

THE STORY OF GRAVIS



OBSERVING 25 YEARS OF COMMUNITY EMPOWERMENT



Gravis

The Story of GRAVIS

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Concept & Inspiration

Late L.C. Tyagi

Written by

Hayden Kantor

Contributors

GRAVIS team & The Community of the Thar Desert

Publisher

Gramin Vikas Vigyan Samiti (GRAVIS)

3/458, 3/437, M. M. Colony, Jodhpur 342 008

Rajasthan, INDIA

Phones 91 291 2785 317, 2785 549, 2785 116

Fax 91 291 2785 116

Email gravis@datainfosys.net

www.gravis.org.in

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AUTHOR'S NOTE

I arrived at GRAVIS in July 2005 to begin a ten month Hart Fellowship from Duke University (United States). A few weeks into my stay in Jodhpur, GRAVIS was shocked by the loss of L. C. Tyagi ji, its beloved founder and Director.

It was at that time that I truly came to know what GRAVIS meant. This is not just an organization; it is a community whose members have sustained each other through hardship. The people that work here don't just work here; they belong here. They care about one another and they care for one another. They have dedicated their lives to this work. And that passion is what has made GRAVIS successful.

This project a comprehensive history of GRAVIS' activities in the Thar Desert since its inception, was long a wish of Tyagi ji. It was an honor for me to complete it. I have done so in his memory, with the hope that the information I have compiled will help further his legacy.

There are, unavoidably, certain biases in this report. This book reflects my identity and capacities as a researcher. The stories and information contained within have been collected by a non-Hindi speaker, a Westerner, and a man. Both because of the emphasis of the documents available and the recollections of those I interviewed, recency was inevitably afforded more weight. As the author, I take sole responsibility for any errors that occur within this book.

While circumstances placed some limitations upon me, I hope that I have also brought some advantages to this project. As an outsider, I hoped to bring a fresh perspective on the procedures and practices of this organization. As GRAVIS enters a new phase of its life without its founding father, I believe that this work can serve as an important bridge to the past.

I would like to take a moment to acknowledge all the people who have taken the time assist me with my work. While they are too numerous to thank individually, a special mention must go to Shashi Tyagi. Over the course of several memorable conversations, she provided me with insight into a wide range of topics. Thanks also to Dr. R. P. Dhir for his continued guidance.

In the same vein, Dr. Prakash Tyagi and his colleagues were supportive editors who unfailingly answered my litany of questions and provided me with a wealth of constructive advice. At the same time, I would also like to thank my friend and colleague Shelly Agarwal for her valuable counsel throughout this process and her contributions to several chapters.

Most of all, I am grateful to GRAVIS as an organization for welcoming me into its home and providing me with a chance to contribute in a meaningful way.

Hayden Kantor

LETTER FROM THE SECRETARY

When my husband the late L. C. Tyagi and I founded GRAVIS in 1983 with a few close Gandhian friends, we already had some experience working with the poor in rural areas in Uttar Pradesh, Bihar, and Rajasthan. But when we saw the condition of the people here, we realized that the problems the villagers faced were in fact all interconnected. So we thought that we must begin to work in all sectors for the integrated development of the region. At that time, we began this long journey.

We faced many challenges in the earliest years. There were foot marches and break downs. There was no staff or outside resources. It was only our Gandhian ideology that sustained us through those difficult times. As the organization has grown, we have sought to instill those values in our team and community partners. As we move ahead towards our goal, all our actions will be guided by these same ideals.

Tyagi ji is now no longer with us, but we remain dedicated to the work he began. Although we have made some advances, we believe there is still much to do. Improving the health of the region will be a leading concern for us in the coming years. At the same time, we will continue to work closely with people's organizations, like the Village Development Committees. In doing so, we hope to strengthen village communities so that the people will become empowered to take on their own development challenges.

I thank you for your continued support and look forward to cooperating with you in the future.

Shashi Tyagi

Secretary, GRAVIS

FOREWORD

From modest beginnings, GRAVIS has matured into one of the leading voluntary organizations in Rajasthan. This organization's growth and success are solely due to vision, guidance, and dedication of its mentors, and the painstaking efforts of its field workers. Multi-faceted rural development with a special focus on underprivileged social and economic groups has been the hallmark of GRAVIS' endeavors. These activities required the organization to collaborate with individuals and community groups during planning, implementation, and evaluation stages. In order to serve communities in a widely dispersed geographical area, GRAVIS has developed and maintained an extensive network of field workers, sub-centers, and materials.

This task was made further onerous by the fact that, despite the usual nicety and hospitality, rural societies in this region are traditional, conservative, and acutely stratified along caste and economic considerations. The people struggle to survive in an uncertain environment. They are insecure when it comes to their agricultural livelihood and drinking water needs. Droughts repeatedly plague this bleak and harsh landscape. Hence, the successful administration of a school, construction of a well-maintained *taanka*, or operation of a Food-for-Work program becomes all the more impressive.

As an old associate of GRAVIS, I am struck by the confidence with which field workers trudge to remote *dhanis* without the support of government authorities or local political leaders. This confidence was borne out of the GRAVIS' display of selflessness and sincerity of purpose. Equally pleasant has been the otherwise uncommon sight of a lower caste member or a woman standing up to speak at a village gathering.

Although the organization now holds a well-established position with an enviable reputation amongst both beneficiaries and donors, GRAVIS will face two main challenges in the future. I think the foremost one is keeping its field staff motivated and enthused. The other is making the village institutions it has established in the villages self-sustaining and durable.

In order to take on these challenges, it is important to reflect upon the history and achievements of this organization. This book does just that, presenting a comprehensive account since the earliest years. Despite some inevitable constraints, I do hope that this publication will inspire the current and coming generations of GRAVIS workers and also serve as a resource material for researchers in future.

Dr. R. P. Dhir

Vice Chairperson, GRAVIS

The genesis of GRAVIS

Chapter 1.1

Introduction

Just as a long jeep ride into the desert provides pause for reflection, so too it must be for an organization as it travels down its own path. For the past 24 years, *Gramin Vikas Vigyan Samiti* (GRAVIS) or in English, the Center for People's Science of Rural Development has worked in the Thar Desert for the empowerment of the rural poor. In order to sharpen the collective memory of this institution and plot a course into the future, it is necessary now to look back and tell the story of this organization. The story of its establishment, its growth, and its expansion. The story of its accomplishments, challenges, and goals. The story of its beliefs, activities, and personalities. This is the story of GRAVIS.



Children in the Thar

The story of GRAVIS is the story of ideological consistency and practical responsiveness. Today, GRAVIS is one of the few development agencies working in Rajasthan with a deep-rooted Gandhian philosophy. Throughout its history, GRAVIS has remained faithful to these core beliefs, to the principle of *Sarvodaya*, or "all rising, but the last person first." Throughout its history, GRAVIS' mission has been to bring a voice and essential resources to the most marginalized villagers in the Thar so that they can take control over their affairs. This goal was paramount at GRAVIS' founding, and it is paramount today as well.

While GRAVIS' objective has remained unchanged, this organization also seeks to be responsive to the dynamic and multi-faceted challenges of the Thar. Through innovative and locally based solutions specific to the needs of this desert region, GRAVIS has helped the villagers address these issues themselves. As an organization, GRAVIS exists within this space between its commitment to its underlying inspiration and responsiveness to the communities with which it works.

The story of GRAVIS is the story of holistic planning and targeted relief. The development issues facing the villagers of the Thar are complex and connected: A problem of the water is a problem of

nutrition is a problem of health is a problem of awareness. These development areas cannot be fully extricated from each other; they are undeniably linked. A positive gain in the area of drinking water, for example, can have many ripple effects: It can advance the health of a household by improving sanitation, it can advance nutrition by allowing the family to grow fruits and vegetables, and it can advance educational opportunities by freeing the children from the arduous chore of fetching water so they can attend school. Thus, GRAVIS strives to raise the entire standard of living of its beneficiaries by pursuing a coordinated and complementary set of projects.

While these project areas are all related, GRAVIS also knows that only specific projects with clearly identifiable goals will be able to affect change. Progress happens through small steps and small victories. This is the work of improving life one person at a time, one family at a time, one community at a time. Only an incremental program that strives for measurable goals can achieve the daunting task of development in this harsh region. Thus GRAVIS' work combines focused action with a broader view of the process of development within desert communities.

The story of GRAVIS is the story of action and advocacy. GRAVIS' primary concern is achieving



progress for the villagers themselves, as they define it.

Water is a major challenge in the Thar

Specific projects provide clean drinking water, raise agricultural productivity, build a school, or treat a cataract patient. Village committees are formed to help women, the elderly, youths, and members of the lower castes voice their opinions and assume responsibility for their own affairs.

Directly engaged with the lives of the people,



GRAVIS helps them to implement local solutions to their problems.

Local ideas are important in developing long-term plans

But while the lives of GRAVIS' beneficiaries and their families have improved through these efforts, there are many more villagers suffering from the same problems. Project activities alone are not enough. The challenges of the Thar are too vast to be undertaken by one organization. Thus GRAVIS has brought attention to a situation that the world has for too long ignored. GRAVIS has developed and modified models that can be reproduced throughout the region, collaborated with scientific institutes and partner organizations on research, and produced publications that speak for those who find themselves silenced by poverty. GRAVIS understands that the pursuit of the sustainable development of the region is incomplete unless it combines the dual approach of local action and broader advocacy

The story of GRAVIS is the story of a partnership and leadership. For tied into this dyad of action and advocacy is an ethos that delicately balances

cooperation and bold initiatives. Working in desert communities is a process of listening to the hopes and concerns of the people, participating in their lives, and gaining their trust. Along with the villagers themselves, GRAVIS has helped create an association of implementing partner non-governmental organizations (NGOs) in the various districts of Western Rajasthan. It has also brought together a vast array of supporting agencies in order to better facilitate the sharing of ideas and resources. Every step of the way, GRAVIS has united these diverse groups with scientific institutes, government departments, and social activists. By forging a cohesive network of committed actors, all work together to produce meaningful change in the Thar.

But while collaboration is certainly an underlying principle of this organization, there are many times when GRAVIS has to lead. As a pioneer of development work in this region, GRAVIS has introduced many innovative technologies and

programs to the area. More importantly still, working with marginalized citizens in some of the poorest communities has entrusted this organization with an important responsibility: to call attention to glaring injustices, to speak for those who do not have a voice, and to bring much-needed resources to an area of the country that has been left behind. As GRAVIS' work continues, it will strive for both cooperation and leadership on the pressing issues facing the rural poor.

At its very core, then, development is about bringing people together, tightening social networks, and strengthening communities. It is not just a set of projects, but rather a set of processes. It is not just about digging wells and holding awareness workshops, but rather about finding sustainable solutions to the chronic problems of water scarcity and poor health. It is not just about allocating resources, but rather about endowing local communities in the Thar with the capacities they need to deal with the changing realities of their world. In this way, GRAVIS empowers the villagers

Chapter 1.2

Into the Thar

In a land so fierce and barren, one would not expect to find a culture so rich and compassionate. The Thar is a paradox. The dry, desolate landscape reflects the difficulty of finding nourishment, but one cannot pass through a village without multiple offers of food and water. The brightness of the sun and unrelenting wind make traversing this land seem near impossible, but the few proud trees provide shade and protection to weary travelers. The silence of the desert is nearly all-encompassing, broken only by the rhythmic beating of the *dhol* (drum) and melodious tune of *bansuri* (flute). Plains of sand stretch out endlessly, but the multi-colored outfits of the women and bright turbans of the men dot the landscape. Without a doubt, the lives of villagers living in the Thar are difficult. But this challenge has not reduced the smiles on their faces or diminished the determination in their eyes. Such is the story of the Thar Desert, where the people and the land maintain an intimate, yet extremely fragile relationship like none other in this world.

The Land

The Thar Desert occupies an area of 235,000 square kilometers. It stretches across the Western Rajasthan into neighboring Pakistan. The climate is unforgiving: A scorching summer, chilly winter, dry monsoon season, and dust storms are characteristic of the yearly forecast. While some parts of the country face floods due to the monsoon rains, the thirsty Thar gets rainfall of less than 200 mm; this figure declines to less than 100 mm in the most arid regions of the desert. The meager rainfall makes groundwater reserves hard to replenish, which means groundwater cannot serve as a long-term supply of water for drinking and irrigation purposes. Furthermore, because the groundwater is often saline, assiduous rainwater harvesting techniques provide the best hope for meeting the water needs of the villagers.

Despite the powerful sunshine and desiccating winds, the desert ecosystem is able to support

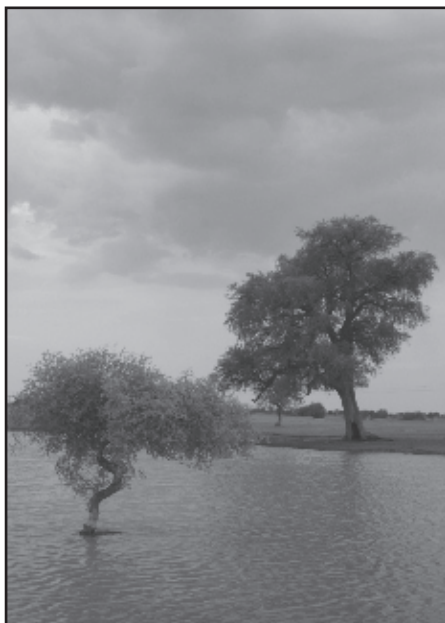


Water fetching drudgery is common in Thar perennial vegetation in most places. The soil, often sandy or loamy, has an incredible ability to conserve moisture. And even the smallest amounts of moisture provide startling life. In fact, the Thar is home to 700 species of grasses, herbs, shrubs, and trees, all of which can survive the frequent droughts and still build up biomass and provide nourishing feed. The most prominent desert plant, the *khejri* tree (*Prosopis cineraria*) commonly known in the region as the *kalpavriksh* (the plant capable of fulfilling all that one wishes) provides nutritious pods often eaten on special occasions, wood used for housing and agricultural tools, and a deep root system that improves crop growth.

The problem is not a lack of strong plant species, but rather the exploitation of the land due to current grazing and farming practices. Today an astonishing 65% of the arid zone is under cultivation. This trend has degraded the natural vegetation cover, intensifying the desertification of the Thar. But, this does not mean that the people of the Thar do not respect or care for the natural vegetation. The common sentiment of the area can be described by the proverb: "*Sar katte, rungta bach, saato sauda jaan.*" ("If a tree can be saved by having one's own head cut, then even this is a favorable deal.")

This compassion for all forms of life has also allowed a large variety of wildlife to thrive in the Thar.

Over 50 species of reptiles, 65 species of mammals, and 300 species of birds live in this region, including the sneaky monitor lizard, the beautiful peacock, and the agile gazelle. Most villages maintain a bird feeding ground at either the community or household level.



The Khejri tree

Another example of the traditional environmentalism of the region is the Bishnoi caste, widely respected for its religious requirements that protect bio-diversity and ensure the care of all living things. History provides several examples of how members of this community fought and even gave their lives to save wildlife. The most glorious example is of Khejarli village: In 1780, 363 community members sacrificed their lives embracing a sacred *khejri* tree that the authorities were threatening to chop down.

The diversity of plants and animals makes the Thar a sight to see. In a land that appears to be so inhospitable, so much life not only merely exists, but flourishes. Over thousands of years, the wildlife has learned to overcome the challenges of the desert and claim their right to life. The climate and the ecosystem of the Thar create a unique environment as they constantly conflict and yet allow the other to peacefully exist.



A peacock in the Thar

The People

The name for the Thar Desert in Marwari, the local dialect of Western Rajasthan, is *Marwar*. The Sanskrit root, *Maru Desa*, means the land of death. And yet more than 22 million people call this land their home, making the Thar the most densely populated desert in the world. The weathered faces of the villagers and bare-bone cows testify to the fact that surviving in the Thar is an ongoing challenge. But the endurance of life here is time-tested.

Human settlement in the Thar dates back to the Stone Age. Yet historians believe the first significant influx of people moved to the region during the waves of invasions from the West, beginning with the raids of Alexander the Great in 325 B.C. Because the desert provides geographically security, people sought refuge here as the invaders continued eastward into India. By 1000 A.D., even the most inhospitable environs were settled and politically organized. Drought and famine challenged the resilience of the people and the culture again and again, but defeat was never a characteristic of this region. Many villages in the Thar are 500-1200 years old, inhabiting sites very near to where their ancestors once lived. Some communities trace their founding to the famous Paliwal Brahmins; other communities recall that their forbearers migrated to their current location from other areas of the desert.

Despite the considerable antiquity of human

settlements, the population of the desert remained thinly spread, growing slowly. In 1820, Colonel



villages.

But the people of the Thar are characterized by more than just their caste affiliations or religious devotions. This is a highly communal culture. In such a difficult environment, the people have learned that interdependence is the pathway to survival. Families are closely bound and friendships born in the daily struggle to overcome adversity. In this desert, villagers afford strangers the most generous hospitality because, as the tradition dictates, "a guest is a god." The people share what they have with one another: It's not uncommon to find brothers sharing a single plate of food, or sisters sharing a *charpai* (woven cot) under a blanket of desert stars.

Perhaps the silence of the desert has seeped into the lives of the villagers. Their unspoken tales of hardship get lost behind the concern in their eyes and wisdom in their voices. These are the people of the Thar: simple, strong, and largely unknown to the world.

The Need

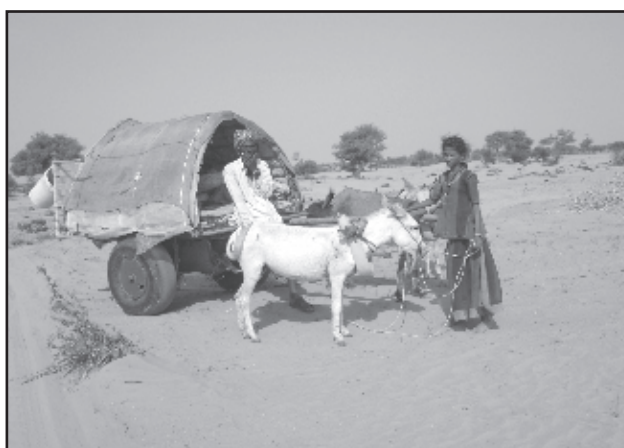
The presence of so much life does not mean that survival is guaranteed in the future. The challenges that the residents of the Thar face today are derived from a confluence of two trends: high rates of population growth for people and animals and the increasing degradation of the ecosystem due to desertification.

