is further worsened due to an unpredictable environment, that is throwing open a Pandora of physical, clinical, mental and emotional factors that debilitate the older population. Climate change has been associated with adverse health outcomes, and older people are disproportionately affected (Gamble et al., 2013; Haq & Gutman, 2014). There is a growing body of evidence that demonstrates that climate change affects the older population much more than the rest of the demographic composition. Older people are more vulnerable to the effects of temperature extremes and have a significantly higher mortality risk in extreme weather events. They are at greater risk because of increased susceptibility to disease, reduced mobility and the effects of stresses on the food and water supply. The COVID-19 pandemic has exacerbated the health risks especially among older persons, highlighting the need to bridge the gap between health services and stakeholders.

By 2027, India, the second most populated country in the world, will likely surpass China as the world's most populated country by adding around 273 million people to its existing population, according to a report by the United Nations, released in 2019. Accordingly, the elderly population of India would also increase over the period – from 138 million in 2021 to 194 million in 2031. The unsettling pace at which climate change is occurring and the percentage of older persons in the population is increasing, compels us to consider sustainable solutions that can facilitate a healthy, safe and sensitive environment for older persons.



*Water Scarcity in Thar is a major challenge*



On the other hand, it is imperative to reflect on the fact that older persons are custodians of traditional practices that are relevant for climate change adaptation and natural resource management. Older persons possess a significant amount of expertise in deploying traditional methods of land preparation, crop production, crop protection and soil maintenance. These traditional practices have been instrumental in ensuring that the farmers and the community have reaped benefits, despite depleting resources. Some of the interventions such as traditional rainwater harvesting techniques, moisture conservation, seed management and utility of crops have emerged from the knowledge and rich experiences narrated by older persons.

GRAVIS has been instrumental in identifying and facilitating channels through which the traditional knowledge and wisdom can be disseminated to younger generations. The outcomes of such sessions have been quite fruitful, empowering and equipping several families to successfully adopt techniques for enhanced crop produce, improved food, water, nutrition and income security. This has further improved the status of older persons in the community as they are valued for their rich expertise and knowledge.



## Chapter 3

### Challenges faced by older persons in the Thar region

#### 3.1 Gender disparities

The social, cultural, economic and geographical determinants of survival and progress in the Thar region are deeply driven by the community's ability to adapt to the changing climatic conditions. Climate change has resulted in sporadic and unpredictable rainfall, depleting underground aquifers, surface and sub-surface-based water storage units. The impact of this arduous task of adapting to dynamic and harsh climatic conditions often is more on vulnerable sections including women and older persons. Culturally, the burden of procuring water for drinking and domestic purposes has fallen on women, both young and old. Women are compelled to walk long distances in a desperate search for enough water that can take care of the bare minimum requirements of their household. Globally, the world is seeing increasingly frequent droughts and floods, and women are often in the frontline in respect to the impacts of a changing climate. During drought, the drying up of nearby bodies of water increases the time spent fetching water. Therefore, the additional time spent to carry out this task cuts into the time available to engage in income generating activities, making women more vulnerable (United Nations Development Programme, 2014).

Although women anchor important roles in care taking, cooking, water procurement and farm work, unfortunately, they do not necessarily participate in decision making. They are often not in control of key decisions that impact distribution or management of resources at a household level. Furthermore, women face social, economic and political barriers that limit their coping capacity. They are often poorer, receive less education and are excluded from political, community and household decision-making processes. Such economic and social inequities translate into fewer assets and the means available to women for coping with the negative effects of the drought (United Nations Women Watch, 2009).

Older women are more vulnerable as they have limited physical and emotional strength to cope with disparities, deficits and unequal distribution of resources. Having been forced into drudgery for a major part of their lives, older women are not equal participants in decision making and often do not have control over managing the funds for the house. This deteriorates further when women grow older. With no source of income or financial independence, many such women forego of their basic needs as they shy away from demanding for the same. Long years of drudgery compels older women to battle physical weakness, neurological issues, poor vision, hearing and other psychological issues. This is compounded further because of their limited participation in the formal labour force. Due to childbearing and associated



responsibilities, women's participation in the labour force is often conditioned upon the number of children they bear and the number of years that are dedicated to care taking. Owing to these factors, they also face challenges while receiving long term benefits such as pensions.

Despite the challenges they face, it is imperative to note that older women are custodians of traditional knowledge and wisdom associated with a wide spectrum of themes including health, nutrition, sustainable practices for water storage and agriculture as well. They are equipped with the best skills and capacities to cope with challenging situations that are often thrown as them at different stages of their life. Having recognised their importance in combatting resource deficits, GRAVIS has paved way for several interventions ensuring the empowerment of older women. Older women are part of community centric groups such as intergenerational learning groups (ILGs) that form a crucial bridge for learning, experience sharing, knowledge and information dissemination. Through the ILGs, a common platform has been created, bringing together older women, young women and adolescent girls. The ILG meetings, which are organised atleast once a month, have proved to be an important channel for restoring sustainable practices, rekindling the interests in traditional knowledge and practices, given the limited nature of resources.

### 3.2 Droughts

The Thar region receives anywhere between 100 mm to 500 mm of annual rainfall. The rainfall patterns over the years indicate that there have been several years where it hasn't rained at all. Yet, ironically, 90% of agriculture on this region is rain-fed. Several rivers and ponds have dried up, impacting the flora and fauna in the region. Continuous dry spells have compelled the people of this region to desperately look for alternative means of procuring water for their farms and homes, that are expensive and mostly unsustainable. The impact of these unforgiving conditions is often borne by older persons because of their inability to access resources on their own. Older persons, owing to their limited physical abilities, cannot walk long distances to procure water for the family. Furthermore, they are not viewed as productive individuals who can financially support their families in augmenting the household income. Owing to these factors, the food, water, and other resources are often distributed in a very skewed manner. The older persons are placed at the bottom of the pyramid, compelling to make do with whatever resources are remaining after distribution to the rest of the family. Furthermore, many of them are ill-treated by their own family members and viewed as a burden to the family. Their dependence on family members for necessities such as food, water and medicines, leaves them with little hope of being treated with respect and dignity. Droughts also negatively affect the traditional roles of older people, and perhaps more specifically their social position, as communities and power and support structures are dismantled, leaving older people with less influence and power (Barbalet V et al, 2018).



Severe and ongoing droughts can have significant economic, environmental, agricultural, health, and social consequences. As a result of these, the health risks among older persons amplifies further, leading to morbidity and mortality in many cases. Severe droughts can put older persons at an added risk of heart and lung diseases.

### 3.3 COVID-19

The onset of the COVID-19 pandemic has exacerbated the challenges and barriers for older persons. The pandemic resulted in long term disruption to basic amenities and in a desert region like the Thar, where primary healthcare facilities are barely adequate, located far off, and private medical centres are unaffordable for majority of the persons. The poor and vulnerable population is highly scattered and there exists a huge gap in the delivery of essential services. With age, the health concerns tend to increase due to increasing vulnerability to different types of diseases, disorders, and deficiencies. The older persons in this region are perpetually trapped in a vicious cycle of poverty, malnutrition and disease that cause severe damage to their health and well-being. These are further compounded by the inability to afford appropriate diagnostic services, treatment or even support systems. The Thar region is characteristic of very hostile and inhospitable climatic conditions that make it almost impossible for older persons to cope. In the absence of affordable and accessible health care services, many of those who are in dire need of care and treatment are left with no choice but to inch closer to morbid and debilitating states of being. During COVID-19, older persons were placed under the category of most vulnerable persons and with high risk. Unfortunately, despite being placed under the high-risk category, the support they received was barely sufficient. It is during critical time that GRAVIS stepped up it's efforts to reach out to the most vulnerable and marginalised sections of the society. Reaching out to older persons continues to remain a priority for GRAVIS, even as part of the WNHT project.



*COVID relief for older people*





## Chapter 4

### Interventions transforming the lives of older persons

#### 4.1 Ensuring water security for older persons in the Thar

The Thar region is one of the most inhospitable arid regions in the world. With a population of 30 million people, the Thar Desert is one of the poorest areas of India primarily due to the chronic aridity of the region. Temperatures can soar up to fifty degrees centigrade, mercilessly threatening to deplete the water reserves underground. The debilitating impact this has on the habitants can sometimes compel one to wonder how they even survive in such harsh conditions. Despite the poor access and availability of water across the Thar region, the people here firmly brave against the odds to manage resources and carefully use them where it is required the most. A perpetual crisis situation exists in the area due to the increased impact of both the human and livestock population which continues to put tremendous pressure on land, surface and groundwater resources. The acute problem of water scarcity, particularly the low rate of annual rainfall and subsequent lack of crops grown in the region, have made it difficult for people to develop agricultural land and survive solely off the income it provides (Malik D, 2008). Furthermore, loss of natural watersheds, poor mining practices and large-scale tube-well exploitation for agri-business have continued to destroy the water table, reducing it to alarmingly poor levels, and at a disturbingly fast pace.

The arduous task of fetching water falls solely on young girls, women and sometimes, elderly women as well. Generations of women are often bound by traditional and cultural practices that often dictate what the roles and responsibilities of women should be, irrespective of their preferences, age, needs, physical or mental state of being. Women walk far stretches in a desperate attempt to capture whatever is available and carry pots over their heads that are carefully arranged to ensure that not even a single drop goes waste. Every drop of water in the desert region is precious and often obscure. With an annual rainfall not exceeding 500mm, the residents of Thar find themselves in constant search for water that is good enough for human consumption as well as domestic purposes.