Migration during the drought period

As a result, persistent droughts drastically impacted living conditions in recent years. Over the last century, the Thar has witnessed 67 drought years. During a drought year, families are often forced to migrate to nearby cities or towns because they cannot obtain even the most basic necessities, food and water in the villages. If not properly managed, these population movements can have dangerous consequences. The absence of able-bodied men leaves the women and children vulnerable. Furthermore, these migrations stress an already thin urban infrastructure and sometimes facilitate the introduction of diseases into rural communities.

Worse still, unmitigated modernization has scarred

this land. After independence, the primary development strategy for the region focused on massive centralized schemes to deliver water. Yet those plans were never fully implemented. Meanwhile, the introduction of modern methods of agriculture and water distribution caused some of the traditional techniques better suited to Thar to be forgotten. While the government has done its best to help the region and while living standards have generally risen in recent decades, the difficult terrain and distance between settlements make it challenging to ensure that the necessary resources will regularly reach the villagers. At the same time,



the exploitation of ground water sources and the large scale destruction of ground cover have left the land bare and vulnerable to erosion. At present, the land will not be able to sustain this high rate of growth without causing acute suffering to its people.

Because of droughts and watershed degradation, most villagers live a life of water insecurity. Because of remote distances and poor infrastructure, much-needed health facilities and schools are sorely lacking in this region. And because of limited economic opportunities, most villagers must support themselves and their families through rain-fed agriculture and animal husbandry or mine work. In the struggle to survive, many villagers must enter into debt. This reality has taken a heavy toll, straining the traditional clan and community relations of village life.

Indeed the Thar has some of the lowest development

indicators in India. At 60%, literacy in the region remains below the national average; female literacy lags at 10% in many places. The life expectancy is 59 years for women and 58 for men. The average per capita income of the population is estimated around Rs. 7200 (roughly US \$180). High mortality rates for infants, children, and pregnant women point to poor reproductive health and malnutrition in many villagers.

The Thar Desert is one of the victims of uneven growth seen all over India. This severe development crisis demands the attention of government officials and development practitioners before the story of this region gets buried under a proverbial layer of sand. □

Finding the Hidden Path

The harsh landscape of the Thar makes the travel necessary for development work quite difficult. The desert does not like to cooperate. The distances are great, the heat is unrelenting, the infrastructure inadequate. So over the course of GRAVIS' lifetime, but especially in the earliest years, there were many inconveniences. The founders often walked long distances to meet with villagers. When they were fortunate enough to travel by jeep, the terrain still produced countless break downs, floods, and a multitude of nights stranded on the side of the road. Indeed, the staff often relied on the hospitality, good-will, and ingenuity of villagers who were always eager to help. Only an unbreakable commitment to their work and to the people of the Thar allowed GRAVIS' founders to overcome such obstacles.

One story in particular demonstrates the unexpected challenges of land and the importance of connecting with the local people. In the mid 1990s, a friend from Switzerland visited GRAVIS. Tyagi ji and Shashi ji were showing the visitor some projects in rural areas. But the driver lost the way in one of the most remote and uninhabited parts of the desert. It was getting late and the guest had a flight to catch in Jodhpur. So the jeep pulled up to an isolated hut. The men hopped down from the jeep and shouted for help. But no one came.

They did not despair, for the Tyagis' experience working in Western Rajasthan had taught them the subtleties of the local customs. If a woman is alone in her house, she might become cautious and thus disposed not to answer the pleas of strange men. So Shashi ji went to the door and explained the situation how the jeep was not stranded, only lost.

The woman came to the door. She knew the way. But the directions she provided were not in street names or kilometers, but local landmarks. This was how she had remembered the path: "Drive until you reach the second *khejri* tree. Then make a left. Go on for three more *khejri* trees. Make a right there. Then you will reach the main highway." The Tyagis followed her advice and the jeep arrived safely in Jodhpur, in time for the flight.

GRAVIS has certainly come a long way from its humble beginnings. A modern communication and transportation system including a fleet of jeeps and field workers equipped with mobile phones, has made development work in these remote locations both easier and more efficient. But despite these changes, GRAVIS has always remained faithful to its roots. It has not forgotten, and never will, the basic principles of working with the local people and valuing their knowledge. Only by continuing to count the *khejris* can GRAVIS forge a path forward.

Chapter 1.3

GRAVIS through the Years

While GRAVIS has won recognition at the state, national, and international levels for its achievements as a non-governmental organization in Rajasthan, it is necessary to step back and look at the story behind such success. Over its history, the organization has grown at a remarkable rate: GRAVIS has worked in more than 850 villages and with more than 60,000 desert families. Yet it hasn't always been this way; it took years of hard work for GRAVIS to reach this level. At the beginning there was nothing: no staff, no infrastructure, no funding. Just a desert of repressive silence and a handful of dedicated people determined to make a difference.

Origins

In 1983, Laxmi Chand Tyagi and Shashi Tyagi founded GRAVIS at Gagadi village, 60 km from the city of Jodhpur. *Gramin Vikas Vigyan Samiti* is registered under the Rajasthan Societies Act, 1958 (Reg. No. 204/1983-4). It is also registered under Foreign Contribution Act (FCRA No. 125610001). Previously referred to as G.V.V.S., today the organization is commonly known by the more familiar acronym GRAVIS.

In the late 1970s, the couple came to Rajasthan from Uttar Pradesh. There they had been active in many of the social movements of the 1960s and 1970s. Working under the leadership of prominent activists like Vinobe Bhave and Jai Prakash Narayan, the two gained a wealth of knowledge that would prepare them for their future endeavors. The Tyagis combined this first-hand experience in activism with their formal qualifications in agriculture and education in order to create an organization that was scientifically sound while remaining responsive to the needs of the people.

While the Tyagis learned much from their work in Uttar Pradesh and Bihar, they wanted to be where the need was more urgent. They believed their efforts would be more valuable to a region that lacked basic resources, such as water. They also wanted to be in an area where very few

development agencies were already present. With this in mind, they moved to the Thar Desert in 1980. After a few years working in the Thar, the Tyagis felt that only through a holistic strategy could this region achieve development.

At the time, several Gandhian organizations existed in Rajasthan. But many of these devoted themselves only to Gandhi's philosophy and not to the practical application of those ideas. The Tyagis envisioned the combination of comprehensive action with the enduring principles Gandhian thought. This was a big step into the unknown: GRAVIS was one of the first grassroots development organizations to enter the Thar. At the same time, GRAVIS also pioneered the pursuit of integrated rural development in the area through a Gandhian approach.

The influence of Mahatma Gandhi on this organization cannot be overstated. The overarching commitment to the principle of *Sarvodaya*, or "all rising, but the last person first," aimed to help the marginalized in society who have been condemned to a cycle of desperate poverty. Closely connected with this ideal is the notion of *Gram Swaraj*, the Gandhian concept of "village self-rule". GRAVIS' programs seek not merely to aid the rural people, but to empower the people to restore the independence, strength, and vitality of their communities.

In this way, GRAVIS has assumed the role of facilitator and catalyst; lasting change would be impossible without the participation of the local people. These activities are need-based and community-driven; they aspire to build the people's confidence as time progresses. This cooperative approach has guided GRAVIS' actions since its inception. Today Gandhi ji's ideas continue to inspire this organization as it takes on the challenges of the Thar.

The passages that follow in this chapter provide an in-depth look at GRAVIS' development as an organization across its history. In order to tell this

story, it is necessary to divide these 22 years into three segments of roughly equal length:

First, a phase of *establishment* occurred from 1983-1990. During this time, GRAVIS began its basic efforts in the Thar and forged ties with local communities.

The second phase of *growth* occurred from 1991-1997. In this era, GRAVIS strengthened its infrastructure and formed links with partners working in the area and beyond.

The third phase of *expansion* occurred from 1998-2005. Here GRAVIS matured into a development organization with a robust network of support. At the same time, it increased the scope of many of its projects and opened up several new initiatives.

Finally, this book examines GRAVIS' current state and outlines the organization's plans for the future. Throughout, this book looks at the characters and stories, ideas and issues that have shaped this organization and this region.

Establishment: 1983-1990

The Tyagis aimed to build an organization from the ground up. Indeed they started with barely any facilities and staff. In a small mud hut with a thatched roof in Gagadi, they began their work. The desert, filled with silence and struggle, majesty and mystery, lay before them. In the beginning, the team consisted of only four people: Roshan Lal and Manic Dada (now deceased) joined the couple on this initial foray. This quartet was then joined a few years later by social activists Rama Shankar Bhai, Ram Iqbal Singh, and Vinod Bhai. This formed the core group that has largely remained at the center of the organization today.

The earliest years were the years of the foot marches. Rather than swooping in from the outside to dictate development practices to the local people, GRAVIS' founders chose to listen. By living with them, by working with them, by eating with them, by traveling with them, by hearing their stories and listening to their hopes and concerns, the Tyagis came to understand the unique needs of the people

living in this area. It was not easy. The family lived without electricity or running water, without a



vehicle or easy access to the resources of the city.

Gagadi center, the first that GRAVIS set up in 1983

Many long nights were spent stranded or lost by the side of the road. This learning process required both humility and hardship, but there were no shortcuts.

Day by day, month by month, year by year, GRAVIS came to know communities, their contour their subtleties, their personalities, and their needs. Living out there, totally reliant on the good will and help of the people, the founders formed friendships with them, celebrated with them, and mourned with them. In this way, GRAVIS slowly earned the trust and respect of people. Thus, during these difficult years, they forged the fundamental philosophy of



GRAVIS founder Late L. C. Tyagi with villagers

this organization, the philosophy that endures today: The basic principle of GRAVIS to remain in direct contact with the community. The idea is to live with the villagers, right there, with them, and practice development. If the staff of this organization doesn't live in these situations, then it can't do community-based work.

Major project activities did not begin right away. Rather, for the first few years the staff focused on forming Village Development Committees, organizing the people to become involved in their own affairs. But GRAVIS did conduct a few programs during this time. One of GRAVIS' earliest activities was to organize opium de-addiction camps. At that time, opium addiction was a scourge that afflicted a large portion of the rural population in the area, sucking away a significant amount of income. In the face of this immediate need, GRAVIS conducted a series of medical camps designed to wean addicted persons off the drug.

In 1987, after four years of experience with these conditions under their belt, GRAVIS began its first externally funded project work. At this point, the Tyagis' broad network of contacts and managerial experience from their work with previous organizations helped to attract supporters. By this time, the organization had matured to some degree. Gagadi Field Center was established with the assistance of the community members and local officials. Partnerships with neighboring villages had grown over several years. And GRAVIS had allied with CAZRI (the Central Arid Zone Research Institute) in Jodhpur to develop a set of technologically sound and environmentally specific rainwater harvesting structures.

With this groundwork in place, GRAVIS began working primarily on water and agricultural issues. These activities included constructing rainwater harvesting systems like *taankas* and *khadins*, deepening existing wells, and focusing on cooperative irrigations schemes. GRAVIS complemented these watershed development efforts with agro-forestry units, community forests, and kitchen gardens. Early on, Tyagi ji's own expertise and GRAVIS' associations with various scientific

bodies led to a great emphasis on the sustainable natural resource management.

At the same time GRAVIS also concentrated on the health and well-being of the Thar's most vulnerable citizens: women and children. Efforts to provide healthcare focused on immunizations, family planning, improving pre- and post-natal care, and establishing crèches for young kids. Along with the crèches, GRAVIS started several primary schools and non-formal education centers; these centers focused on educating students about how to live in their local environment. Activities to empower women included the formation of Self-Help Groups and a variety of income-generating activities. Throughout, awareness sessions sought to engage and mobilize the villagers to take an active roll in all these programs.

At this time, GRAVIS operated only in Jodhpur district and had not yet spread to the other more remote districts of the Thar. The work took place in a concentrated area of 80-100 villages, which was practical considering the logistical and infrastructure challenges of the time. During this first phase, GRAVIS was very much a grassroots organization. There was no formal system or work or office hours; the Tyagis functioned as the only contact point with outside partners. The people lived and worked in the villages, creating a tight, family-like network in which the people relied on each other for all things. Yet as GRAVIS' work progressed, a number of smaller field centers also opened to coordinate the activities in these communities.

Certainly these initial years were also marked by some setbacks. Entering desert communities was a slow process. Because GRAVIS was the first organization to enter the area, collaboration with other grassroots organizations in the Thar was not yet possible; this undoubtedly hampered the progress of the work. GRAVIS was alone in its efforts to build momentum for change. Moreover, the level of awareness and interest of the villagers was much lower twenty years ago than it is today. The willingness to participate in activities was also much lower. The upper castes resented the

intrusion, and responded sometimes violently to GRAVIS' efforts to introduce change. The lower castes, for their part, were reticent because they had not yet seen the results of GRAVIS' interventions. They often tried to avoid conflict with the upper castes because socio-economically they were so weak. So it took several years for these communities to cultivate an outlook that was open to new ideas.

The most egregious example of local resistance was the October 1991 attack on Gagadi Field Center. A group of roughly 100 upper caste youths from the surrounding villages raided and set fire to the facility. All records, official documents, and property were destroyed. Several GRAVIS staff members were injured in the assault. During the same time period, the youths also attacked several of GRAVIS' other sub-centers. It was not the first time that GRAVIS' facilities had been vandalized and property had been destroyed.

This serious attack garnered condemnation from organizations all across the country. The police arrested and prosecuted 56 of the assailants. But Tyagi ji, influenced by Gandhian ideology and its emphasis on forgiveness, decided not to press civil charges. He instead hoped that a show of clemency would help the youths to learn from their mistakes. Although GRAVIS has faced inevitable disputes and confrontations at other times, there has never been another violent episode since that incident.

By the end of 1991, GRAVIS had matured into a respected development organization within Rajasthan. It had achieved remarkable gains in the areas of watershed development, natural resource management, and people's organizations. Better still, GRAVIS had begun to energize the people to continue these efforts. Yet with this devastating attack, the organization faced a major crisis. As outsiders in this area, the safety of the staff and the ability to operate on a daily basis became uncertain. There was a lot of pressure to shut down and leave; indeed more than half the staff decided to leave at the time. But when Tyagi ji and other members saw the condition of the lower caste people, when they saw how in every aspect of their lives they were discriminated against and made to

feel inferior, then they knew they needed to persevere. GRAVIS knew it had more work to do.

Growth: 1991-1997

At this juncture, GRAVIS took some necessary precautions to protect its staff and its possessions from further harm. The Tyagi family and the organization's central administration moved to the city of Jodhpur. For many months business was conducted in one rented room that was always much too crowded. In 1993, GRAVIS moved from that temporary space into its current headquarters in Milk Men Colony, Jodhpur. After completion, this building served not only as GRAVIS' central office, but also as the private residence for some staff members and their families. This meant that the activities of the home and the offices was always intertwined for these families, just as it was when GRAVIS was located at Gagadi. This has been their greatest sacrifice: they have truly lived their work, without any vacations, days away, or time off.

But during this shift to the city and afterwards, the vast majority of the organization has always remained in the desert areas. Slowly, the Gagadi Field Center was rebuilt, links with local communities tightened, and several new field centers and sub-centers were opened. Kalron and Baap Field Centers opened in 1994; GRAVIS expanded them several years later to increase the storing and training capacities of those facilities. Along with a growing set of centers to help allocate resources and engage with the villagers, GRAVIS also began to acquire a fleet of jeeps, motorcycles, and tractors to ease transportation difficulties. Although the roads had improved, travel through the region was still difficult and many field workers continued to make visits by bus, by bicycle, or on foot.

But GRAVIS did much more than merely repair what had been damaged. During this second phase of its history, GRAVIS substantially expanded the scope of its activities. Its reach spread so that by the end of this period, GRAVIS was working in all five districts where the Thar Desert is located. During this time period, GRAVIS began collaborating with an

array of implementing partners in these districts who could best coordinate the projects in these remote settlements. Likewise, GRAVIS began to develop the professional capacity of its administration. This was no longer a purely grassroots organization. Rather, GRAVIS' administration became increasingly formalized, and developing capacity of the staff became an active concern.

The result was an organization better able to interact with an expanding network of supporting partners. These relationships first began in a close, familial way. Visiting each other in their respective countries, the heads of the organizations would exchange stories, share goals, and discuss their plans for development. Over time, the rising standards and professionalism of the development field eventually seeped into these dealings. Yet the warmth that marked these early years has remained a fixture in these relationships. This unique quality, this deeply felt connection, distinguishes GRAVIS and its partners.

While GRAVIS was cultivating new relationships in order to secure funds and raise awareness, an influx of ideas also followed. Two organizations, in particular, were responsible for helping GRAVIS to open up to new ways of thinking: Inter Corp, a Swiss development agency, aided GRAVIS in its articulation of integrated natural resource management of rural areas. Collaborating with Inter Corp helped GRAVIS to construct a framework in which activities like building *taankas* and *khadins* fit into a broader vision of sustainable resource management in the Thar. This strengthened the staff's belief that to act only on the issues of water or agriculture was not enough. The end goal was to ensure a healthier and happier life for the people.

Similarly, in 1993, through a partnership with Voluntary Health Association of India (VHAI), GRAVIS adopted a wide array of health initiatives through the ten year long *Khoj* (search) project. GRAVIS focused on the care of pregnant women, the well-being of elderly populations, and early childhood development as it began a campaign to reverse the shockingly low health indicators of the region. At this time, GRAVIS also became a

founding member of Rajasthan Voluntary Health Trust. Working both on its own and through this new group, GRAVIS took on the difficult task of raising awareness, dispelling erroneous taboos, and embedding a network of Village Health Workers in some of these outlying settlements. Health initiatives became increasingly important at this time, and GRAVIS began to experiment with the best ways to deliver these services to the people.

Along with forays into the area of health, GRAVIS also began to work with the mineworkers of Rajasthan during this second phase. Since the very beginning, GRAVIS saw that migration to the mines and the silicosis that resulted from prolonged labor there was adversely affecting the health of the Thar's residents. After carefully studying the issue, conducting surveys, and speaking with the workers, GRAVIS launched its Mine Labour Protection Campaign (MLPC). As a part of this initial program, GRAVIS hosted two round-table conferences in 1994 one in Jaipur and one in Jodhpur. These events helped to forge an alliance between government agencies, non-governmental organizations, and social servants, bringing the issue into focus and devising a course of action to improve the workers' welfare.

The next year, GRAVIS expanded its efforts by helping to launch its first mineworkers' trade union in Jodhpur. The union began the arduous task of reaching out and organizing the workers. A flurry of awareness camps and public meetings marked



its first months and years. Also early on, the union founded and began operating two schools in the area to provide an alternative to work for the children.

A sandstone mine

Much like GRAVIS' entrance into remote desert communities, it took time and hard work to introduce the union to the people and inform them of the health risks and legal rights relating to work in the mines. But just as the round-table conferences and the associated campaigns initiated a dialogue on the issue in mainstream society, the union spurred a long overdue conversation about their working and living conditions among the workers themselves.