As the age of habitants in the Thar increases, their ability to manage their resources plummets drastically. Older persons are far more vulnerable, yet, equipped with the least amount of support to address such needs. Very often, as observed in the field, the needs of older persons are not prioritised as there is a constant struggle to decide as to whom the scarce resources must be distributed. The distribution of scarce resources is often skewed towards the more productive, younger members of the family as they employ majority part of their strength, energy and time in earning for the family. It is during such circumstances



that the older persons are left in isolation. They are forced to deal with an array of challenges, including poor access to good quantity and quality of water for their personal consumption. Given their limited physical abilities to procure water for themselves or their families, older persons are compelled to make do with whatever is remaining, after the needs of the house are met. The quality of water available in such areas is often saline and unpalatable. There is a lingering risk of contracting water-borne diseases, the impact of which is far worse in the case of older persons owing to their low immunity levels and age-related health complications.

Although water scarcity remains a perpetual challenge in the Thar region, traditional methods of water storage and distribution have proved to be lifelines for the habitants, especially for older persons. GRAVIS, with the support of its key stakeholders has successfully proven that traditional methods of water storage can go a long way in ensuring sustainable, self-sufficient and self-reliant means of water security.

### ***Taankas***

Through the WNHT project, several traditional techniques of water storage including taankas (rainwater harvesting storage tanks), *khadins* (farming dykes) and *naadis* (community ponds) have been introduced.

Taankas are rain water storage units that can capture and store upto 25,000 litres of rain water and can sustain the needs of a family for almost five to six months, catering to drinking, cleaning and bathing purposes. The *taankas* are built at an elevated level of two feet and are also equipped with a fool-proof locking mechanism to ensure that it is safe from any form of infestation. The inlet and outlet channels of the *taankas* are covered with a metal gauze to prevent infestation or blockage due to sand, dirt and insects. These units have been extremely useful in ensuring convenient, uninterrupted access to clean water.

The *taankas* have enabled the habitants, especially the older persons to access water without having to walk for long distances. The storage tanks are often managed by older persons, while their children are away working in the farm or mines. This enables them to feel a sense of satisfaction that they are contributing the management of the household needs, earning them the respect and dignity they deserve in their homes and the community. Several testimonials of older persons who have benefitted from this intervention have communicated that the *taanka* has provided them access to clean drinking water, improving their health and well-being. The *taanka* located just a few metres away from their homes, has enabled older persons to gain a sense of purpose as it contributes not only to the water security of the household, but also is leveraged to support the arid horticultural units (AHUs), which are, again, managed by the older persons themselves.



The identification of beneficiaries of *taankas* is undertaken by the VDCs, in consultation with other committees such as the SHGs, ILGs and OPAs. This community driven process has made a significant impact in terms of ensuring that the most vulnerable persons are prioritised, and that access is facilitated through self-sufficient and sustainable models. Through this collective process, more than sixty older persons have been identified as custodians of the *taankas* in 15 villages. The *taankas* have also provided an opportunity for the residents of the Thar to support with construction and earn a living out of the same. Families can save close to Rs. 1,400-Rs. 1,800, that would have otherwise been directed to sourcing water from private channels such as tankers. The *taankas* have undoubtedly improved the living standard of households, enabling them to lead a more secure, safe and healthy life. This money is not redirected to meeting the essential expenses of older persons, prioritising their water, nutrition and health needs.



*Beneficiary drawing clean water from taanka built near house*





**Table 1- village wise details of *Taanka* beneficiaries :**

Sr. No.	Village Name	# of taanka constructed	# of beneficiaries belongs to SC/ST/OBC/ Minority	# Female beneficiaries out of total	Total family members benefitting
1	Bawdi Barsingha-Gugetmagra	7	5	6	42
2	Manchitiya	1	1	0	7
3	Baap	9	8	6	48
4	Jaitrasar	9	9	4	54
5	Andasar	4	4	3	24
6	Gadana	4	4	3	22
7	Bohranda	3	3	3	25
8	Lumbaniya-sanvragaon	2	2	1	10
9	Mandore-Sindhipura	1	0	1	10
10	Taratara	7	7	5	63
11	Savlore	3	3	2	25
12	Langer-Ranwa	2	1	2	17
13	Aakoda	11	7	10	104
14	Sujanagar	9	9	7	86
15	Undkha	8	7	6	77
<b>Total</b>		<b>80</b>	<b>70</b>	<b>59</b>	<b>614</b>

**Table 2- village wise details of *Beri* (percolation wells) beneficiaries :**

Sr. No.	Village Name	# of Beri (percolation wells) constructed	# of beneficiaries belongs to SC/ST/OBC/ Minority	# Female beneficiaries out of total	Total family members benefitting
1	Gadna-Kishneri	2	2	2	15
3	Baap	1	1	1	7
4	Taratara	1	1	1	9
5	Undkha	1	0	0	9
6	Aakoda	1	0	1	8
<b>Total</b>		<b>6</b>	<b>4</b>	<b>5</b>	<b>48</b>