This second phase of work was more generally marked by an increased emphasis on spreading information and branching out to new groups. GRAVIS expanded its assortment of training sessions, workshops, and public events. For women's empowerment, for instance, the number of income-generating units, Self-Help Groups, and rallies all increased during these years. Because GRAVIS' staff had grown, because it had assembled a wide array of implementing partners within Rajasthan and because the stream of funds flowing into the organization had increased, it thus became more feasible in these years to hold such events. Through these demonstrations, knowledge about the organization and its work spread throughout village communities and the state of Rajasthan as a whole.

Expansion 1998-2006

In the third and most recent phase of GRAVIS' history, the substantial maturity of the activities in the field was matched by an equally bold development in the organization's administrative capacities. The founders realized that GRAVIS would be limited in its ability to affect change if they did not adapt to a quickly changing world. So during these years, the human resources of the staff and the organization's partners in the field became

a central concern. By encouraging a nascent youth movement and the continuation of education, this organization has ensured that the work started would remain vibrant well into the future.

Specifically, this influx of youth was led by Dr. Prakash Tyagi, Tyagi ji and Shashi ji's son. He returned to GRAVIS after completing medical school. He was joined by his wife Dr. Vasundhara Tyagi and Dr. Manish Kumar. The trio brought with them extensive medical knowledge that would prove essential as GRAVIS undertook new initiatives in that field. At the same time, many more



young people joined the organization at all levels, opening the door to new ideas and fresh opportunities for leadership. As the energetic younger generation merged with a more experienced core of social activists, this created a group of workers better able to respond to the multi-faceted challenges of the desert.

The center at Kalron

One benefit of these changes was that these well-educated professionals transformed the GRAVIS' administration. A more capable and mature management team produced a more systematic method of keeping records and accounts. The addition of a library onto the main office building in Jodhpur made it easier to store and access information. Computers made it easier to keep track of a project's status. The extension of telecommunications made it easier to stay in touch

with supporting and implementing agencies. In 2000, GRAVIS stepped into the information age when it launched its website (<http://www.gravis.org.in/>). The process of integrating new technology into the organization's daily administrative operations began in these years and continues today.

At the same time that the technological resources and know-how of the administration grew, GRAVIS' facilities in the Thar also expanded. New additions to the three largest field centers increased the organization's capacity to hold training sessions, host guests, and distribute relief. A museum and multi-functional educational center at Kalron and a storage warehouse at Baap changed the way these centers interacted with the surrounding communities. These new wings have helped the organization reach out to new groups in the desert.

While construction continued on the organization's physical structures, GRAVIS also laid the groundwork for change in other ways. During this third phase, an influx of enthusiastic researchers and volunteers produced a variety of reports and pamphlets on the issues on which GRAVIS works. One of the biggest reasons for the big leap in documentation and advocacy efforts was the establishment of the Health, Education, and Development Consortium (HEDCON) in 1999, of which GRAVIS was a founding member. The books published during these years substantially increased GRAVIS' ability to educate the outside world and garner support for its activities in the desert.

Developments on the ground also mirrored these changes in the administration, facilities, and advocacy. The construction of the GRAVIS Hospital in Tinwari in 2001 transformed the way that this organization approaches the problem of healthcare in the Thar. While GRAVIS had established a network of Village Health Workers within communities, these workers were, by definition, ill-equipped to handle most serious medical problems. The construction of the hospital made care accessible and affordable for those

living in distant areas. These efforts focused on eye care, for poor eyesight has long been a plight affecting the desert people, as well as common ailments like TB, malaria, and lung diseases. In this phase, GRAVIS also began its first project to raise awareness and combat the spread of HIV/AIDS into the region

In other areas, GRAVIS modified its projects to make them more responsive to the needs of the people. First, GRAVIS standardized the technical



enhancements on all the rainwater harvesting structures that it builds. Second, as years of consecutive drought ravaged the land, GRAVIS began its Food-for-Work program to employment and distribute drinking water through tractor tankers. Third, working with members from some of the most marginalized communities in the desert, GRAVIS opened primary schools to meet their unique needs.

GRAVIS hospital

Finally, when working with Self-Help Groups and mineworkers, GRAVIS helped the beneficiaries to start a variety of income-generating schemes. By forming cooperatives and securing micro-loans, these individuals had a greater opportunity to earn additional income and free themselves and their families from the burden of poverty.

But in the midst of this period of growth, GRAVIS received some sobering news: In January 2005, Tyagi ji's health suddenly deteriorated. He was

diagnosed with chronic renal (kidney) failure. After a few months spent in a Delhi hospital, Tyagi ji moved to Ahmedabad to attempt a kidney transplant. At the same time, Shashi ji who was by her husband's side during this entire ordeal volunteered to be a kidney donor to a family member of her husband's donor who was also in need. Unfortunately, although Tyagi ji's surgery was initially successful, he contracted an infection after the operation. After a valiant struggle, he passed away a week later on 27 July, 2005. His wife, son, and daughter were by his side during his final moments.

Such a sudden misfortune proved a great loss to GRAVIS. Tyagi ji was a father figure to many both within our organization and beyond it. During the mourning period, hundreds upon hundreds of villagers, field workers, social activists, and friends flocked to Jodhpur, attending the funeral and the memorials that followed. This unexpected loss forced a transition in the organization's leadership: Shashi ji remained GRAVIS' Secretary while Prakash assumed the role of Director.

Although GRAVIS marked Tyagi ji's untimely passing with deep sadness, this organization also honored the daily passion with which he approached his work and his life. During this time, the entire staff repeatedly came together to remember their beloved leader and renew their dedication to his legacy. Just as GRAVIS weathered other periods of hardship in the past, the organization responded to this tragedy with resolve. Project activities already underway and the planning of future endeavors progressed without interruption. For several years, Tyagi ji had assiduously cultivated leadership skills in the younger generation. Indeed during this time the whole organization rose to the challenge, uniting in their pursuit of common goals.

Organizational Structure

One reason for such a seamless and cohesive response to Tyagi ji's death was the multi-tiered organizational structure in place. GRAVIS operates through an interrelated network that includes a Governing Body, Executive Board, an

administrative office in Jodhpur, and a variety of field centers, all of which work directly with the rural communities. The villagers interact with the organization through a variety of community-based organizations, such as Village Development Committees. GRAVIS constantly stresses communication and cooperation, encouraging engagement between all members of the organization. GRAVIS also holds several staff meetings throughout the year where the floor is open to all to express their opinions.



The Secretary is the chief functionary of the organization. The Secretary reports to the Executive Board. The Board is composed of 7-13 members. This varied group includes individuals of all occupations, locations, and genders. They meet several times in a year to supervise GRAVIS' activities, manage the developmental aspects of the organization, and consider prospective projects for the future. Because of the great diversity and experience of its membership, the Board is able to examine a new task from several different angles.

A GRAVIS board meeting

The Executive Board is elected each year by the General Body. This group is composed of approximately 25 members. These include professionals and experts from a wide range of fields: medical professionals, agricultural scientists, hydrologist, soil scientists, horticulturalists, veterinarians, social scientists, economists,

engineers, and educationalists, etc. These individuals have distinguished themselves through many years of work and are deeply committed to the people of the region. In addition to their duties as members of the General Body, they frequently consult with GRAVIS' project staff, providing advice and assisting with decision-making as required. This group approves all prospective budgets, plans, and activities.

While these committees consider the long-range planning of the organization, the Director manages the daily functioning of the organization. The Director reports to both the Secretary and the Executive Board. In order to carry out these tasks, he appoints Program Coordinators who in turn run the projects and supervise the field staff. Field Coordinators, located at each center, also supervise the field staff on a daily basis and manage the activities of each center. GRAVIS also solicits a constant flow of input from workers, coordinators, supporting organizations, and most importantly, the villagers themselves.

GRAVIS administrative headquarters is located in Jodhpur. In 2006, this office moved across the street into a new building with a greatly expanded capacity. This will be a salutary change because the main office serves as a central meeting point for many committees. It also contains the offices of the Director and Program Coordinators, the Accounts Department, and all record-keeping facilities. There are frequent connections between all of these different groups. This sustained engagement is essential to the careful planning and responsiveness necessary to smoothly manage each project.

In the desert, GRAVIS has a number of different field centers. Field centers allow the staff to easily access rural communities, combining with the people to practice development. The three main centers, located at Gagadi, Kalron, and Baap, all serve different areas of the desert. These large buildings contain offices, staff quarters, a community mess, guest rooms, training facilities, and storage warehouses. GRAVIS designed them to meet the specific needs of the area and they serve as important connecting points with the local

communities. Along the same lines, the GRAVIS Hospital at Tinwari also functions as an indispensable field center, drawing villagers from across the region for prevention programs and treatment.

In addition, GRAVIS operates a number of smaller centers. Today GRAVIS has ten field centers spread throughout Jodhpur district. These are located throughout the desert so that the organization can respond effectively to the most remote areas. These centers might be leased buildings, selected so the staff can oversee activities during a particular project. On the other hand, some smaller centers might also be long-standing structures, like the Shekhasar Field Center, which serves an isolated group of villages that might otherwise be overlooked. In this case, the Shekhasar Field Center has become embedded in the community over more than 15 years, its staff intimately participating in the life of the village. Without this station, GRAVIS would have lost a valuable link to the local people.

Because of the vast distances involved and the desire to build the capacities of other local organizations, implementing partners in Barmer, Bikaner, Nagaur, and Jaisalmer districts manage GRAVIS activities in those areas. These organizations include: HEDCON in Jaipur; *Zila Gramin Vikas Sansthan* (ZGVS) from Makrana for mineworkers' entitlements; *Sandesh Sansthan* and *Vasundhara Sewa Samiti* (VSS) in Barmer district; *Kshetriya Gramoththan Samiti* (KGS) in Bikaner district; and *Jan Kaylan and Gram Vikas Sansthan* (JKGVS) in Jaisalmer district.

In all cases, GRAVIS aims to work not only on behalf of but also with the community-based organizations present in the villages. By coordinating activities with government departments, other development agencies, and motivated individuals, GRAVIS has undertaken the difficult yet important task of improving the capacity of community-based organizations to serve and advocate for their own people. In the end, this is the goal that the villagers will become full and equal partners in the process of strengthening their own communities.

As the size of the staff, the annual operating budget,

the scope of work, and the number of beneficiaries reached have all ballooned in recent years, GRAVIS faces the challenge of managing swift change. Indeed GRAVIS today looks like a very different organization from the one that started in Gagadi 24 years ago. As the organization

continued to expand, a few core beliefs have held this organization together. First and foremost, GRAVIS has vigorously adhered to its Gandhian ideals. The main challenge for GRAVIS is to ensure that success augments rather than dilutes the staff's commitment to improving the welfare of the rural

The Secrets to Their Success

poor.

Many times, the staff has been forced to think creatively, drafting new ideas and programs to best serve communities. Relationships have extended beyond the organization itself to a growing and ever-tightening web of partners, both within India and outside the country. Because of GRAVIS' unwavering commitment to its mission and its recently expanded capacity to carry out these activities, it has made a smooth transition from a grassroots beginning to the organization's current role as a regional leader for development issues in the Thar Desert. □

As a dear friend once recounted, anyone who knew Laxmi Chand Tyagi and Shashi Tyagi well considered them to be almost one person. Indeed this partnership has been the bedrock of GRAVIS since the organization's establishment. Their bond sustained this endeavor during the most daunting moments, giving strength and solace to those around them. But even in brighter times, even when garlanded by awards and accolades, the praises never changed them. Tyagi ji and Shashi ji always remained steadfastly focused on serving the rural poor.

In GRAVIS' earliest years, the remote distances, poor infrastructure, and lack of income made life very difficult. This was an organization with a lot of hope but few resources. Rather than flounder, however, the couple turned these circumstances into an advantage. For them, this became an opportunity to live and learn with the villagers. They turned towards the people. On foot marches and on festival days, in the *dhanis* and in the fields, the family became accustomed to the textures of life in these desert settlements. Including their time spent in rural areas working with other organizations before GRAVIS' founding, the couple spent an astounding 15 years living in rural areas with the villagers.

This process required many sacrifices. They started

out with just food and clothes and little else. There was no space for personal luxuries, vacations away from work, or even days off. There was no private space for family matters; their house was also GRAVIS' office. Even when GRAVIS did move to the city after the attack on Gagadi, the family and office still shared the same quarters. Without any separate facilities for the family and without much access to the resources of the city, Tyagi ji and Shashi ji surrendered many of the amenities of a comfortable lifestyle. Their cramped space was also shared with guests and workers. It was a difficult time, but GRAVIS became a stronger and more sensitive organization for having endured it.

The reason for such a challenging endeavor sprung from their deeply-held belief in Gandhian ideology. All around them lay the challenges of the harsh landscape, the discrimination against women and lower caste members, and the poverty of these communities. They knew there had to be another way from this. They found it in Gandhi ji's philosophy: a return to the self-sufficiency of the village community. Instead of relying on distant agencies to solve problems, Tyagi ji and Shashi ji believed that it was critical to engage with the local people. So by bringing the whole community together and by lifting up the most marginalized residents first, GRAVIS began to forge a new vision of village life in the Thar.

Along with these sacrifices, the couple succeeded because of their lengthy experience working on development issues. With little knowledge of the Thar and its challenges present in mainstream society, it wasn't easy at first to mobilize resources. In this effort, their tenure working in other regions of India had aided the couple greatly. From those campaigns, they were able to raise support from a broad network of friends and contacts which they had assembled over the years. These links to social activists throughout the country also helped recruit a cadre of experienced workers to the organization.

In the early years, the Tyagis brought in a cadre of

social activists. Many of these individuals who came because of their close ties remain with the organization today. That continuity, that abiding commitment to the work in the Thar that extends beyond the founders to their most trusted associates, has provided GRAVIS with a constant vitality through the years. Some of these individuals saw the social inequalities and were thus highly motivated by Gandhian ideology. Others saw the creeping environmental destruction in the desert and sought a sustainable alternative. The founders' brilliance was in the successful unification of these two motivations into a single, integrated effort.

Teamwork was GRAVIS' mortar, creating a cohesive response to a complex problem. By building an alliance of scientists and theorists, activists and accountants, the couple ensured that the sum of the organization would become greater than its individual parts. When they worked with this diverse group, there was collaboration in every action. This group remained strong because it valued everyone's knowledge and input: When they required advice on a technical matter, the Tyagis approached the relevant experts with humility. When one program failed to produce the expected result, they did not hesitate to consult with their colleagues or the villagers about the reasons for the setback and how other approaches might prove more successful.

Their management style was always engaging and affable. They trusted in the good will of people and that trust paid dividends. By cultivating GRAVIS' human capital and by providing the staff with significant responsibility, the administration showed faith in its workers. When over the natural course of events it became time for someone to pursue other options, they parted without ill-will. Relationships mattered most. For this was their vision: a respect for the worth of a single individual. Their friends extended beyond the staff to the villagers themselves. As community members organized themselves into committees, they found a voice in their own affairs. And the Tyagis listened: In meetings where both professionals and villagers were present, they always took care to ask everyone's opinions about proposed projects.



Yet while their faith in Gandhi ji's ideas and extensive background in social activism undoubtedly aided GRAVIS' founders in their efforts, the Tyagis would not have achieved such prolific success if it wasn't for their personal approach. The founders believed that development work would be impossible without an understanding of lives of villagers. GRAVIS' work has been based on the premise that sustained engagement with rural communities isn't merely a bonus or a catchphrase; this connection is an obligation and a way of life. Through their personal devotion, they demonstrated their commitment and earned the trust of the people.

L.C. and Shashi Tyagi

Here it becomes appropriate to examine the two personalities individually: Tyagi ji was a charismatic man, a maestro of public relations. Unfailingly patient by nature, he approached each person he met with the same polite respectful demeanor, regardless of his or her position in society. With his humor, warmth, and gentleness, Tyagi ji had a way of bringing people in, making them feel important, and making them believe. He was endowed with the rare quality that inspired others to be better than they presently were, to imagine and then strive toward what they might become.

At the same time, there was a streak of determination running through this man. It came from his Gandhian ideology. Tirelessly pursuing this cause, he took an interest in every detail, every decision. His focus on the sustainable management

of natural resources and the inclusion of every person in the process of development caused Tyagi ji to set out to learn everything he could. This attention to detail was coupled by thrift, he realized that wastefulness detracts from society in meaningful ways. His practical nature benefited GRAVIS as an organization because he always insisted on the sound maintenance on GRAVIS' fiscal resources and records.

Shashi ji, on the other hand, complemented Tyagi ji's gentleness with a steely strength. Practical and down to Earth at work, she brought discipline to the administration. This toughness would prove essential, for the Thar Desert is not an easy place for a woman to work. Yet Shashi ji persevered as pioneer. She led by example, showing the villagers

that a woman could stand up and speak on her own behalf. This example made a great impact on the villagers. Today many community leaders cite her fortitude as the reason for change in their own communities.

Her staunch resolve was matched by a generosity of spirit which the villagers themselves could easily understand. The desire to help the suffering and poor transcended working hours. Whenever she met someone who faced some difficult circumstances, she would do everything in her power to help. This caring nature helped improve the circumstances of many unfortunate people she encountered. Many found work in the organization, where they learned new skills, demonstrated their loyalty, and over the years

2

GRAVIS programs over the years

Chapter 2.1

People's Organizations

In order for a community to realize the vision of village self-reliance, the local people must assume an active role in their own development. GRAVIS understands this and therefore works closely with the villagers in the Thar by forming community-based people's organizations. These groups are involved with each phase of a project: planning, implementation, monitoring, and maintenance. But in a larger sense, these people's committees serve as a forum where the people can come together and express their views. Many people in this region, particularly women and members of the lower castes, are extremely marginalized at the local level. So as they work together to discuss their problems and develop solutions, the people forge a new sense of community.



A village level meeting

The Need

In many communities in the Thar, the villagers feel disempowered. Because women and lower caste members have often been shut out of decision-making process, they frequently do not think they are able to take a leading role in their own development. Efforts focused on community organization allow them to identify the problems in their community and develop solutions. This process takes time to mature, but it is essential to the future outlook of these societies. It requires cooperation between the non-governmental sector, government agencies, and local communities. Only by sharing results, facilitating interaction, and helping to bridge the divide that has historically split these worlds will these efforts prove successful.

The Government of India spends a large amount of money each year on rural development. But villagers believe that these funds do not always reach their communities. Because many people in the desert did not receive a formal education and remain illiterate, they are ignorant of the development schemes and resources available. Frequently, they have no idea that they may qualify for certain programs. By spreading awareness and empowering community members to speak up, the people of the Thar can devise plans themselves regarding how the development of their village should proceed.

The Response

Since the very beginning of its work in the desert, GRAVIS identified the need to form groups locally that could become accountable for the progress achieved. So as the organization has grown, these people's organizations have grown as well. Some are more than twenty years old and they, like GRAVIS, have a long history of serving their communities. As they have delivered projects and raised awareness, they have created much-needed spaces for dialogue about the issues they face. As a result, the committee members have themselves become agents of social mobilization, developing their capacity to affect change.

Forming a local committee is always the first step that occurs at the start of a new project. By facilitating training camps, awareness programs, and connecting with the government other development organizations, the gain goes beyond the beneficiaries themselves, spreading to the whole village. In recent years, GRAVIS has expanded its people's organizations, establishing other committees to address more specific problems in the community: education, women's empowerment, empowerment of the elderly, and mineworkers' rights. In addition, GRAVIS' first book on community-based people's organizations in the Thar, a study entitled "Sitting on One Carpet", was published in 2006.

But GRAVIS' efforts to organize people go far beyond merely establishing committees. Throughout the year, GRAVIS staff arranges a number of rallies, conferences, training sessions, and public meetings. These aim to break the monotony of life in the desert and bring people together for a common purpose. Camps and workshops focus on the human resources not only of the staff members of the organization but the members of village communities as well.

By imparting knowledge of agriculture techniques, civic rights, or health issues, the villagers are then in a better position to take control of their own destiny. Those who participate gain key leadership skills and enhance their mental, physical, and spiritual

well-being. For this reason, strengthening existing people's organizations and helping to establish new ones will be a leading priority for GRAVIS in the years to come.

Village Development Committees (VDCs)

The main community-based people's organization that GRAVIS establishes is the Village Development Committee. This body serves as the intermediary between GRAVIS and the village. The members are drawn from every community and geographical area of the village. Women compose half the membership of the VDC while those from the lower castes are represented based on demographics of the village. Once a year, the village holds elections for VDC members at the *Gram Sabha* (general village meeting); everyone over the age of 18 is eligible to vote. The *Gram Sabha* also serves a general forum where villagers identify potential beneficiaries living below the poverty line and discuss any pertinent or pressing issues. The VDC then gathers once a month to discuss the progress of the interventions. The *Sarpanch* (village head) sometimes attends these meetings as a resource person. He can help coordinate the VDC's work with that of the village leadership.

After GRAVIS forms the VDC, it entrusts the body with several responsibilities. The committee prioritizes initiatives, selects beneficiaries, and supervises the project once underway, monitoring progress, distributing materials, and allotting wages. Once the project has finished, the VDC assumes the task of sustaining the project activities. In addition, through consultation with the *Gram Sabha*, the VDC collects and apportions the *Gram Kosh* (village fund), using the money to sustain and expand programs underway. But while independent and apolitical, the VDC does not exist alone; instead, it works with other local institutions, such as the *Gram Panchayat* (the local government body), on issues of shared concern. Indeed some VDC members gain confidence in this setting and then their fellow villagers subsequently elect them to serve on the *Panchayat*.

As the VDC matures over time, it begins to take on a larger role in the affairs of the community. One of the larger future goals is for the VDC to begin to



A resource mapping exercise

attract an array of government development schemes to the village, presenting the wishes of the people to the relevant officials and agencies. In order to aid the VDC in these efforts, GRAVIS provides continued support to the members through training sessions, meetings, and exposure visits.

To this end, GRAVIS recently established the *Panchayati Raj* Resource Center in Baap to make women and members of the lower castes better understand their local government. This office provides literacy training and also helps to improve their understanding of their rights and responsibilities as citizens. When elections arrive, the people will then be better informed as they cast their vote. Furthermore, increased participation in the day-to-day activities of the *Panchayat*, a body often dominated by males and members of the upper castes, will help make the institution a more democratic one.

Throughout, the Village Development Committee meetings act as an open space where the people can voice their views, individually and collectively, to the village and to GRAVIS itself. The goal is always to reduce the reliance on outside sources of assistance and transfer power to the people themselves. Development work is a dynamic and ongoing process. The VDC aims to raise the

awareness and participation of the people. This is an important step towards the ideal of a truly independent Indian village.

Village Education Committees (VECs)

In the villages where GRAVIS runs educational projects, the organization has established Village Education Committees. Composed of parents and concerned community members, this body coordinates all matters relating to administration of the schools. The VEC makes decisions about the curriculum, school funds, and necessary supplies. The VEC members frequently confer with the local VDC and government officials when completing their work. For more information on Village Education Committees, please see Part II, Chapter 6 entitled "Education."

Self-Help Groups (SHGs)

After witnessing the social conditions in the region, GRAVIS realized that they could most effectively combat gender-based oppression by creating lively organizations for women. So GRAVIS has formed Self-Help Groups, bodies committed to the socio-economic empowerment of women. These voluntary associations of approximately 10-15 members are open exclusively to women. They provide a safe space for them to meet and share their views. The SHG members pool their money to obtain bank loans, and the group uses this micro-credit to fund income-generating activities. The



SHGs also organize awareness camps, training

A women meeting

sessions, exposure visits, and rallies on issues pertinent to women. For more information on Self-Help Groups, please see Part II, Chapter 7 entitled "Women's Empowerment."

Village Older People's Associations (VOPAs)

In order to restore the respectful position traditionally held by older people in Indian society, a position that has eroded in recent times, GRAVIS has formed Village Older People's Associations. A VOPA functions as a VDC does, except that the members are all over the age of 60. This council is unique because, in the beginning, it includes separate sub-committees for men and women so that the women can enjoy uninhibited participation in the committee's activities. Later, once the members become more comfortable in this setting,



the sub-committees are merged into a single VOPA group meeting. For more information on Village Older People's Associations, please see Part II Chapter 8.

Empowerment of the elderly

Mineworkers' Unions

In order to address the appalling working conditions in the mines of Rajasthan, over the past ten years GRAVIS founded two mineworkers' unions: *Jodhpur Zila Patthar Khan Mazdoor*

Sansthan in Jodhpur and *Zila Gramin Vikas Sansthan* in Makrana. Today, membership has exceeded 4,000 member households and continues to grow. The unions aim to raise public awareness on the issue of mineworkers' rights and induce the government officials and mine owners to respect the laws. At the same time, the unions hold medical camps for the workers, open schools near the mines, start Self-Help Groups for the women, and file lawsuits so that sick workers can receive compensation. For more information on mineworkers' unions, please see Part II, Chapter 9 entitled "Mineworkers' Entitlements."

Self reliance and sustainability

The true realization of self-reliance for a desert village is for it to achieve both internal and external independence. GRAVIS recognizes that as an organization it possesses finite resources. So it tries to help villages resist falling into a cycle of dependency and rather assume a prominent role in their own development. This means helping the people's organizations it establishes to reach outside of their village and make the best use of the resources available.

For VDCs, this means attracting government development schemes. For SHGs, this means procuring bank loans instead of turning to high interest moneylenders. For VECs, this means linking with the government's education department. And for the mineworkers' unions, this means accessing government health boards that have been established for their welfare.

GRAVIS believes that if the development work started in the Thar is to become truly sustainable, there must be lasting change in the way members of these communities interact with each other. Therefore, the organization takes on the role of a catalyst and leader. GRAVIS can help by providing information, resources, and guidance. But it is up to the villagers to do their own work of transforming their societies. GRAVIS' current challenge is to spread awareness to all villagers and encourage

Forming a Stronger Community

them to become more active participants in their own development. In the process of creating healthy, productive, and self-reliant communities, the villagers also have the opportunity to better understand their environment and themselves. □

For the past 24 years, GRAVIS has worked in Jelu village for the empowerment of the rural poor. The organization's projects there have focused on water security, sustainable agricultural practices, healthcare, and education. But the nexus of these efforts have been Jelu's Village Development Committee. Over the past two decades, this committee has matured from an unknown entity into a leading voice on village affairs. As it has progressed, women and members of the lower caste have found their voices and rose to prominence.

Currently, the VDC is composed of 13 members. Half the members are women while more than three quarters of the members hail from the lower castes. In the committee's leadership, there is a female president and also three lower caste members. The VDC meets once a month and the *Gram Sabha* meets once every three months. But this schedule is flexible. In times of emergency, drought, or whenever a new proposal is introduced, the VDC meets more frequently. Elections for the VDC are held once a year.

For several years, the VDC has collected contributions for its *Gram Kosh* from the households in the village. The amount of this fund is now measured in tens of thousands of rupees. The amount families contribute is not arbitrarily fixed, but rather depends on the economic condition of each household. This fund can then be used in emergency or to provide low interest loans to village residents if sickness, disaster, or fire unexpectedly strikes. Like the contributions, the rules for these loans are not fixed. Rather, members decide on the terms of the loan and repayment schedule on a case-by-case basis.

Because the VDC serves as a liaison between GRAVIS and the villagers, it has assumed responsibility for coordinating many projects. For a *naadi* desilting conducted under the Food-for-Work program, for instance, the VDC members work with the field workers to set up schedules and distribute payment to the workers. Likewise, the VDC collaborates with other community-based organizations in the area. Jelu has ten Self-Help Groups, and many of those members have taken out loans to open small-scale income-generating enterprises. When necessary, the VDC also assists with this process.

Most of all, the Jelu VDC has shown its strength in the community by working with the local *Panchayat* to deliver many government schemes to the village. Indeed the relationships between the committee members and the local officials are very warm. This has helped spread through the village information about government upcoming activities. Together with the *Sarpanch*, the VDC members have organized the completion of a local clinic, a community hall in an outlying *dhani*, the formation



of an agricultural cooperative, and the desilting of a *nala* (waterway) that runs to a neighboring village. The VDC has also successfully lobbied for the construction of two tube wells and seven Ground Level Reserves (GLRs) in the village.

A farm in Jelu village

But the VDC hasn't just waited for government programs to arrive. The members have proactive pursued projects that are important to the people. For instance, they have organized the labor and financing for six kilometers of new road in the village. This makes it easier for children to reach school, patients to reach the hospital, and households to bring in water during droughts. At the same time, the VDC has helped residents construct light posts in strategic areas to improve village safety.

In addition, the VDC has not just limited its efforts to project activities. It has become a well-established social authority in the village, a respected voice for change. This role has partially developed as a byproduct of the VDCs success at bringing projects to the village. But more significantly, this reflects the close ties the VDC members share with their fellow

villagers.

For instance, VDC members have conducted vigorous campaigns to ban opium use and child marriage in the village. They also oppose the use of drugs and alcohol during festival time. Another important development is that they have outlawed the death feast, an enormous gathering that often put the household whose member had just died deep in debt. At the same time, VDC members have encouraged their neighbors to send their children to school and their newborns for vaccinations.

The VDC members in Jelu believe that they have accomplished much in their tenure. But they also believe that they have more to do. They want to continue their rainwater harvesting efforts, construct more community halls, and improve the medical care available in the village. For their part, other villagers in Jelu speak approvingly of the

Chapter 2.2

Water Security

Water: In the desert, this most essential natural resource is most absent. While each year the monsoon drenches most of India, the rains provide just a few precious showers for the residents of the Thar. Water is their constant struggle: how to obtain it, store it, and use it. This capricious supply jeopardizes the villager's health not only when reserves are low, but also whenever high concentrations of minerals and water-borne diseases degrade the quality. Yet water security should not be a luxury of the privileged few but a human right guaranteed for every person and every community. Since its inception, GRAVIS has focused on cooperative action with villagers and partners to implement an integrated watershed program that will be sustainable enough to withstand the harsh droughts that too frequently mar this thirsty land.

The Need

Achieving water security in the desert is difficult. In this region, there is an average rainfall less than 200 mm. With 67 droughts in the past century, the monsoon frequently yields an extraordinarily meager amount, often less than 100 mm. While the exact amount varies from household to household and community to community, it is not unusual for a family to spend more than half its income on procuring water. In many households, women must walk long distances through boiling temperatures each day, several times a day, to obtain water for the family. In many areas, the rapidly falling groundwater supply is often several hundred meters below the surface. Furthermore, these supplies often are saline, containing minerals that cause diseases like fluorosis. This is the harsh reality for millions of villagers.

When GRAVIS appeared on the scene in the early 1980s, the founders immediately noticed the difficulties of this situation. But at the same time, they also saw that the people actually possessed the solutions to the problems that they faced; they only

lacked the resources and organization to implement them. For hundreds of years, people have survived in this harsh climate and topography. They have done so by inventing a set of structures, like the *taanka* (underground tank), *naadi* (village pond), *khadin* (earthen bund), and *beri* (percolation well) that have been proven to help the people withstand the low rainfall in the region. These techniques for diligently harvesting of rainwater allowed a rich culture to flourish in one of the world's most forbidding settings.

Yet modernization during the past century brought unsustainable change: Over-reliance on drinking water tube wells led to mounting operating costs, sinking groundwater levels, and an infrastructure system constantly in disrepair. As a result, time-tested traditional techniques have slowly fallen by the wayside. When that happened, the most marginalized citizens suffered: The poor could not afford to independently maintain and operate these mechanized systems. Women had to transport water from a great distance. Members of the lower caste were often prohibited from using communal sources because they were considered impure. The result was a deepening water crisis.

The Response

GRAVIS saw that a village could only regain its own self-sufficiency and sustainability if it maintained access to water, that most precious and life-giving substance. So in its earliest years, it began to popularize a variety of rainwater harvesting techniques through interventions and demonstrations. Yet at the same time the organization also went further. In its efforts to couple social activism with scientific knowledge and to create a broad alliance to strengthen rainwater harvesting systems, GRAVIS reached out to experts and communities in the area. Working closely with research institutions like the Central Arid Zone Research Institute (CAZRI) and the School of Desert Sciences (SDS) as well as the villagers themselves, GRAVIS developed logical enhancements on the existing design that would maximize the water yielded.

These enhancements provided a great deal of benefit to the villagers while remaining straightforward and easy to implement. The changes do not involve complicated machinery, mechanization, or maintenance from outside the village. The local people themselves can construct and maintain the structures, keeping costs low. And because the modifications are simple and easily copied, beneficiaries can teach their neighbors about the changes, thus extending knowledge about rainwater harvesting to the village population as a whole.

Before proceeding to work with the villagers on issues like health or education, it is necessary to ensure that the people have enough water to drink, enough to survive. So the organization begins by conducting baseline surveys and listening to the people so as to assess the needs of the area. Once those investigations have been completed and a proposed project has been approved, GRAVIS works with VDCs and watershed committees to identify the community members most in need of assistance. At that point, construction and training can begin. But this marks only the start of an ongoing collaborative process to deliver self-sufficiency to these communities through revitalized rainwater harvesting techniques.

In 1986, GRAVIS began its first water-related project, building a *taanka* in the village of Shekhasar. During the first phase of its existence, GRAVIS focused mainly on construction of *taankas*; the organization built only a few *naadis* and community tube wells at this time. Right from the start, these structures were built with advice from CAZRI; the experts, however, also have introduced additional changes as the years have progressed. In the second phase, GRAVIS increased its funding from outside sources, expanded the number of villages in which it worked, and added some modifications to the *taankas*. These modifications improved upon the existing technical design, yielding a higher water quality and quantity for the beneficiaries.

In the most recent years, the organization desilted many more *naadis* and also began constructing



A *taanka*

beris in some areas. But *taankas* have remained a fixture throughout GRAVIS history because they are so vital to the region. Along with these structures, GRAVIS also launched its water advocacy efforts. Moreover, another major addition to GRAVIS' repertoire was the drought-relief program: In drought years, GRAVIS distributes drinking water to communities in need and encourages villagers to desilt *naadis* through Food-for-Work programs. These activities ease the burden the villagers face



during a particularly difficult time.

A *naadi*

But GRAVIS has not just limited its activities to building new structures. Although these advances all carefully collect rainwater, this program would not be sustainable without complementary capacity-building efforts. It's *how* GRAVIS precedes that's important: In order to empower



A beri

women, GRAVIS often designates them as the beneficiaries of rainwater structures; this provision increases their status in the community and makes sense culturally because collecting water is often exclusively the responsibility of women. Interventions that provide water security can make a big difference, ending the daily drudgery that so many women face.

These activities have other social benefits as well. In order to foster a sense of ownership among the people and to reduce the overall costs, beneficiaries contribute toward each project in the form of unskilled labor. At the same time, skilled masons from local areas can earn an income by assisting on the more technical aspects of the project. GRAVIS also uses local materials whenever possible in order to stimulate the depressed economy in these areas. Furthermore, follow-up trainings frequently occur in conjunction with the local VDC on topics like structure maintenance and repair, hygienic practices, and improved nutrition. These sessions, and frequent visits by GRAVIS staff, serve to develop not only the capacity of the land but of the people as well.

A *taanka* is an underground water storage tank.

In the Thar, it is the most basic and most sustainable form of rainwater harvesting. Rainwater collects in this tank via a catchment area, which is either on a rooftop, a natural slope of the land, or an artificially prepared grade. The water that accumulates from

just a few showers can last several months. This solution decentralizes water distribution, returning ownership to individual households and *dhanis*. It is also relatively inexpensive; it costs only Rs. 12,000-16,000 (US \$300-400) to construct one *taanka*. Furthermore, this structure requires no mechanized materials and is easy to maintain. There is a reason that villagers in the desert have used *taankas* for hundreds of years.

Most frequently, the catchment area is a natural or man-made slope that forms a circle. This area is paved with *murrum* (locally available stone fragments) to boost yields. The gradient slopes gently toward the structure itself. The water passes through silt catchers, an inlet designed to filter sand and other suspended material from the rainwater. An iron mesh guard covers this inlet to prevent birds and small animals from entering the well. An outlet at the opposite end of the structure allows any excess water to exit the structure and continue to flow down the slope.

The cistern itself has a capacity of up to 20,000 liters. GRAVIS constructs them with a cemented floor and masoned walls: these preserve the life and integrity of the structure for several years. Stone slabs reinforced with cement secure the roof of the *taanka*, adding durability. The lid is made of iron and firmly latched to the roof. A lock prevents both the pilfering of water and small children from accidentally falling into the well.

Many households and *dhanis* have a similar cistern, called a *taankli*, but a *taanka* is a superior structure for several reasons. First, because *taanklis* are usually just small storage wells, the household has no method of harvesting any substantial quantity rainwater with an artificial catchment. Second, *taankas* have a larger holding capacity, and this increased size can cut expenses by storing water for a longer duration and reducing the number of costly external trips and purchases. Similarly, the various improvements designed by CAZRI and pioneered by GRAVIS, namely, the prepared catchment, the silt catchers, the iron guards, the secure lid, and so forth, produce a cleaner water supply that's more likely to be free from leakages, contamination, and

water-borne diseases. GRAVIS prides itself on the fact that each *taanka* it builds is as sound as possible providing water for the beneficiaries for many years.