## ***Naadis***

Water security is further augmented through renovation of community ponds, that are also referred to as *naadis*. These are one of the most common methods of traditional rainwater harvesting and are found in almost all villages across the Thar region. Naadis are surface based rainwater harvesting structures that can hold anywhere between 700 m<sup>3</sup> and 40,000 m<sup>3</sup> of water. The community, led by several committees such as the VDCs, OPAs, Self Help Groups (SHGs) and ILGs, are entrusted with the responsibility of ensuring that water is available to all, irrespective of their socio-economic or religious background. Access to *naadis* is facilitated through a commonly agreed set of rules that prevent discrimination or deprivation of access and usage.

As part of the WNHT project, three *naadis* have been renovated, serving 1500 families and 1200 livestock. The water available in these ponds are chemical free and are safe for consumption. This has improved the health of all, especially the older persons, preventing them from contracting life-threatening diseases due to contaminated water.



*Naadi (community pond) restored in the Thar region*



## **4.2 Khadins/farming dykes**

More than 80% of the population in the Thar region depends on rain-fed agriculture for survival. The viability of agriculture as a profitable mode of engagement is solely dependent on the amount of rainfall in the region as major sources of water for the purposes of agriculture and livestock such as ground water tables, canals and private sources that are either unavailable, insufficient or extremely expensive. In such circumstances, it becomes extremely important to devise ways through which the limited amount of resources available can be used judiciously, sustainably and with least maintenance involved. Given the wide spectrum of challenges associated with climate change, poor and unpredictable rainfall, severe and high temperatures, there is a compelling need to ensure optimal usage of rainwater and moisture to propel crop growth. One of the most successful techniques adopted by GRAVIS is the construction of farming dykes or khadins.

Khadin is a traditional build that serves as a method of collecting water by building an earthen embankment at the end of an upland plot of land to prevent water run-off. This method was developed by Paliwal Brahmins in Jaisalmer hundreds of years ago, however, it continues to be an effective and sustainable method for improving soil moisture. A khadin is essentially bund is made out of the soil around the land against the slope on the contour line. The rainwater collected inside helps in keeping the soil moisturized producing organic manure and other the minerals inside the khadin. Villagers from the project region are identified and support with the necessary material, skill and technical support to build khadins. Additionally, channels (spillways) were constructed to ensure that excess water, during a continuous spell of rainfall, does not overflow and damage the bund of khadin and crops.

Khadins aid in achieving a multiple objectives of enhancing water, food and nutrition security, while empowering older persons with the ability to take decisions for their families. This traditional form of water conservation has been instrumental in bringing to fore older persons as able leaders and decision makers. As part of the WNHT project, 80 older persons, particularly from poor and marginalised sections have been identified as beneficiaries and custodians of khadins in their farmlands. 80 khadins have been successfully build and 40 are in progress.

A wide range of crops including chickpea, cluster beans, mustard, sesame, millets and melon are grown in farms that are equipped with well-constructed khadins. The produce of such farms has increased multi-fold, improving the farmers, especially older persons, to reap higher profits. Older persons have found confidence in being able to contribute to the family income by managing the agricultural produce and selling the same in the markets. More importantly, the produce from these farms has helped diversify the



basket of nutrients that are consumed by older persons, thereby improving their immunity and overall health. The VOPAs have anchored the process of identification of fifty nine older persons in fifteen villages as who can benefit from the construction of khadins. This intervention has proved to be a very important channel through which older persons can be assured of their food, nutrition and income security.



*Khadin (farming dyke) to capture moisture and retain water to secure farm produce*

**Table 3- village wise details of *khadin* (dyke) beneficiary :**

Sr.No	Village Name	# of khadin construction	#of beneficiaries belongs to SC/ST/OBC/MINORITY	#Female beneficiaries out of total	Total family members benefitting
1	Bawdi Barsingha-Gugetmagra	11	7	7	62
2	Manchitiya	2	0	1	12
3	Baap	7	1	3	43
4	Jaitrasar	2	2	2	13
5	Andasar	5	5	2	32
6	Gadna	2	2	0	11
7	Bohranda	3	3	1	17
8	Lumbaniya-sanwara gaon	3	3	2	16
9	Mandore-Sindhipura	5	4	1	31
10	Taratara	5	5	2	47
11	Langera	11	1	5	109
12	Marudi	14	8	4	129
13	Aakoda	6	1	1	61
14	Sujanagar	2	2	1	18
15	Undkha	2	2	1	17
	Total	80	46	33	618