A *naadi* is a traditional man-made village pond.

While a *taanka* can serve only a few households, a *naadi* benefits the entire community collectively. All villagers have access to this source. Women often come to the *naadi* to draw water; other families can fill up a camel cart and replenish their *taankas* when it runs dry. *Naadis* also supply drinking water for livestock; pastoralists often bring their flocks to the ponds to drink. Thus *naadis* fulfill several vital needs for village communities in the desert.

Naadis are formed in natural depressions in the land and use an embankment to hold the water. An *aagore* (catchment area) adjacent to the *naadi* collects the rainwater and drains into the pond. The area is often lined with trees so as to prevent the surrounding soil from eroding. These ponds can vary greatly in size; some can hold up to 40,000 cubic meters while *naadis* for smaller villages or *dhanis* can hold 700 cubic meters. A seasonal rainfall of just 100 mm can often fill a medium-sized *naadi* to capacity.

Although *naadis* have existed for centuries in the Thar, the practice has recently become marginalized. GRAVIS supports villagers in their effort to desilt old *naadis* and construct new ones. Often GRAVIS consultants will advise the villagers on site selection and how to construct *beris* in the pond bed so as to maximize the water yielded. These projects occur before the monsoon season through the Food-for-Work programs, and villages gain both a source of income and a repaired rainwater harvesting structure for their community. Because of their collective nature, the structures unify communities to come together and work for their own development. VDCs become highly involved in the maintenance, setting down rules that govern the use of the area. Cutting down nearby trees, bathing in the pond, and soiling the catchment area are all prohibited: All this is done to

Beris ensure the water quality and the sanctity of the structure.

A *beri* is a small percolation well.

There are two types of *beris*. The first type of *beri* exists in highly arid, sandy areas. They are only suitable in locations that have layers of clay and stone beneath the sand. The basin of the structure is built into the clay and rests above the stone layer. Although the sandy terrain makes these difficult to construct, they can be an invaluable method of amassing and storing water in extremely remote areas.

The second type of *beri* is built into the bed of a *naadi* or *khadin*. This structure draws water from the surrounding underwater reservoir and saves it long after the soil or pond bed has dried out. A single *naadi* can sometimes support several *beris*; some villagers even manage to grow a vegetable crop in the dry bed because of the excess water that has collected. Periodic silt removal is necessary, especially for those *beris* built directly into *naadis*.

Beris range from 2-10 meters in depth. Villagers draw deeply percolated water from the *beri* after the *naadi* has dried out. A raised concrete platform provides access to the well and prevents sand from entering. Although they look like *taankas* from the outside, *beris* do not have a catchment area; water seeps in only through the surrounding clay soil.

Only in the most recent years did GRAVIS begin constructing and desilting *beris*. Indeed the organization learned of this technology from the villagers themselves. They are only suitable for certain locations, where clay lies just beneath the surface. Yet because these structures are an effective way to conserve and utilize rainwater that has collected in the ground, they will remain an important piece of GRAVIS' rainwater harvesting repertoire in the future.

Drinking Water Tube Wells

Traditional methods are the most sustainable means of maintaining a water supply in the Thar. During

severe droughts, however, these techniques can fail while the cost of bringing in outside water becomes prohibitively expensive. The construction of drinking water tube wells in selected areas provides a viable alternative to this problem. These structures reduce the cost involved with procuring water for the local residents, particularly members of the lower castes.

Still, GRAVIS has been reluctant to build tube wells because the pumps require outside electricity and the mechanized parts must be maintained by outside engineers. Worse still, underground aquifers have only finite amounts of water and little change of being recharged. Yet because having a source of water is so essential to the survival of remote villages, GRAVIS has worked with community institutions (such as the VDC and the local *Panchayat*) to fund five drinking water tube wells over the course of the history of the organization. Villagers use this water only for drinking purposes, and not for irrigation.

Watershed Development

It is not simply enough to build isolated rainwater harvesting structures. Indeed GRAVIS seeks to foster a broader vision for watershed development in the communities in which it works. The structures produced can protect a community from the harshness of a poor monsoon; this is a way, in effect, of drought-proofing a village.

In this effort, soil conservation, agro-forestry, water tables, and groundwater reservoirs are all important factors in the management of a sound watershed. GRAVIS combines this integrated approach to revitalizing community watersheds with participatory methods: Villagers form watershed committees to discuss their needs, possible solutions, and work with GRAVIS' staff to develop a comprehensive proposal. The goal is to promote community ownership and ensure the sustainability of the program after it has ended.

GRAVIS relies on a set of selection criteria in order to target the neediest areas of the Thar. More than 80% of community members must belong to the lower castes (e.g. SC, ST, and OBC). More than

70% must be engaged in agriculture as a primary occupation. Likewise, 70% of households must be small or marginal landholders. No more than 10% must have access to post-monsoon irrigation. And forest cover must not exceed 20% of the designated area. According to these prerequisites, many of the desert communities in which GRAVIS operates are eligible for participation in a watershed management program. Before watershed activities commence in earnest, a one to two year period of pre-watershed activities starts. This time is marked by frequent meetings and capacity-building training sessions between GRAVIS' program coordinators, field workers and the VDC and watershed committee. When the activities begin, GRAVIS often tries to create solutions that will benefit a large number of villagers. For example, expanding catchment areas for *naadis*, restoring



common lands to halt soil erosion, and diverting streams of wastewater away from catchment areas to prevent pollution are all projects that can benefit the community as a whole.

A planning meeting for a watershed

At the same time, rainwater harvesting structures are also built in the most advantageous locations in order to maximize the benefit and capture every available drop. By promoting self-sufficiency, these projects aim to increase fodder stores, recharge depleted groundwater, and improve the general health and sanitation of the community.

Implementation and monitoring occurs jointly with the people themselves. A watershed program can provide a major economic stimulus for the village and the surrounding communities. In drought years, employment opportunities in the villages mean that the people won't have to migrate for work. Often, villagers choose to receive their pay partly in grains so that they will not have to spend money traveling to the market to acquire food. By coming together to labor, the people acquire the structures and capacity to restore the watersheds of their village. In the process, they travel further along the path to a self-reliant village.

Advocacy

Although water activities have deserved primacy, GRAVIS knows that important progress can be made through advocacy as well. Working with its partner HEDCON and a number of other concerned NGOs in Rajasthan, GRAVIS lobbies the state and local governments for policies that will promote equity on water issues. At the same time, GRAVIS has cultivated links with media outlets by keeping them informed of workshops, rallies, and other related developments. Over the course of its history, GRAVIS has held several workshops on water conservation and management in both rural and urban areas with the goal of stimulating a dialogue on the issue. The training manuals prepared for these workshops have become an important resource utilized by government representatives, NGOs, and villages, for fostering learning and disseminating information on water-



"Soch Pani Ki" a quarterly GRAVIS newsletter

related topics.

But like many other challenges of the Thar, one of the biggest needs is simply to educate outsiders about the region. Working with CAZRI and an array of other academic organizations, GRAVIS has produced many research documents and publications on water issues. These books examine not only the problematic effects of water insecurity, but also the methods through which this organization works with villagers to mitigate them. These materials serve to educate both the local people and the general public about the practices best suited to the region. Indeed GRAVIS has written more about water than any other issue, and

When a Taanka is Not Just a Taanka

with good reason. A complete list of books, pamphlets, and periodicals relating to water security appears in the "Publications" chapter of this book. □

A *taanka* is just a small cistern for collecting rainwater. But a *taanka* can have a large impact on the well-being of a household and a community.

A family without a secure source of water must pay large amounts to purchase it; many times, up to half a family's expenditures are spent on buying water. This means that villagers often remain in debt to moneylenders. It also means they have less disposable income to purchase nutritious food, access healthcare services, or to utilize in case of an emergency. If children are required to fetch water each day, this arduous task frequently prevents them from attending school. At the same time, women must also walk long distances, endangering their health and barring them from undertaking income-generating activities.

But the introduction of a *taanka* can change the fate of household. Reduced workloads for women who no longer go off in search of water lead to better health. The money no longer spent buying water is instead used to buy fruits and vegetables, providing a healthier diet. A steady supply of water can also allow a family to bathe and wash their clothes more regularly, leading to sound hygienic practices.

Children who must no longer spend their days carrying water attend schools. Women become empowered because they are the proud owners of a new structure. Their health improves as they are extricated from the drudgery of collecting water for the family. Freedom from the moneylenders means more income is available for savings and investment. They can direct their income to projects that will improve their standard of living.

It's easy to look out at the vast desert and feel that hope is lost, that the task ahead is too large and too daunting. But there is hope. These structures empower households to become self-reliant for their most basic needs, and promote more sustainable



management of a community's natural resources. In

Chapter 2.3

Drought Relief

In the desert, a drought is a slow disaster, methodically ravaging families and communities. Droughts strike not in an instant but over several deadly months. This is the Thar at its most inhospitable. Crops fail. *Naadis* dry up. The price of water soars. Individuals, families, and communities are pushed to the very brink of survival. With 67 drought years in the past century, the villagers know this reality all too well. It is a natural calamity that threatens their very existence. Famines in Rajasthan have been traced back several hundred years, and today the vast majority of the population of Western Rajasthan remains dependent on the monsoon for their livelihood. So drought periods push a normally arduous development outlook to a crisis point, and these are times when GRAVIS' response is most necessary.

The Need

Without assistance during a drought, desert women must often walk many kilometers in search of water. Those able to purchase water must pay roughly Rs. 500 (US \$10) for 5,000 liters of water; this is only enough water to sustain an average family for a few weeks. At the same time, livestock populations, a critical cog in the village economy, may perish from lack of fodder and water. The endemic paucity of water and food inevitably leads to persistent malnutrition. The impact on the health of women, children and elderly, in particular, is severe. Faced



Water sources dry during drought period

with such hardships and with no relief in sight, some have done the unthinkable and committed suicide.

When drinking water expenses consume more than half a household's annual budget, the drought compels many families even entire villages to migrate for water and work. This mass exodus of people and animals is a sight of suffering and sadness, a sight no one would ever wish to see. But the alternatives are few and unappealing. If they do stay, many farmers must often sell land and accumulate debt in order to cope with their reduced income and rising prices. So they go in search of survival. But such movement places them firmly at the margins of society detached outsiders without access to even the most basic resources.

While the Government of India has done its part to help reduce the toll on the region, the area needs more attention during these devastating months. There are simply too many people spread over too great a distance. Resources and infrastructure are scarce and stretched too thin. By offering employment on public projects in drought years, the government has introduced an economic stimulus into these communities. These programs are popular among villagers because it allows them to stay in their villages and earn an income. Yet too often they are left searching for a way to close the gap themselves.

Although GRAVIS has witnessed many droughts in the Thar since it began working in the region, the droughts of 1987-8 and 2002-3 have proven most detrimental to the local people. In both cases, the failed monsoon seasons of the preceding years exacerbated the impact of these droughts. Consecutive droughts lower water tables, weaken the livestock, and deplete family savings. Thankfully, in some years the rains do provide enough for a decent harvest. However, the threat of a drought looms over every monsoon season, and villagers nervously await the rains to discover whether it will be enough. If anything, the Thar's ongoing experience with drought illustrates the need for assiduous harvesting of the rainwater that does fall each year.

The Response

In order to address this pressing problem, GRAVIS has pioneered a comprehensive drought relief program. By swiftly responding to a worsening situation, this organization aims to help the villagers withstand the storms that did not come. By promoting a variety of health activities throughout the year, this organization combats the malnutrition that leaves so many people at risk. And by encouraging watershed management programs, this organization mitigates a drought's effect by harvesting every drop of water available. GRAVIS can't erase the drought or make the missing rains suddenly fall, but it can make it a little easier for the poorest families to sustain themselves during this harsh period.

Since the early 1980s, GRAVIS has sought to help relieve the anguish caused by drought in the Thar. Yet early on, GRAVIS seldom possessed the resources to confront this massive problem. Drought relief activities require coordination between the villagers, development organizations, donors, and the government. The infrastructure available at the beginning made that difficult. So while these activities were an important part of the first phase of GRAVIS' history, the small size of the organization prevented it from making a large difference. Even still, promoting awareness about and the viability of rainwater harvesting techniques was an important piece of the early program.

Food-for-Work

In the 1990s, GRAVIS began to focus its efforts specifically on drought relief. In addition to the continued focus on drought prevention, GRAVIS initiated its drought relief strategy. The Food-for-Work program provides food and fodder to the villagers in exchange for their labor during times of need. The work projects include the restoration of rainwater harvesting structures, such as the desilting of *naadis*. Through Food-for-Work, GRAVIS generates employment for the villagers, providing much-needed immediate relief during the drought season. At the same time, it prepares the land to better withstand future droughts by carefully

managing the watershed so as to maximize the rainwater yields.

To date, Food-for-Work remains one of GRAVIS' most popular programs. When the crops fail, the people have no source of income. Rather than migrating to the mines or far away cities the villagers can now stay in their villages.



A *naadi* under disilting

They do not have to travel (and spend money doing so) to purchase food because GRAVIS provides the option of payment through foodstuffs.

Yet Food-for-Work is not a hand-out. Rather, it brings the villagers together to provide a stronger foundation for their community.

In addition to this employment scheme, GRAVIS also began a program to help the livestock of the region. The local population traditionally has great regard for these creatures because they are so essential to rural people's livelihood. So GRAVIS opened up several fodder banks to provide food for the animals in need. By the late 1990s, GRAVIS had established five fodder centers, benefiting more than 25,000 cattle. At the same time, the Food-for-Work program recorded over 350,000 person-days of employment. These two pieces employment generation and fodder distribution

aided the local people in their quest to weather the drought with dignity.

The drought relief program devised in the mid 1990s became the cornerstone for GRAVIS' activities in the third phase of its history. At this time, the challenges posed by a drought quickly became an emergency. For four consecutive years, from 1999 to 2003, droughts plagued Rajasthan. The impact was felt across the state. Essential resources, like groundwater and stored food, were dangerously depleted. It was a brutal time the suffering still difficult for many villagers to recall. So in response to this ever-worsening crisis, GRAVIS developed a more formalized response to the



Thar's severe condition.

A fodder center in a village

In 2001, GRAVIS constructed a ware house with a



The warehouse in Baap

capacity of 7.5 MT store food commodities to be used for the Food-for-Work program.

This program consists of a range of activities aimed to deliver the help that the villagers themselves most need. Relying on the field workers and the VDCs who best know the *dhanis* and households of these communities, GRAVIS has instituted a more flexible aid regime. Along with employment and fodder, GRAVIS now distributes drinking water via tractor tanker. Reimbursement rates vary based on a family's capabilities and need, although GRAVIS gives out much of this water free of cost. GRAVIS brings this water to the villagers themselves, right in the villages. This is crucial because these efforts target the poorest people, including widows, the handicapped and members of the lower castes. These are the people who are left most vulnerable to the effects of a dry monsoon.

Cattle Camps

Along with the increased emphasis on drinking water, GRAVIS also aims to avoid the death of livestock. These are not just providers of food products, but also capital investments for the villagers. The death of a cow or flock of goats makes it much harder for a family to recover. So in addition to the proliferation of fodder banks, GRAVIS ensures that feed is available from fodder depots at government-subsidized prices. Likewise, another innovation has been the creation of cattle camps. These camps shelter and nurture abandoned animals until they are fully restored to health. At that



Cattle in a pasture

time, they can again provide sustenance to a community that has been sapped of its strength.

HEDCON and GRAVIS remain closely linked, and their staffs collaborate regularly on a number of projects. HEDCON specializes in research, monitoring, and advocacy work. As such, it has facilitated the production of many of GRAVIS' publications, and provided assistance during the documentation process for several projects. To do this, HEDCON researchers often travel to field sites to monitor the progress and recommend changes when necessary. These evaluations are essential because they provide GRAVIS' supporting agencies in India and abroad with current reviews of the projects underway.

Along with these activities, HEDCON has emerged as a leader in advocacy on the challenges of the Thar. The main issues on which HEDCON focuses are mineworkers' entitlements, drought relief, healthcare and water security. With their extensive

Working with HEDCON

network of dedicated partners, the agency can disseminate information efficiently and organize a

Chapter 2.4

Agriculture and Food Security

The people of the Thar rely on the land for their livelihood. For over 80% of the population, agriculture and herding are the primary occupations. As a result, an astonishing 65% of the arid zone is under cultivation. For thousands of years, the residents of this region have endured the dry climate and scanty rainfall to grow crops and raise livestock. Yet today rising populations, falling water tables, accumulating droughts, and an over-reliance on foreign harvesting products and techniques have made subsistence agricultural practices in the Thar an exercise in uncertainty. As a result, a central thrust of GRAVIS' efforts deals with the sustainable management of natural resources. In this way, the villagers will be able to live off the land for years to come.

The Need

Having inhabited this region for centuries, the people of the desert have an intimate relationship with the land. Their decision about what to grow is dependent on a number of different factors, such as the growing season, soil type, and amount of rainfall. The most common crops, however, are *bajra* (pearl millet), *jowar* (coarse millet), *moong* (green gram), *moth* (legume), *guar* (cluster bean), *til* (sesame), and mustard seed. In irrigated areas, farmers also grow wheat, vegetables, chilies, *matira* (desert melon), *jeera* (cumin), and groundnuts. Most farmers consume what they grow and sell the surplus in local markets; the harsh climate makes it difficult for small farmers to grow agricultural products for export. As for livestock, cows, goats, sheep, camels, and water buffaloes are the most common domesticated animals in the region.

Yet it has become increasingly more difficult for the villagers to live today as their ancestors once did. The introduction of modern practices has not solved problems for the local people; it has instead added new obstacles to their work and lives. Commercial seeds, chemical fertilizers, pesticides, complex irrigation techniques once promised to boost yields and profits. But because procuring these items can be difficult and costly, and because the farmers then become dependent on outsider support for their work, modernized agricultural practices have been

a largely unrealized vision. Yet, in many areas, the villagers have turned away from the practices best suited to the desert. At the same time, over-grazing by rising animal populations has decimated the natural grasses and forests. Without adequate safeguards in place, common pasturelands have fallen into disrepair. A delicate balance, one that has lasted for generations, is now being disrupted.

The Response

In response to this growing crisis, GRAVIS has sought to revive the traditional methods of sustainable agriculture in the Thar. Unfortunately, many farmers have forsaken some of the most efficient practices. With the help of CAZRI, GRAVIS actively researched, developed, and improved upon existing farming techniques. With this foundation in place, GRAVIS aimed to return these structures and practices to the local people. Through interventions, trainings, and the distribution of related materials, GRAVIS has helped to create a vision of agriculture in the Thar that is compatible with the challenges posed by this harsh environment. The result for the beneficiaries has been lasting food security, increased income, and a healthier lifestyle.