### **4.3 Achieving food and nutrition security for older persons**

#### **Arid Horticultural Units**

Interventions implemented under the WNHT project are consistently aimed at adopting an integrated approach that enables the community to achieve food, nutrition, water and income security, while addressing the challenges posed in terms of harsh and hostile climatic conditions. Anchored by the community members themselves, all the interventions are designed in a manner such that they empower beneficiaries with the necessary skill, knowledge, information and capacities to efficiently manage the limited resources. Over the last few decades, beneficiaries under various projects undertaken by GRAVIS have transformed them into custodians of resources, managing them in a collective and coherent manner. This collective action, community ownership and community-based management of resources have ensured that the most important needs in terms of food, water, nutrition and income security are achieved for all, especially those belonging to the most vulnerable sections. It is through these measures that the lives of several older persons have been transformed from acute poverty and resource shortages to abundant and efficient resource usage.

Achieving food and nutrition security for all is often a herculean task in regions such as the Thar where agriculture is largely dependent on rainfall. Unpredictable and insufficient spells of rain often jeopardise crop production, which is, in majority of cases, the only source of survival. This is further dependent on the type of land that is available for crop production. 74.9% of the geographical area is cultivable in the Thar region, directly impacting the quantum and quality of production that is necessary to cater to the food and nutritional requirements of the community. Communities living in this region are confronted with several macro and micro-nutrient deficiencies, which often have an irreversible and irreparable impact on the survival and development of the present and future generations.

Given the acute shortage of land and other resources, GRAVIS has introduced a unique concept-Arid Horticultural Units (AHUs) or small sized kitchen gardens. These units are set up in barren lands that are no longer viable for agriculture. The units can accommodate a diverse set of plants, including fruits, vegetables and greens. The AHUs have helped overcome acute shortages of nutritional requirements of older persons, especially with respect to micronutrients such as Vitamin A and Vitamin C. Some of the plants grown in these units such as Drumstick (*Moringa oleifera*), pods, gum have medicinal properties that are especially useful for older persons. Water from taankas is used to water the AHUs, thereby ensuring access to a wide basket of nutrients for all members of the household. In many cases, the AHUs have also emerged as a source of income where the households see excess produce in the markets. A household makes an average





of Rs. 1500 per sale of produce. This additional source of income, in many ways, ensures that the needs of older persons is not compromised upon.

As part of the WNHT project, 80 beneficiaries have been identified and supported with the necessary skills, resources, and capacities to successfully manage their AHUs. GRAVIS has gone a step further to ensure the primary responsibility of managing these units is with the eldest member of the family, so that it enables them to enjoy a sense of purpose, respect, and dignity. The older persons no longer feel like they are burden on their families and in fact, are elated and proud that they can financially support their families and tide along with them through every obstacle that comes their way.



*AHU produce comprising seasonal and local varieties of fruits and vegetables in the project region*

**Table 4 - village wise details of AHUs beneficiaries :**

S. No.	Village Name	# of AHUs established	# of beneficiaries belongs to SC/ ST / OBC /Minority	# Female beneficiaries out of total	Total family member benefitting
1.	Savlore	4	4	4	29
2.	Langer-Marudi	14	5	14	91
3.	Undkha	4	2	4	28
4.	Taratara	7	7	5	47
5.	Sujan Nagar	5	5	5	34
6.	Radwa	3	1	2	19
7.	Aakoda	3	0	1	21
8.	Gadana	2	2	0	11
9.	Anadasar	3	3	3	16
10.	Jetrasar	5	5	2	41
11.	Mandore	4	3	3	17
12.	Bohranada	3	3	3	17
13.	Bawadi-Gugetmagra	6	3	1	32
14.	Lumbaniya-sanwara gaon	4	4	1	22
15.	Manchitiya-Baap	13	8	4	58
	<b>Total</b>	<b>80</b>	<b>55</b>	<b>52</b>	<b>483</b>

#### 4.4 Community Seed Banks

Community seed banks (CSBs) are locally governed and managed, collective-action institutions, whose core function is to maintain seeds for local use. They have been designed to conserve, restore, revitalise, strengthen and improve plant genetic resources for food and agriculture, especially, but not solely, focusing on local varieties of crops (Vernooy et. al 2022). Around the world, CSBs are helping farmers and communities regain, maintain and increase their control over the seeds they use. Many of them have led to stronger cooperation among and between farmers and with others, such as plant breeders, other agricultural researchers, and gene bank managers, who are involved in the conservation and sustainable use of agricultural biodiversity (Vernooy, et.al 2015).

As part of the WNHT project, CSBs have emerged as an important tool for collective action, community owned and community centric means combat the challenges associated with agricultural production in the



Thar region. The seed banks are managed by the VOPAs, ensuring that farmers have convenient and timely access to local and sustainable variety of seeds, without having to walk long distances to the market. The project period between April 2022 to March 2023 witnessed more than 2500 kilograms of seeds, including pearl millet, green gram, cluster bean, and sesame, being sourced by 785 farmers (including 329 women farmers) and including families of more than 500 older persons. So far, ten CSBs have been operational, benefitting 3986 farmers in the project area.



*Community seed banks providing local variety and climate change resistant seeds*

**Table 5 - village wise details of CSBs beneficiaries :**

S. No.	Village Name	# of seed bank	# of beneficiaries belongs to SC/ST/OBC/Minority	# Female beneficiaries out of total	Total family member benefitting
1.	Savlore	1	85	25	412
2.	Aakoda	1	62	18	325
3.	Radwa	1	68	15	365
4.	Undakha	1	66	13	355
5.	Taratara	1	74	22	354
6.	Bawadi	1	86	21	465
7.	Sindhipura	1	75	25	315
8.	Mandore	1	59	35	298
<b>Total</b>		<b>8</b>	<b>575</b>	<b>174</b>	<b>2889</b>





### 4.5 Health interventions

The health indicators of older persons in the Thar are a concern given the multi-dimensional nature of challenges they are confronted with. While social determinants such as poverty and gender inequality push them further into the cycle of deprivation, environmental factors such as climate change and pandemics render them quite helpless. Constant and dynamic changes in the environment have left older persons in a vacuum, with no ray of hope. Furthermore, the need for a sustained source of income has compelled several families in the Thar region to migrate to other regions in search of work, leaving behind the older persons to fend for themselves. In many cases, the productive male population migrate to nearby districts or states in search of livelihoods that can source some form of income to support the family. In such circumstances, women and older persons are compelled to carefully manage the household with limited resources.

With a view to alleviate older persons from deprivation and enable them to protect themselves from harsh and unforgiving climatic conditions, GRAVIS has organised several community-based interventions focusing on health, care and safety. During the period of April to March 2023, 48 training sessions have been organised in Bap village (Jodhpur district) and Chohtan village (Badmer district). The training sessions were facilitated by resource persons who focussed on health conditions faced by older persons and measures to combat the same. Some of the thematics covered as part of these training sessions include consumption of healthy diets made of locally grown and locally available resources, consumption of diverse basket of nutrients including pulses, fruits and vegetables, value of kitchen gardens to ensure unrestricted access and availability of nutrients etc. The sessions provided crucial information on how to manage health problems that emerge in old age such as knee pain, poor vision, poor hearing, and toothache. These training sessions on health and nutrition benefited 1424 persons, including 813 men and 611 women. These sessions disseminated good practices and recommended measures on themes such as personal health and hygiene, drinking water, sanitation and hygiene.



### **Improving quality of water through Bio-Sand Water Filters (BSWF)**

In order to cope with acute water scarcity and poor water quality in the Thar region, GRAVIS has adopted yet another traditional filtration technique-bio-sand water filters, to ensure constant access and availability of clean drinking water. BSWF is an adaptation of the traditional slow sand filter, which has been used for community drinking water treatment for 200 years. These filters provide several benefits including removal of pathogens and suspended solids from water, removal of heavy metals, turbidity, bacteria, viruses and protozoa, reduction in discoloration, odour and unpleasant taste. In challenging climatic and topographic conditions like the Thar, the BSWF are considered and deployed in many households as these are effective, convenient, low-cost and sustainable.



*BSWF installed in one of the beneficiaries' homes*

As part of the WNHT project, 80 older persons were identified and provided with BSWF. The filters have enabled older persons to consume water in a safe and hygienic manner, pre-empting water-borne diseases. The filters ensure that the taste, odour and appearance of water is appropriate for drinking purposes. The filters have resulted in several short term and long term benefits, impacting the overall health and immunity of older persons and their families.

### **4.6 Training sessions for older persons**

In addition to training sessions on health, nutrition and self-care, GRAVIS has spearheaded interventions focusing on skill development and resource management for older persons. The key thematics covered as part of this endeavour include rainwater harvesting, conservation of natural resources and their management, roof top rainwater harvesting, preservation and protection of traditional water resources, solving the water scarcity problems, construction of traditional water harvesting structures, prevention of water borne disease which arises due to consumption of saline water and conversations on ownership of common property resources, role of VOPAs and other CBOs. Four such training sessions have been organised in Bap village (Jodhpur district) and Chohtan village (Badmer district). These training sessions have enhanced the knowledge of older persons reiterated their belief in using traditional methods of water and moisture conservation, promoting crop growth, food, nutrition and income security. Furthermore, older persons have been provided with a sense of confidence to anchor such interventions, making them



feel a sense of purpose and value.