Since its inception, GRAVIS has focused on a variety of agriculturally related projects. It has built *khadins*, set up kitchen gardens, revitalized pastures, distributed seeds, and promoted agro-forestry in conjunction with a wide variety of funding agencies and of course the local people. In the second phase of its history, enhancements structures like *khadins* became more widespread. At the same time, the organization placed a greater emphasis on training programs: GRAVIS' second demonstration farm was inaugurated at the Kalron Field Center in 1994. (The first demonstration farm was established at the Gagadi Field Center in the earliest years of the organization.) Expanding to this second site increased GRAVIS' ability to bring farmers together and better educate them on these practices.

In the final phase of GRAVIS history, these projects continued to spread. At the same time, GRAVIS sought to link agricultural interventions with other programs, such as watershed management

(constructing check dams to prevent rainwater run-off), drought relief (distributing fodder and feed to livestock), and empowerment of the elderly (distributing milk cows for nutrition). These connections have resulted in a more integrated process of rural development, better addressing the immediate needs of individuals and communities.

Another development that has taken place in the past few years is a proliferation of research papers and publications on agriculture in the Thar. These books and training manuals have recorded the extensive knowledge of the local people and carefully honed practices of this organization. A complete list of books, pamphlets, and periodicals related to agriculture appears in the "Publications" chapter of this book. These documents have helped GRAVIS explain the unique challenges of the region to outsiders and instruct villagers' on the most efficient practices in this environment.

While some of the details or procedures relating to agriculture have surely changed over time, GRAVIS' agricultural work has remained essentially the same. As this organization heads into the future, agriculture and food security will remain a leading priority for the organization.

Khadins

A *khadin* is an earthen bund embankment. It harvests rainwater for agricultural purposes.

This embankment retains rainwater, preventing run-off and allowing moisture to collect in the soil. In this way, water is dispersed across the field. Farmers also plant shrubs and trees along the length of the retaining walls of the embankment. This stops soil erosion and provides firewood to families for cooking. The beneficiaries themselves provide unskilled labor and the masonry work is done by skilled persons. This lowers the cost of the project, allows the villagers to earn an income for their unskilled labor, and promotes a sense of ownership that's essential to the maintenance of the structure.

The *khadin* is an ancient technology indigenous to the Thar Desert. Paliwal Brahmins in the arid Jaisalmer region first developed *khadins* a few hundred years ago. Today the government also builds *khadins*, but those structures tend to be much larger. As a result, they are very costly and the farmers cannot afford to construct them on their

own. GRAVIS builds smaller bunds, typically 1-3 meters high and 250-800 meters in length. These *khadins*, often owned by a group of families, provide equally effective rain-fed irrigation for field



of crops.

A khadin

Because the chance of a drought and inadequate rainfall is so great, it is more sensible to build smaller structures. This minimizes the risk involved for the villagers, who frequently do not have much capital to spare. Furthermore, these structures are most appropriate for trapping small amounts of rainwater; a large bund is just not necessary for such a light monsoon. These small *khadins* can mitigate the devastating affects drought seasons: Even with just 100 mm of rainfall, farmers can garner a successful yield and prepare the land for a winter crop.

Over time, the *khadins* become more effective, not less. After a few years, small particles of silt and sand accumulate along the length of the bund. This closes up many of the smaller holes through which water might have passed. In the meanwhile, trees take root, safeguarding the integrity of the bund. Thus older *khadins* can produce a strong yield even with very little rainfall. Similarly, GRAVIS maximizes the effectiveness of the *khadin* by constructing several in a row. This helps trap the right amount of water for each field, and allows the surplus to water the next field. This arrangement promotes a partnership between farmers in a community because each is dependent on the next

for a successful harvest. They all have a common interest in the proper management of the water sources available.

In order to permit water to flow from one field to the next, through the *khadin* and to reduce potential conflicts from over hoarding, GRAVIS pioneered the spillway enhancement. After working with scientists at CAZRI and consulting with local farmers, GRAVIS realized that an excess accumulation of water threatens the viability of the crops. But the spillway prevents any flooding that might occur (after a particularly heavy rainfall, for instance). This stone and concrete channel, made from local materials, allows the surplus of water to pass through, watering the next field. All *khadins* built by GRAVIS over the past 18 years include this



Crops in a farm with *khadin*

feature. In this way, GRAVIS seeks to most efficiently manage the rainwater that does fall in the desert.

Kitchen Gardens

Food security depends not only on the production and intake of an adequate amount of calories, but also of a diet that includes a sufficient level of nutrient-rich foods. But even in years with a good harvest, the distances from the nearest market and the lack of irrigation makes growing or purchasing fruits and vegetables impossible. Often, the people rely on gathering wild greens or fruits that they find when the rains are good. As a result, malnutrition is widespread, especially in women and children. In order to improve the nutrition of the local people, GRAVIS instituted a program to encourage families to construct kitchen gardens.

GRAVIS has built kitchen gardens throughout its

history, although over time it has altered the method so as to maximize the chances of success. GRAVIS aims to plant the species of fruit trees best suited to desert conditions. The most popular varieties are the *ber* (jujube), *nimbu* (lemon), *goonda* (desert fruit tree), *anwala* (medicinal plant), and *anaar* (pomegranate). These gardens, consisting of 15 to 20 plants, are constructed near the home so that the women can easily tend to them. If possible, they are linked with the provision of *taankas* so that a steady supply will be available during the first few years. The gardens are securely fenced so as to prevent animals from intruding and disturbing the saplings. And as a new garden is planted, GRAVIS trains the beneficiaries to nurture and care for the new plants. The villagers respond enthusiastically to



Kitchen garden

these gardens because it provides them with fruits and vegetables to which they might not otherwise



Pasture in Jelu village

Likewise, GRAVIS promotes the protection of village forests. In many cases, these are private lands that their owners have donated to a deity for public use. As such, they are subject to strict religious rules. GRAVIS works with communities to plant young saplings on this land. The most popular species of tree are the life-giving *khejri* (*Prosopis cineraria*), *neem* (medicinal tree), *babool* (*Acacia* tree), and *bordi* (*Zizyphus* tree). These trees are useful in both agricultural and non-agricultural spaces: They protect the soil from erosion and add nutrients to the soil. Moreover, they provide wood for fuel, fodder for livestock, and fruit for nutrition. The trees are staunch members of the desert ecosystem and their protection is essential to the sustained security of the land.

Check Dam Construction

In much the same way that agro-forestry project check soil erosion, the same end can be achieved with a series of small dams. There are three main types used in the Thar: anicuts, check dams, and gabion dams. These structures are an ancient and indigenous to the region and made from local materials. In all cases, the goal is the same: They aim to check the flow of a large quantity of water down a slope, thereby reducing the possibility of soil erosion and crop destruction and conserving water. The difference between anicuts, check dams, and gabion dams is the size and type of materials used. Check dams, the medium size, are the most common form used.

A Check Dam

A check dam is a wall of secured stones that runs

across a channel of water. It runs perpendicular to the waterway at a given height. The height is determined by the quantity of water that needs to be retained. The walls on either side are earthen. This dam merely moderates the force of water so that the soil in the area below is not washed away. Some of the water trapped by the dam percolates into the ground. While they are not strictly used for agricultural purposes, they have a significant impact on the farming prospects in a given



watershed. When built on the proper site, check dam can prevent erosion, revitalize a watershed, and protect agricultural crops from flooding.

Seed Distribution

For a farmer, seeds are the starting point of the agricultural cycle. For this reason, GRAVIS has created a program to produce, distribute, and store seeds for the villagers. This program was developed in conjunction with the scientists at CAZRI and regularly includes the feedback of the farmers themselves. To start with, GRAVIS selects the seed types most suitable to the desert conditions. No genetic modification or hybridization occurs; rather, seeds are chosen based on their performance in field tests for water consumption and yields. Those seeds that consume less water but produces relatively high yields are ideal for this harsh climate.

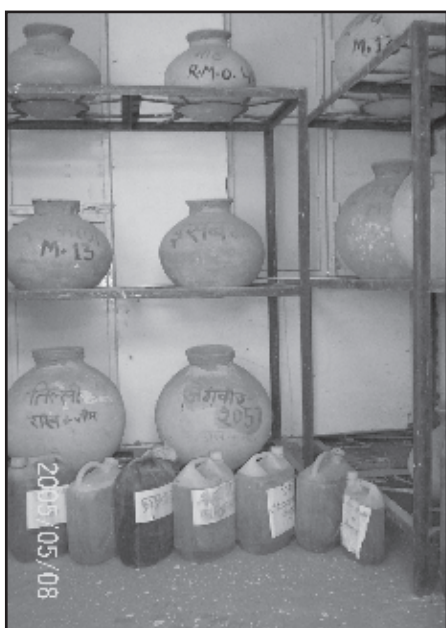
After GRAVIS' field staff cultivates the seeds in the demonstration gardens, the seeds are then stored in earthen pitchers, where they are persevered with *neem* leaves and wood ash. At the start of the

growing season, GRAVIS holds seed fairs to distribute them to the local community. The field staff targets small and marginal landholders who rank among the poorest members of their community. The goal is to attract farmers who might otherwise spend precious time and money traveling to obtain seeds. By providing them with pre-tested seeds, GRAVIS aims to improve the chance of a good harvest. Along with seed fairs, GRAVIS encourages farmers to establish seed banks in their villages; that way when good rains come, the seeds will be easily accessible.

But along with easing the provision of seeds GRAVIS aims to get the beneficiaries to reinvest in their community as well. GRAVIS asks the farmers to report the results of their experiences. This helps the field workers to identify the best performing seed varieties. At the same time, GRAVIS also invites the farmers to donate successful seed varieties back to the seed bank. These will be available to the community during the next growing season. Thus through this seed distribution program, GRAVIS aims to reduce the costs, improve the information available, and increase the chance of a fertile growing season.

Animal Husbandry

Staple grains like *bajra* compose the majority of the villagers' diet. They typically use the any surplus generated by their fields as food for their livestock.



A seed bank

The animals in turn provide the farmers with milk, protein, and wool and much-needed manure for their fields. But the harsh conditions of the desert also affect the animals. During droughts, water and fodder become scarce. So in recent years GRAVIS has extended its agriculture programs to include protection for the livestock of the region. Improving the health and nutrition of livestock has become an important piece of GRAVIS' projects for drought relief, providing drinking water and feed from fodder banks to the animals.

But because most villagers in the Thar are often unfamiliar with the care needed by the animals, GRAVIS has in recent years established a series of training camps on animal health. These are run by professional veterinarians and open to all interested villagers. GRAVIS has also published a number of training manuals to codify and disseminate the relevant information in Hindi. The topics discussed include routine care for the animals, common diseases and cures, hygiene and nutrition, and how to maximize milk production. These sessions have helped the men and women of the desert become better able to care for their animals.

In addition to the training camps, GRAVIS has arranged for village youths to receive training on veterinary care. The sparse settlements and long distances mean a lack of health centers for animals as well as people. Furthermore, it is rather difficult for villagers to transport a sick animal to the town to get treatment. So in conjunction with programming to empower the elderly (in which milk cows are distributed to beneficiaries), GRAVIS also trains a community-based cadre of youths to become paravets. These volunteers attend training programs on animal diseases and treatments supported by the government's veterinary department. At the completion of the workshops, GRAVIS provides the youths with a kit containing essential medicines and equipment. In this way, GRAVIS enables these paravets to serve in the villages, treating the animals and earning an income for them.

Farming will always be an uncertain endeavor. Droughts will always be threat in the Thar. The days

of agriculturalists and pastorals will always be long and difficult. But GRAVIS has pursued an integrated program that concentrates on the sustainable management of watersheds and other natural resources. Only by restoring the plants, caring for the animals, and respecting the fragile desert ecosystem will the land continue to provide for its



A paravet treating an animal

people.

There are many options available from *khadins* to kitchen gardens, from check dams to pasture lands. By using these interventions in combination, by listening to the needs of families and communities, and by assessing the condition of the local environment, GRAVIS hopes to develop the capacities of the people and ease their daily burden. □

When GRAVIS began working in the Thar, it saw the degree to which the introduction of modern farming practices had reduced the self-sufficiency of the people and the sustainability of the methods. Because in this remote region villagers cannot rely on outside sources of nourishment, GRAVIS began an important initiative to boost the food security in the area. Along with popularizing a variety of rainwater harvesting techniques through interventions and demonstrations, the organization tapped into the scientific knowledge that could

Sewing Seeds of Hope

improve these practices. Working closely with two research institutes, the Central Arid Zone Research Institute and the School of Desert Sciences, along with the villagers themselves, GRAVIS began to make certain improvements to the structures that would bolster their strength and maximize the water yielded.

For *khadins*, the most prominent rainwater-based intervention for agricultural activities, GRAVIS advises beneficiaries on the proper size and orientation of the bund with respect to the slope of the fields. The organization also makes every effort to align *khadins* in a row so that water falling at the top of a watershed can be distributed evenly throughout the village. To prevent both water hoarding during droughts and crop damage due to flooding after a particularly heavy rainfall, GRAVIS has constructed a spillway. This concrete structure, placed in the middle of the bund, allows excess water to flow through down the slope, providing water for neighboring farmers and promoting peace and equity in the village.

Similarly, GRAVIS has introduced new innovations for its fruit gardens and agro-forestry units. By consulting both with agricultural specialists and the villagers in the fields, they determined which plants were most successful and the precise growing conditions they required. Such detailed feedback is important because variation within the desert

makes it difficult to generalize about the area. By identifying and distributing the seeds of plant breeds that require the least amount of water and best resist drought conditions, GRAVIS has improved the economic outlook of the residents in the Thar. This is an ongoing process of refinement seeking out the solutions that work best.

These things have happened because social activists and scientists have combined their experience to help the local people. While facilitating much-needed interventions, GRAVIS also facilitates something just as important: GRAVIS provides avenues for collaboration and dialogue so that villagers are better able to consult with scientific bodies when making decisions. The end results are an agricultural approach that promotes sustainability and communities that have developed their capacities to help themselves.

Chapter 2.5

Health

For the human body, living in the desert provides one of the most difficult challenges. Given the lack of water and nutritious food, it is a struggle for villagers to maintain the well-being of themselves and their families. A range of debilitating and deadly ailments threaten the population of the Thar while villagers deem facilities for medical treatment inadequate. For this reason, health issues are one of the central fronts on which GRAVIS focuses. Reaching out to the people requires a sustained effort that first listens to the needs and then devises viable strategies for change. By spreading general awareness; establishing a network of care providers in remote settlements; and improving access to much-needed resources, GRAVIS empowers the people of the desert to recover their own dignity and lead healthier lives with special focus on vulnerable groups.

The Need

Many desert villagers live a life characterized by limited access to water and a balanced diet. Poor hygienic conditions and inadequate sanitation practices are commonplace in impoverished communities. Fluctuating migration patterns facilitate the spread of diseases. Dangerous forms of physical labor lead to serious disabilities. Indebtedness prevents many from affording essential care. Social inequalities and natural calamities, such as water shortages and crop failures, affect the population's health prospects unevenly. In most cases, those members of society who are marginalized politically and economically suffer the most: the poor, women, young children, and the elderly.

A dearth of medical resources compounds the problem. Villagers report too few doctors, health workers, and health centers in the area. Most clinics and hospitals are located in the cities and some larger towns, but covering these great distances over rough terrain becomes a challenge.

Transportation can be costly, and the lack of infrastructure sometimes forces residents to forego treatment. This creates a preference for homemade remedies. In some cases, these solutions work quite well; in others, the cures are more dubious. When the sick do go for treatment, they often find that vital medicines are prohibitively expensive or unavailable. On the whole, a general lack of awareness and knowledge about medical matters stems from a broader lack of education.

Unfortunately, the cumulative impact of some of these external factors has over time become engrained into the local culture. Perpetually placed at the margins, many villagers have developed a



fear and skepticism of modern medical practices.

Malnourishment is common in the Thar

A lack of confidence and motivation means that problems are often belatedly diagnosed, only after they have matured into serious sicknesses. Many times, patients display unwillingness or inability to comply with doctor's instructions.

Likewise, in response to survey questions about health-related matters, residents often report no recent health problems in their family. Only more specific, pointed queries are able to peel back this façade and reveal a broader pattern of sickness, a pattern crying out for attention. Furthermore, a

handful of harmful taboos still linger in some areas. These often concern the proper care for a newborn baby. This comes at a time when the actions taken by a parent or caregiver are most crucial to a baby's survival.

The most common sicknesses are respiratory illnesses like bronchitis, pneumonia, and tuberculosis. Because they spread so easily and often do not receive adequate attention, they have become leading causes of death in the area. In mining areas, many laborers suffer from silicosis, an irreversible respiratory condition leading to pulmonary fibrosis. Meanwhile, chronic conditions like malnutrition, anemia, and fluorosis affect the most impoverished villagers. For women, gynecological problems resulting from dangerous reproductive practices cause a great deal of trouble and discomfort. For children, illnesses such as skin irritations and malaria cause needless suffering and can sometimes turn fatal. For the elderly, cataract and arthritis limit an individual's functioning.

Infections of the digestive tract, often caused by parasitic worms and contracted via the oral-fecal route can lead to diarrhea, dehydration, and prolonged bacterial infections. Exacerbated by the nutritional deficiencies of an unbalanced diet, these illnesses can cause lasting internal damage when left untreated. Similarly, outbreaks of highly contagious diseases like cholera can strike communities with poor sanitation facilities. Taking the proper precautionary measures can save lives: Without proper care, preventable infectious diseases such as sexually transmitted infections, Hepatitis A, and HIV/AIDS loom on the horizon.

The health of those living in the Thar is affected not only by diseases but also by a variety of social scourges. In particular, opium, alcohol, and tobacco all drain money away from household budgets, disrupt community unity, and reduce the productivity of a worker. Prolonged use of these substances can lead to long-term illnesses, such as organ damage and cancer. While opium addictions presented a major problem when GRAVIS began its efforts in the Thar, the prevalence has declined markedly over the past two decades. Tobacco and alcohol are still moderately in use,

presenting a constant challenge to village leaders and health workers.

As a result of all these factors, health indicators for the Thar Desert are quite low. The life expectancy in the region, for both men and women, is under 60. High mortality rates for infants, young children, and pregnant women point to the presence of serious nutritional deficiencies and a host of other chronic afflictions. The pervasive poverty of the area produces a cycle of disease and suffering. While conditions have improved in recent decades with the extension roads and increased access to education and treatment, health remains a major concern. But the villagers are not apathetic: They care deeply about their families. They want the best for their communities. They are determined, against the harsh odds of the desert, to survive.