The project has also paved way for several conversations with and amongst older persons, through the VOPA leadership trainings. The awareness about the benefits accruing from several government schemes is quite poor amongst older persons. This is primarily due to illiteracy, information asymmetry and lack of adequate sources through which information can be disseminated. The responsibility often rests on civil society organisations to handhold members of the community to enable them access benefits and entitlements that are due to them. To bridge the gap between services and the beneficiaries, GRAVIS has taken up the crucial responsibility of disseminating information pertaining to schemes such as the pension scheme, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Public Distribution System (PDS) etc to older persons. The processes associated with availing benefits under such schemes is discussed in detail with older persons to enable them procure benefits in a timely manner. The VOPA leadership trainings also encourage older persons to speak about challenges they face daily and problems to these are arrived at in a community driven manner. VOPA meetings strive to align with the principles of GRAVIS, which are community driven, community owned and community centric. These training sessions have resulted in older persons becoming self-reliant and self-sufficient. 525 older persons, including 313 male leaders, and 212 women leaders from 4 different project villages have participated so far.

An important contribution as part of this project is also the proactive involvement of experts and agricultural scientist from Central Arid Zone Research Institute (CAZRI) and Krishi Vigyan Kendra (KVK). Fifty women attended a training session where they were oriented with innovative and scientific farming techniques. They were also encouraged to appreciate the importance of traditional farming techniques, knowledge and wisdom possessed by older persons.



*Women attending workshop anchored by experts from CAZRI and KVK*



The project also witnessed the facilitation of four ageing and development dialogues reaching out to 111 participants, including 46 females and 65 males. The dialogues were centred on key themes such as effects of climate change on the environment, people, natural resources, soil productivity and agriculture production, migration, health and nutrition, etc.

### 4.7 Outreach medical camps and mobile pharmacy:

Medical camps organised as part of this project have emerged as a crucial platform to disseminate information of health problems among older persons, preventive and curative measures. 24 such camps have been organised in the period 2022-2023, enabling early diagnosis, appropriate treatment, and referral services, especially for older persons who require specific line of care and treatment. Additionally, vitamin supplements have been provided to older persons, through a mobile pharmacy to prevent knee pain and long-term illnesses. This has proved to be quite useful especially for older persons who are unable to step out of their homes. The doorstep delivery of medicines has ensured timely access and availability of medicines to older persons. This initiative has benefited over 1,100 older persons.

The team has also developed a small booklet titled “Jeevan ki Sanjh”, which comprises short stories on nutrition and health. This is designed in the local language so that older persons can read to their grandchildren and impart knowledge on the importance of health and nutrition related practices.



*Older Persons receiving treatment at a medical camp organised as part of the WNHT project*





## Chapter 5

### Opportunities and way forward

Through a wide array of projects and priority areas, GRAVIS's efforts to reach out to the most vulnerable and marginalised sections in the Thar region have certainly borne fruit. Today, the lives of more than 24,000 persons have been transformed through the WNHT project. While the impact achieved through a combination of interventions, focussing on the water, nutrition and health needs of older persons is commendable, there are several opportunities that can be leveraged to ensure long term impact and larger coverage of beneficiaries

The project opens several small yet valuable areas where changes can be made. Interactions with stakeholders paved way for some very specific suggestions. These are discussed hereunder:

**Prioritising vulnerable groups:** Discussions with stakeholders pointed towards a focused approach on specific groups such as widows, aged women, and single mothers. Efforts must be undertaken to sensitise government officials towards the apathy of widows, single mothers and aged women. Provisions must be made to understand the challenges they face, and solutions must be developed at a policy level, ensuring that there is smooth flow of benefits including widow pension, skill development, employment etc. The VOPAs can be entrusted with the responsibility of facilitating the flow of funds/benefits to older persons every month.

**Income security for older women:** Older women, after having devoted their entire lifetime to household work and child rearing, have no source of income that would enable them to be financially independent. To avoid this, efforts must be undertaken to provide vocation skill training to younger women, which will provide a sustained source of income, even in old age. Younger women must be encouraged to keep aside a small portion of the income earned as savings. This may be helpful to meet the specific needs of women, even as they grow older. The importance of savings must be discussed as part of the ILG and SHG meetings every month. Additionally, imparting training on financial literacy may go a long way in ensuring that women are empowered to manage the income they earn. This should also form a crucial part of the training sessions organised by GRAVIS.

**Door to door screening for mental health problems:** While medical camps are an important part of this project, screening must also be done for mental health problems among older persons. Counselling sessions may be facilitated to enable older persons to share their emotional and psychological burden with trained professionals.



**Harnessing clean energy :** As a future intervention, GRAVIS may also consider harnessing solar energy in the Thar region to cater to the needs of the population, especially older persons. This may be explored as an option for those engaged in animal husbandry. Solar energy can be leveraged to manage dairy produce through instant milk chillers that are powered by solar panels.