The Response

GRAVIS has devised a holistic strategy to address the issue of health in the Thar. Over the years, these health efforts have combined with complementary programs to improve the water, agricultural, and educational facilities in the villages. Some of the main health sectors include boosting women's reproductive health, improving nutrition and sanitation, and preventing the spread of infectious diseases. In this effort, prevention and treatment always go hand-in-hand. New projects always begin as small-scale, community-based endeavors. Before implementation, GRAVIS conducts a survey of the project area, and field workers listen to the villagers as they discuss their concerns. The goal is always to help caregivers engage with the local population, and through this process develop new ideas about how best to improve the health of those living in remote settlements.

The organization's earliest efforts in the Thar focused on promoting water and food security. At the same time, it began initial queries into the area of health. The goal at the time was to provide necessary care for those in need. So in those earliest years, GRAVIS immunized children, performed deliveries, and treated TB patients. Likewise, the organization started to train health workers so they

could provide immediate care in the villages themselves. During this first phase, GRAVIS also opened 12 crèche centers to promote the social, cognitive, and physical development of young



children. While the crèches remain a bedrock institution in many communities, these centers are viable only in areas with a relatively dense population.

Village Health Workers' training

GRAVIS' very first health endeavor, however, was to conduct opium de-addiction camps at Gagadi village. At the time, opium was widely regarded as a rampant malady that was corroding the socio-economic fiber of these societies.

Yet over time, these medical interventions proved less effective than preventative education; opium use has declined with the introduction of broader



A GRAVIS run crèche

social changes into the villages. While GRAVIS ultimately discontinued these de-addiction camps they helped introducing the local population to the organization. This was a process of gaining trust and bringing people together to face common problems. Through these camps, GRAVIS demonstrated its intention to serve and listen to the people.

After this early start, GRAVIS began to substantially expand its health program. The main issues of concern at the time were reproductive health, early childhood development, and the well-being of the elderly. During the malaria outbreak of 1994, GRAVIS went into emergency mode: By quickly mobilizing all available resources, GRAVIS partnered with other organizations to stem the tide of the disease. Likewise, GRAVIS began to explore the traditional medicines of the area and find a nexus between home remedies and modern scientific advances.

During this stage, GRAVIS also began to collaborate with other development organizations and available government infrastructure. It became a founding member of the Rajasthan Voluntary Health Association. At the same time, it cooperated with Auxiliary Nurse Midwives (ANMs) to improve the care at local *aanganwadis* (government-run health centers). By providing *dais* (midwives) with supplemental training and by bringing together a cadre of Village Health Workers to serve in the villages, GRAVIS widened the reach of its partners and activities. These programs helped to break down barriers with the villages and forge more inclusive solutions: Because around 90% of the VHWs are women, this made many villagers feel more confident and comfortable talking about personal health issues.

The driving force of these programmatic changes was the ten year long *Khoj* project and the support of the Voluntary Health Association of India. From 1993-2003, GRAVIS served an area with 50,000 people through this initiative, a quarter of whom did not have access to medical facilities and only a third of whom were literate. This program developed innovative methods for providing care to women

with a low socio-economic status. By designing a series of medical camps, awareness meetings, mobile clinics, healthcare came to the rural areas. GRAVIS reached out the members of Self-Help Groups, teachers in schools, and local health workers to enact these changes. *Khoj* brought relief improving the health of pregnant women, newborn children, and adolescent girls while uncovering a pathway to better health in the region.

But because Village Health Workers were limited by their expertise and equipment in what they could achieve, GRAVIS began to plan and construct a rural hospital in the Thar. In 2001, the organization opened the GRAVIS Hospital in Tinwari. To complete this facility, GRAVIS worked closely with the VDCs and other community-based organizations. While GRAVIS continued to work on preventing diseases, providing immunizations, training health workers, and improving reproductive health and child care, the organization spread into new areas as well. Recently, GRAVIS has increased its emphasis on eye care, early identification of silicosis, and has introduced its first program to combat the spread of HIV/AIDS.

During this time, GRAVIS also began to raise the profile of health issues through research and advocacy. The organization held more rallies,

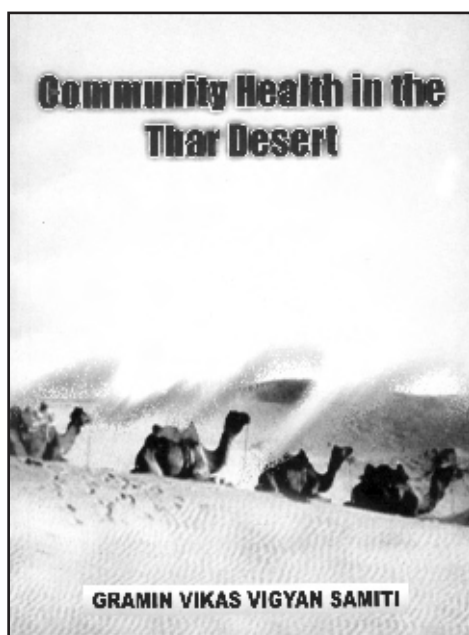
awareness camps, and public events. Likewise, GRAVIS also began to compile a literature on the topic that could be used as a resource for further education: "Community Health in the Thar Desert," published in 2005, comprehensively examines the health outlook in the region. Likewise, booklets on fluoroisis, malaria, and other issues document the Thar's most pressing health threats. As GRAVIS moved through this stage, its goal was to improve the access to care for the poorest in the region.

Village Health Workers (VHWs)

The Village Health Workers provide an essential link between the villagers and the organization. Today there are more than 350 VHWs, all of whom work and live in rural areas in the Thar. Because more than 90% are women, they can best understand the apprehensions of the local people and help them learn about better ways to care for a household. The primary role is to provide first aid, assist with safe childbirth practice, recognize diseases (and refer patients to a doctor or hospital when necessary), and to promote general health and hygiene in the village. To aid the Village Health Workers in their efforts, GRAVIS runs frequent training programs, each tailored to the specific need of the project or population. At the end of these sessions, GRAVIS provides the health workers with a kit filled with equipment necessary to complete their tasks. These refresher courses act as a supplement to their wealth of experience, boosting their confidence as they work with in their communities. GRAVIS intends to work closely with these individuals in the future, improving their medical knowledge and capacities.

The GRAVIS Hospital

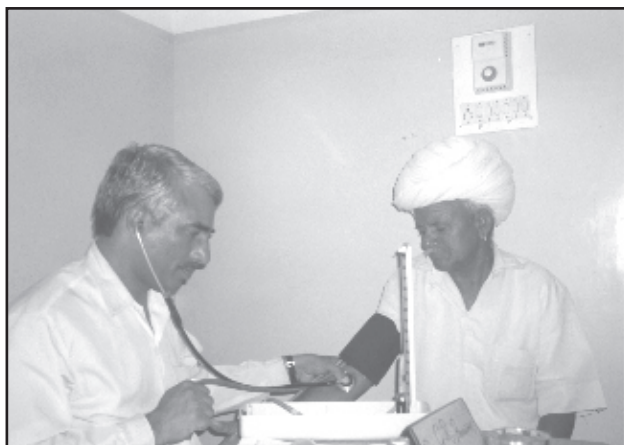
Located in Tinwari, 35 km from Jodhpur, the GRAVIS Hospital serves as a vital caregiver in an overlooked region. Constructed with the help of contributions from various donors and international agencies, GRAVIS inaugurated the hospital in 2001. Serving an area with 100,000 people, the hospital works in conjunction with GRAVIS field-based health programs. The hospital charges the patients small amounts of money for the services



A health publication of GRAVIS

provided. Extremely poor and destitute individuals, however, are treated for free, and this group composes about a quarter of all the patients.

The hospital complex features a 25,000 sq. ft. building that includes 50 beds for patients, six examination rooms, a laboratory, a labor room, two operating theatres, a sonography station, and x-ray unit. The staff includes several doctors (both on-call general practitioners and visiting specialists), nurses, technicians, administrators, ambulance drivers, and other helpers. The recently constructed eye care wing handles a growing number of surgeries, testing facilities, and out patient rehabilitation activities. A training hall



serves as a useful facility for hosting sessions with Village Health Workers and outside groups. A pharmacy on the grounds provides medicines for patients. A housing structure at the rear of the compound serves as a residential area for hospital staff.

A Patient in GRAVIS hospital

GRAVIS field workers identify potential patients through medical camps and screenings. They refer the most serious cases to the hospital while enlisting those with minor ailments for community rehabilitation. The most commonly cases concern eye surgeries, difficult pregnancies, malnutrition and anemia, malaria, and gastrointestinal disorders. Patients with TB are referred to the

government's TB hospital for treatment at that facility. The most commonly prescribed medicines are antibiotics, vitamins and nutritional supplements, de-worming tablets, treatment for diarrhea and dehydration, and painkillers. While ensuring that medical treatment is regularly available in rural areas is a challenge, GRAVIS will continue to spread awareness about the facility to desert villagers and attract a highly-trained cadre of professionals to provide care to those who need it most.

Preventative Measures

The simplest way to save lives, reduce suffering, and cut health-related expenditures is to stop infections from taking root in a population. By inoculating all children, promoting sanitary practices, and holding medical camps to educate the public, GRAVIS has adopted a strategy that stresses disease prevention. For immunizations, GRAVIS works with the Government of India's program to immunize rural population through the ANMs. GRAVIS enlisted VDC members and VHWs to popularize the program, mobilizing the whole community for this effort. The *aanganwadis* offer vaccines for polio, tetanus, diphtheria, measles, and supplementary doses of vitamin A at no cost. As a result, GRAVIS and its community partners have slowly begun to reverse a situation characterized by too little awareness and too much suspicion

Furthermore, improving the sanitary conditions in the villages can reduce diseases. Many parasitic



A health camp organized by GRAVIS

infections spread via the fecal-oral route; others are transmitted through unclean food, water, or air. The lack of latrines, forcing the population to relieve themselves in the fields, contributes to this problem. Poor ventilation allows respiratory infections like TB to spread. Surface water allows malaria-carrying mosquitoes to breed; contaminated water sources facilitate the spread of typhoid, dysentery, and cholera. Children who eat dirty food often become infected with worms which lead to severe diarrhea and contribute to malnutrition. So in addition to educating the people about more hygienic methods in awareness camps, the construction of *taankas* provides a source of clean water and reduces standing water.

GRAVIS has committed itself to demonstrating to the people how altering unhygienic habits can reduce disease. Because most adults did not receive a formal education, informal awareness camps and training sessions serve as the ideal forum to share new ideas. GRAVIS regularly conducts outreach camps in remote areas with trained professions. These address all medical issues, but are often specialized for high-risk populations (e.g. mineworkers, pregnant women, the elderly). In this setting, community members can receive instant



and advice and care; GRAVIS also transfers the most serious cases to the hospital for treatment. Altering deeply-rooted habits is always a long process, but by working with community-based organizations and the local government established in the area, GRAVIS has created a

preventative course to match its treatment program.

A health training

Reproductive and Child Health

For cultural and economic reasons, birth rates remain high in the Thar. This places a large burden on women. Many women spend the majority their life from teenage years to menopause pregnant, giving birth, and caring for newborn infants. Yet repeated pregnancies such as these deplete a mother's energy and make her more prone to infection. If the gap between pregnancies is short, then it is often difficult for a mother to regain her strength. At the same time, male resistance to birth control and family planning makes change difficult.

Some female-initiated techniques, such as female sterilization, prolonged breast-feeding, and birth control pills, are more likely to be successful at preserving women's health and checking population growth. In its family planning activities, GRAVIS acknowledges these social and cultural realities. For that reason, GRAVIS has committed itself to working with Village Health Workers when providing women with the information to make informed choices.

Because most desert women live in areas quite far from cities and hospitals, GRAVIS collaborates with *dais* and Village Health Workers to make pregnancies and deliveries safer. These *dais* are also known as Traditional Birth Attendants (TBAs). The organization trains these midwives in basic first aid and hygienic delivery procedures. GRAVIS also



A training for TBAs

provides them with kits that include contraceptives and nutritional supplements. When a *dai* recognizes a complication, she can then arrange a transfer where medical professionals can assume responsibility for the patient. For the neediest women, GRAVIS arranges pre-natal check-ups, constant monitoring, and a food ration.

A new baby's health is most directly affected by the health of the mother. So it is a dismal truth that in the Thar both mother and baby too frequently suffer from malnutrition. While children can in the future serve as a source of labor for the household, poverty often makes it difficult to care properly for all the children. Many babies are born prematurely or underweight. Most children also suffer from malnutrition and severe diarrhea before they reach the age of five. Immunizations, improvements in hygienic practices, and nutritional supplements are three things that can reduce the likelihood of disease and suffering in children.

At the same time, GRAVIS' efforts for child health include vigorous social campaigns against child marriages and early pregnancies. Once widespread in the area, these practices have declined somewhat in recent years. Where they linger, however, they put the health of young girls at risk. Indeed child widows often become scorned and neglected, marginalized in their own communities. By working with the VDCs, ANMs, and other community leaders, GRAVIS has stressed that progressive thinking and change must replace

harmful social practices. GRAVIS supports a variety of programs that promote greater education and awareness for girl children. It has long worked to make suitable learning materials available to adolescent girls so that they can understand the physiological and psychological changes taking place in their bodies.

Geriatric Health

Too often in the communities of the Thar, the needs of the elderly come after the younger generation. After a lifetime of hard work, many older persons suffer from an array of debilitating diseases. These include malnutrition, tuberculosis, silicosis, arthritis, rheumatism, cataract and cancer. Treatment of such ailments often results in a financial burden for the family. GRAVIS has committed itself to reversing this plight. Failing sight, for instance, frequently disrupts the normal course of an elderly person's life. But GRAVIS' eye care program contacts potential patients in awareness camps and then offers them free corrective surgeries at the GRAVIS Hospital. Through the actions of its program to empower the elderly in their communities and through a variety of health interventions, GRAVIS has worked over the past two decades to reach out to the elderly in remote communities.

Eye Care

The prevalence of eye problems in the Thar is shockingly high. The strong sun, vitamin deficiencies, and chronic malnutrition cause



The health status of older people living in the Thar Desert is extremely poor



Patients after eye surgery

cataract, glaucoma, night blindness, and a range of eye infections including conjunctivitis. It doesn't have to be this way. In the last few years, GRAVIS has taken a leading role in eye care, now covering an area of 150,000 people. Screenings in schools and communities identify those individuals who may need an operation. Twice a week, an ophthalmologist performs free or subsidized surgeries in the eye wing of the GRAVIS Hospital. These simple procedures can prevent blindness and restore full eyesight. Rehabilitation takes place both at the hospital and through Eye Health Committees established in communities. While identifying needy individuals and spreading awareness represent some challenges, GRAVIS plans to extend this program to other areas of the Thar in the future

Occupational Lung Disease



Silicosis, an occupational lung disease, is a respiratory condition that often becomes chronic and deadly. There is no cure for silicosis, so it is extremely important to detect it early and prevent individuals from contracting it. This ailment afflicts those working in the mining areas because silicosis is caused by inhaling dust and particular matter in the air.

A mineworker suffering with silicosis

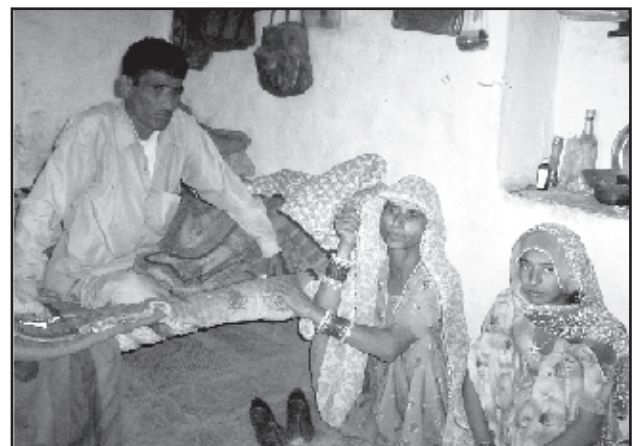
Yet because mineworkers and mine owners do not take the proper safety precautions with dry drilling practices, infection rates remain very high. The body weakens, and the burden to generate an income and care for the sick falls unto family

members. GRAVIS runs ongoing medical camps in the mining areas that provide free testing and treatment. These camps seek to educate the miners about threats to their health.

Infectious diseases

Infectious diseases affect all age groups and all communities. But those members of society with weaker immune systems suffer the most. Many of these ailments are preventable, but spread because of inadequate preventative measures. Left untreated, they can become chronic. And deadly.

Tuberculosis is a bacterial infection that severely damages the lungs. It spreads through coughing and unsanitary living conditions, and is exacerbated by malnutrition. Because of a lack of awareness, late diagnosis, and non-adherence to treatment schedules, it has become a leading killer



in the Thar. GRAVIS is a registered partner organization in the Government of India's Revised National Tuberculosis Control Program. Village Health Workers have been trained to recognize the symptoms of TB and refer all patients to the government hospital, where they can undergo further diagnostic test and Directly Observed Treatment Short course (DOTS) chemotherapy if needed.

A TB patient

As with tuberculosis, individuals can change their behavior and their surroundings to reduce the

likelihood of contracting malaria. Malaria, a disease transmitted via mosquitos, may seem like an unlikely problem for desert areas. Yet it is indeed a leading cause of illness: When people must store large quantities of water for several months, when newly constructed irrigation projects and canals increase the amount of standing water, mosquitoes breed. During the monsoon season, serious outbreaks can occur. GRAVIS has responded to this problem by promoting preventative measures, reducing standing water by constructing covered *taankas*, testing possible cases, and providing treatment to infected individuals. When necessary, the organization has mobilized additional emergency resources to prevent a larger crisis.

While malaria and tuberculosis are imminent threats, the rates of HIV/AIDS transmission in the Thar still remain low. Yet because India, reportedly, has the highest number of people living with

HIV/AIDS in the world, GRAVIS has acted in the past few years to take this disease seriously. Currently, there are many myths and misunderstandings about transmission. And because of a stigma against infected persons, this makes identifying the virus in its early stages more difficult.

In the Thar, men migrate to the mines or distant cities for work, contract the disease in these places, and then return home to infect their communities. To counter the spread, GRAVIS has worked within the *aanganwadis* to develop a comprehensive education program; this awareness campaign can then be used in villages throughout the region to educate the public. At the same time, the organization has facilitated workshops and meetings with a diverse array of actors that focus on blocking the spread of the disease in the Thar. GRAVIS believes that by encouraging preventative practices, working with local government offices and resources, and promoting greater understanding of the disease in schools and communities, the fear and stigma associated with HIV/AIDS will subside.