The WNHT project has paved way for several changes in the two districts of Rajasthan. Through this project, older persons have been recognised as important agents of social change, sustaining impacts of locally harnessed methods and wisdom. By placing older persons as forerunners in the battle against climate change, GRAVIS has successfully anchored the transformation process, one step at a time. Older persons are crucial assets to the society and empowering them with the necessary skills, capacities, health and strength can go a long way in ensuring a better life for the current and future generations. It is hoped that through this project, the water, nutrition and health needs of older persons is strengthened further, empowering the current and future generations to lead a life of dignity, abundance and independence.





## Case study

### Nudging towards better agricultural produce through *khadins*

Tan Singh is a marginal farmer who belongs to low socio-economic group from Marudi village, Barmer district. He has a large family of eleven members comprising older persons, children and adults. He also has fourteen animals to look after. His whole family's income is dependent upon agriculture and animal husbandry. Tan Singh's farmland is lop-sided and poses challenges such as soil erosion resulting in poor agricultural production. During the monsoon season, his farm loses all the good quality soil due to rain water run-off. This affects the overall agricultural produce, thereby causing severe damage to the food, nutrition and income security of the family.

“In 2023, a farming dyke (khadin) has been constructed on my farm with the help of GRAVIS. Me and my family members are looking forward to have its positive impact during the kharif season. It will help in capturing the rainwater in my farm and control soil erosion and sustain soil nutrients in farm. It will help me in getting better yield and having green fodder for livestock. It will also help in reducing my mental stress that occur due to less agricultural production irrespective of hard work we do”, says a beaming Tan Singh, whose hopes have been revived.

Tan Singh is positive that the khadin will ensure a sustained crop produce, bringing happiness and relief to his family.





## Case study

### Leveraging traditional methods of water conservation to empower older women

Anadsar is a small village in Jodhpur district and a drought prone area. Hidayato and her family of nine are part of this village and struggle daily to fulfil their water based needs. She belongs to a poor socio-economic background and owns a small farm land. She lives with her husband, son, daughter in-law, and grandchildren. She, along with her family members fetches water from 2-3 km away from their house for their basic household needs. Hidayado and her husband are old and vulnerable due to poor water and sanitation facilities. Majority of the benefits they receive through government schemes are spent on their treatment and medicines. She and her family members take bath in 10-15 days in order to consume less water. Unfortunately, Hidayado recently got diagnosed with stones in her gall bladder. She was forced to mortgage her jewellery to bear the medical expenses.

“One day I attended the village development committee's (VDC) meeting on rain water harvesting measures in our village. It is during this meeting that I spoke about the challenges that me and my family members face due to water scarcity. The members of the VDC asked me to apply for *taanka* construction and later they reviewed my application. GRAVIS supported in construction of *taanka* at my house and this resolved our major problem of water scarcity at home”, says Hidayado.

Now her family is able to utilize time to earn money rather than going 2-3 kms away to fetch water frequently. Her grandchildren are also able to attend their school regularly. She is hopeful that her family will be soon uplifted from the chains of penury with good physical and psychological health and income security for the family.





## Acronyms

AHUs	-	Arid Horticultural Units
CAZRI	-	Central Arid Zone Research Institute
GRAVIS	-	Gramin Vikas Vigyan Samiti
ILGs	-	Inter Learning Groups
KVK	-	Krishi Vigyan Kendra
MGNREGA	-	Mahatma Gandhi National Rural Employment Guarantee Act
SHGs	-	Self Help Groups
VDCs	-	Village Development Committees
VOPAs	-	Village Older People's Associations
WHNT	-	Water Nutrition Health in Thar



## Glossary

**Beris-** A Beri is essentially a pitcher-shaped shallow well that is used to store rainwater

**Khadin-** It is an ingenious construction designed to harvest surface runoff water for agriculture. These are embankments built across the lower hill slopes lying below gravelly uplands.

**Naadis-** Naadis are village ponds, found near Jodhpur in Rajasthan. They are used for storing water from an adjoining natural catchment during the rainy season

**Taanka-** It is a traditional rainwater harvesting technique, common to the Thar desert region of Rajasthan, India. It is meant to provide drinking water and water security for a family or a small group of families

**Swachh Bharat Abhiyan-** Swachh Bharat Mission, Swachh Bharat Abhiyan, or Clean India Mission is a country-wide campaign initiated by the Government of India in 2014 to eliminate open defecation and improve solid waste management



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**GRAVIS is a leading Non-Governmental Organization working in rural India in the States of Rajasthan, Uttarakhand, and the Bundelkhand region of Uttar Pradesh. Since its inception in 1983, GRAVIS has worked with over 75,000 families across 1650 villages reaching a population of over 1.7 million and has established over 4,000 CBOs. GRAVIS believes in participatory community development that blends traditional knowledge and modern sciences and promotes equality.**

**GRAVIS is registered under Rajasthan Societies Registration Act and under section 80 (G) and 12A of IT Act, 1961 of Government of India with tax exemption status.**