Healing in the Thar is not easy. To be successful, this organization must overcome the physical obstacles of the desert, bridge financial short-falls, and dispel erroneous taboos. Yet with sensitivity and with dedication, GRAVIS has worked to improve the health of the villagers in the desert. The activities are



A medical camp

A Vision of Rural Healthcare

built on a simple but sturdy foundation: They are community-based, engaging the local people where they live. They raise awareness about potential threats, identifying ways to prevent diseases. And they are cooperative; bring government agencies, community members, and health workers together for the betterment of all. These core principles will endure as GRAVIS plans the expansion its health programs in the future. □

With health, as with other areas, sustainability is always a concern. It's not simply enough to run a few projects in the area of health. Such efforts, while certainly providing some relief to the beneficiaries, will not promote broad and lasting change. The health situation in the Thar is serious; thus only a serious, well-planned solution will suffice.

Since the very beginning, GRAVIS has committed itself to working and living with the people. Over the past two decades, as the organization has learned and grown with communities, this pledge has matured. GRAVIS now has a holistic vision of healthcare in remote areas of the Thar Desert can and should look like. This idea is the result of much consultation and hard work. While GRAVIS has undertaken many different activities over the years, this organization remains at the same time flexible in its approach, open to new ideas.

The Indian Constitution and the government's National Health Policy both promise healthcare for all citizens. Unfortunately, this goal has not yet been fulfilled. Too many residents of the Thar lack the most basic care. But rather than squabble or place blame, GRAVIS has decided to work with the government's medical infrastructure in the area, strengthening its resources so it can better serve the people. By aligning with supporters and implementing agencies, GRAVIS has worked to open a dialogue and build a consensus on how to address these health problems.

Bolstering the work of the government-run *aanganwadis* and ANMs is indeed important.

These facilities are best positioned to provide the vaccinations that are so important to the health of a child. They also are most adept at distributing food and nutritional supplements. *Aanganwadis* also serve their communities well when they act as a resource for information, spreading awareness throughout the community. And for the lengthy treatment of diseases like tuberculosis, government hospitals are best suited to handle those cases. Yet while these resources are indeed essential, a blanket centralized policy is not always appropriate in the Thar. Instead GRAVIS believes that a hybrid model works best, one where many different groups are responsible to each other in an inter-dependent network.

At the village level, GRAVIS believes that Village Health Workers, along with the *aanganwadis*, can provide crucial care for their communities. Assisted by the organization for training and equipment, these individuals have the ability to engage with their fellow villagers and act as agents of change. Because of their credibility and deep relationships with the local people, these health workers have the ability to convince skeptical patients about the best course of action. And because most deliveries still take place in rural areas, training *dais* to manage these cases in a hygienic fashion can reduce the rates of infant and maternal mortality. Most importantly, these health workers serve as educators, spreading the basics of disease prevention and treatment throughout the community.

Yet Village Health Workers have their limits, and they know that. When a case becomes serious, it becomes necessary to transfer patients to the hospital. For that reason, the GRAVIS Hospital at Tinwari provides vital access to sophisticated medical facilities in a rural area. The eye surgeries, operating theaters, pharmacy, and wards for the seriously ill provide vital resources that do not exist in the villages. By making the hospital both easy to reach and affordable, GRAVIS can open the doors

for even the poorest villagers.

Robust communication between all these different actors is essential. The government's ANMs and VDC members regularly consult each other about the situation in the villages; they coordinate their awareness campaigns and immunizations so that the programs can reach the largest amount of people. Likewise, Village Health Workers refer serious cases to the hospital; these workers also assemble at GRAVIS' field centers for regular

training courses. Using its dispersed network of field centers, GRAVIS can get close to communities. This allows the staff to learn what works and what does not. Most importantly, however, all parties listen to the local people, and learn about their changing needs and concerns. This is, at its best, a process of inclusion, a process where the efforts of all are directed toward a common cause.

In the future, GRAVIS plans to tighten this network and fine-tune its operations: the organization will

Chapter 2.6

Education

Formal education is not immediately appealing to villagers in the Thar. With the population employed in agriculture, animal husbandry, mining, many often believe, understandably, that they will only lose income if they send their children to school. Yet GRAVIS has worked to overcome this stigma because it believes that an education and particularly an education pertinent to rural life is an essential part of *Gram Swaraj*: It can improve the health awareness, economic opportunity, and general well-being of its students. So GRAVIS aims to bring education to those in the desert who might not otherwise have the opportunity. Indeed many of the village in which GRAVIS now runs educational projects never had a school before this. More significantly, GRAVIS has opened school doors to girl children, providing a path to social equality.

The Need

The state of education in the Thar Desert remains very poor. The literacy rate 60% in the region falls below the national average. But most shocking, only around 10% of women are literate; in many villages, not a single woman knows how to read. One obstacle to education is that children often must help with chores in the home, work in the fields, and tend to the animals. Another problem is the great distances between *dhanis* in a community. In some cases, it makes more sense for GRAVIS to wait until after the water initiatives have begun in a village before establishing an education program. At that point, children will have reduced household chores and thus more time to study. But traveling several kilometers each day to reach the nearest school is still a formidable challenge. In other situations, however, the local community may be more receptive to the opening of a school, so GRAVIS addresses both situations concurrently.

The Response

Since the earliest years of the organization, GRAVIS has focused on reaching out to the children

who are least likely to attend school. This means targeting girl children through recruitment practices and teaching materials that emphasize equality of opportunity. This also includes programs for children who are blind or have other physical disabilities or learning disabilities. Enrollment of these neglected children in schools means that they will have a better chance to lead a normal life and



no longer burden their families and communities.

A school set up by GRAVIS in a remote village

GRAVIS believes that an education must be applicable to the lives of the students and must add rather than detract to the community as a whole. One way to boost attendance is to make sure the schools are well-equipped. Most schools that GRAVIS runs have a *taanka* for drinking water. Furthermore, each school has a mid-day meal, providing a nutritious diet to the children. GRAVIS also holds periodic medical camps at its schools so that students can receive check-ups and care if needed. All this is done not only to foster the mental growth of students but their general welfare as well.

In recent years, GRAVIS has expanded its program to villages that have no experience with formal education. These schools take a variety of forms, as they have been flexibly designed to meet the needs of the community. In 2004, the book "Oasis in the

Desert” documented these efforts. Throughout its history, GRAVIS has tried to make the education that children receive a practical one by designing a curriculum suitable to the culture and environment of the desert villages.

Village Education Committees (VECs)

GRAVIS believes that an education program cannot truly succeed in fostering *Gram Swaraj* unless the community plays an active role in the planning and maintenance of that intervention. The community-based organizations that GRAVIS establishes to work on these issues are called Village Education Committees. On these committees, half the representatives are women. GRAVIS entrusts the committee with the task of monitoring the day-to-day administration of the school, including the mid-day meal program and dispensing educational manages the community’s education funds and oversees the distribution of teacher’s salaries. Working with other community-based organizations like the local VDC and Village Health Workers, the VEC ensures that the beneficiaries in the community become involved with every aspect



of the function of the school, right from the initial construction down to the daily lessons materials.

A workshop for VEC members on education

Non-Formal Education (NFE) Centers

Because some communities have very little experience with formal education and are wary of

the changes it brings, GRAVIS has established a series of Non-Formal Education centers in some of the most remote locations in the Thar, those furthest from government or private schools. The first center was founded in 1988 and they remain popular today. They aim to attract students from disadvantaged communities (e.g. SC, ST, OBC, Muslims), raise the children’s interest in a formal education, and prepare them for entrance into schools. Some of these NFE centers have proved so successful that their administration has since been transferred to independent village management through the VECs.

The hours of operation for the NFE centers are not fixed but flexible. This helps to draw students unfamiliar with a school system and who still must attend to their household responsibilities. The curriculum includes classes in Hindi, mathematics, basic English, health and hygiene education, and some extracurricular activities. The medium of instruction is the local language, Marwari. Each day these schools also provide the mid-day meals that proven so essential to the success of a development scheme’s educational program. Primary healthcare is also available on a regular basis. Students remain in the school for 1-5 years, depending on their age. These centers act as a gateway to the formal school system.

Primary Schools

In an effort to make education more accessible for the children in the villages, GRAVIS runs or supports more than 20 primary schools. The VDCs, VECs, local *Panchayat*, and block level government offices all have a role in administering these schools. One innovation that makes these schools unique in the Thar is that they offer a mid-day meal to their students, improving nutrition and attendance simultaneously. Unlike other programs, GRAVIS begins and runs a primary school with the intention of eventually transferring it to the state government for maintenance. In this way, GRAVIS can ensure the sustainability of the schools and also steadily increase the number of government schools in the Thar.

Other Efforts

GRAVIS understands that providing a sound education cannot be achieved just by simply opening a school in a village. So it has undertaken a range of supportive measures that will contribute to the success of the program. For instance, in order to improve the quality of its instruction, GRAVIS has developed a Teachers' Committee that will monitor the level of instruction. This council travels to the different schools and monitors the lessons. The members listen to the teachers and administrators and provide feedback when necessary. They also introduce new teaching materials and methods, so that the teachers are also constantly learning and striving to improve themselves.

And in order to make school an environment that's fun and conducive to learning, GRAVIS complements its curriculum with a variety of extra-curricular activities, including hosting an annual inter-school competition. Students from schools in the surrounding areas come with families and friends to a GRAVIS field center. There are various sports activities, an art competition, and cultural programs, featuring patriotic songs, folk music, and dances. The VDCs and VECs actively plan the day. The entire event creates a sense of communal unity. Students prepare eagerly for this special day for



months and their participation in these programs foster the well-rounded development of the children.

A cultural program in a school

At the same time GRAVIS seeks to build a comprehensive educational program, it is also helping communities that have a school that was built by the government but has subsequently closed because of poor administration, lack of interest, or general neglect. In this case, GRAVIS assumes responsibility for the defunct school and restores its operations. This process involves forming associations of parents and concerned community members, retraining old teachers and finding new ones, repairing physical structures, and distributing teaching supplies.

These supplies include teaching aids, charts, workbooks, pens, and pencils. In many cases, GRAVIS also arranges for a mid-day meal scheme and health check-ups. Revitalizing community-based organizations is central to the effort because they best know the needs of their village. So if a child falls sick or cannot afford a uniform, they can use their funds to respond appropriately. Once the school is functioning properly, GRAVIS returns the administration to the community.

Education remains a central priority for GRAVIS and it has been an integral part of its development program for a long time. In the future, along with improving the quality of instruction, GRAVIS will continue the drive for girl child education, bringing greater gender equality to the region. The organization aims to emphasize female enrollment and instill progressive social values in an entertaining and educational way. At the same time, GRAVIS hopes to increase the number of awareness camps and exposure visits, as these are valuable opportunities for the students to get a glimpse of the world outside their village. Finally, by expanding many of these educational initiatives to the mining areas, GRAVIS hopes to relieve some of the hardship that the children living there face. In all

Reaching out with Flexibility

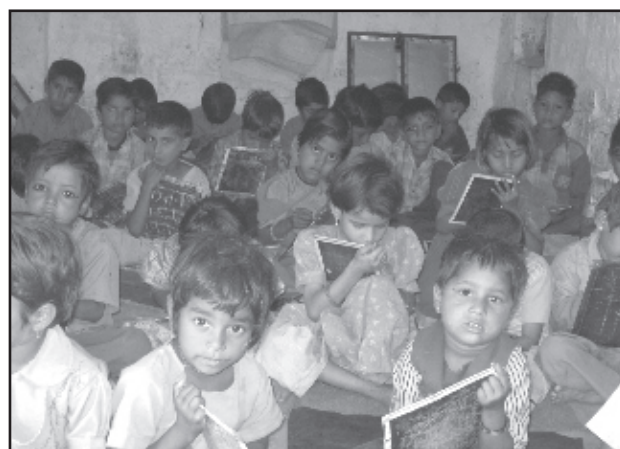
its efforts, GRAVIS will continue to devise a program that practically connects to the specific conditions and culture of the Thar. □

In areas where there are no educational facilities present and where formal education is not popular due to cultural barriers, GRAVIS has introduced flexibility into its educational program and established special outreach schools. These schools take a variety of forms because they seek to engage the local people in a way that's respectful of their traditional way of life. They represent small-scale experiments into how to design educational programs so that they are appropriate and applicable to the lives of local people. GRAVIS opened most of these outreach programs within the last several years and hopes to expand this program to other areas based on the success of these initiatives.

GRAVIS founded its first outreach school in 2000 in Bengti Kalan, an all-Muslim community. In this village, the people had ignored the primary school and only stressed a religious instruction. GRAVIS designed a curriculum with a more holistic approach to education than the madarasas offered. Now the school offers basic classes in literacy, language, and mathematics along with the courses pertaining to the people's customs. The school, which features a mid-day meal, has been quite successful. Based on the initial results, GRAVIS set up one of its Early Childhood Development (ECD) centers in this village. These facilities function similarly to NFE centers: They prepare students for

future enrollment in primary schools. The target age, however, is different. In these facilities, children with ages 2-5 attend lessons in which the teachers instruct them through poems, playing, actions, and storytelling.

After the successful program in Bengti Kalan, GRAVIS opened a second outreach school in Sadawaton in 2001. This similar school serves a community where almost all the members are *dalits*. In the same year, GRAVIS opened another school in Jogi Magra. This is a community of snake charmers, an occupation now banned by the government. Because mainstream society has typically discriminated against this group, the residents of Jogi Magra had no opportunities to earn an income. None of the adults living in the community are literate; many must now beg in the cities to earn



Chapter 2.7

Women's Empowerment

Many women in the desert live under oppressive social conditions. In this area, social scourges such as dowry, child marriages, *purdah* (the obligation for women to wear veils and/or be kept inside at all times), and illiteracy still widely exist. In some sections of society, female infanticide and sex-selective abortions have become increasingly common. Furthermore, the daily tasks that women must complete are by no means easy: They must maintain the household, raise the children, fetch water from distant sources, and work in the fields. But at the same time, somehow, there is also color, resilience, and laughter. Since its founding, GRAVIS has been deeply committed to reversing the general lack of education and neglect pervasive in these communities. By helping women organize, gain skills, and forge new opportunities, GRAVIS has stimulated progressive change amongst these sandy plains.

The Need

In its attempts to ease this burden and reconstitute the damaged foundation of village societies, GRAVIS has crafted a holistic program to address the state of women. These efforts focus on health, education, organization, and income generation. In any project GRAVIS undertakes whether it's related to water, health issues, schooling, etc. the well-being and empowerment of women and girl children is often a centerpiece of that initiative. The drive to alleviate poverty in the Thar won't be sustainable unless the culture changes. So it aims to eradicate the gender bias in rural areas. It's an ambitious goal, but one tackled through a series of logical, tangible approaches.

By designating women as the beneficiaries, they then have ownership of water systems a provision that makes sense culturally since collecting water is the woman's responsibility. By establishing Self-Help Groups exclusively for women, they can earn an income independent of their husbands. By training female Village Health Workers, they can

provide pregnant women with improved pre- and post-natal care. In this way, GRAVIS empowers the most marginalized members of these communities, helping them to break an oppressive cycle of social poverty.

GRAVIS tailors these activities to the targeted section of the population. In all cases, the goal of *Sarvodaya*, or helping the neediest, influences all of the organization's actions. This means elderly women, girl children, and those women who are reproductively active.

Widows make up a significant portion of the women over 60 years old in the Thar and older women suffer the most discrimination. Because they are the last priority in the family and village hierarchy, they often receive the least amount of food, health services, and familial care. Cultural taboos about widowhood often prevent rural women from inheriting property or remarrying.

Likewise, young girls are also often treated poorly, especially in comparison to boys. They have to assist their mothers in the household chores, care for their younger siblings, and go off in search of water; this leaves little time for a formal education. Because of neglect, many young girls are malnourished. Some families even resent their female children because they must give a large dowry at the time of marriage. The dowry system places pressure on the girls because they feel personally responsible for adding this burden to the family. For this reason, many families prefer to have sons.

Finally, women at the reproductive age often suffer from poor health and weakness. The stress of having many children is juxtaposed with the daily tasks of managing the home and performing physical labor on the farm. Malnutrition, poor sanitation, and ailments like anemia and vitamin deficiencies can all lead to sickness. Yet *purdah* and restricted freedom of movement prevents them from dispelling their ignorance. These women are often shut out of decision-making in the household, and

do not fully control their own bodies and lives. These conditions threaten their health and the health of their children.

The Response

The empowerment of women has been a priority for GRAVIS since the beginning of its work in the Thar. Yet the specific activities undertaken have changed somewhat over the years. GRAVIS has always encouraged the formation of Self-Help Groups and operated awareness programs. It has always promoted leading roles for women on the VDCs and a place for girl children in the schools. It has built *taankas* and desilted *naadi* so that women would not have to trudge long distances through the desert.

In the earliest years, GRAVIS focused on popularizing immunization and family planning schemes. Health issues undertaken included education about an oral rehydration mixture to prevent dehydration and information about general cleanliness and sanitation. In order to foster a healthier lifestyle, GRAVIS subsidized low-cost housing, flush latrines, and smokeless wood stoves in some villages. The organization also actively campaigned against opium addiction, child marriage, and *pardah*.

As GRAVIS grew into a larger and more capable organization in the 1990s, the women's empowerment activities also expanded. GRAVIS organized more rallies, workshops, awareness camps, and public meetings in the villages. These

gave the women an opportunity to come together and learn from one and other. At that time, GRAVIS began to train *dais* (traditional midwives) and Village Health Workers through the *Khoj* project. This initiative focused on health education for adolescent girls and the reduction of mortality rates for mothers and infants during childbirth.

During this phase, the spread of *taankas* and milk cows simultaneously lessened the daily burden while increasing the nutritional supply available to beneficiaries. Additionally, through skill trainings, women became proficient artisans. By generating an income through leather, embroidery, and patchwork quilting crafts, they became more independent and respected in the village. In recent years, GRAVIS' income generation efforts have expanded to encompass flour, oil, and powder production. With the organization's support, some groups have come together to establish cooperatives for spices or dairy products. GRAVIS continues to emphasize the total well-being of the women in all its activities: Half the members of VDCs are women, and their active role in these forums sets the tone for a wide variety of community efforts. Indeed one of the main goals of GRAVIS' community-based organizations, like the Self-Help Groups, is to bring women together and get them talking about the issues affecting their communities. The construction of more rainwater harvesting structures lessens the daily burden on women. Moreover, GRAVIS designates women as owners of many of its rainwater harvesting structures. This boosts their status in household. At the same time,



A women rally on International Women Day



A shop run by a SHG

the enrollment of girl children in schools means that they their future holds greater promise than it did for previous generations.

The expansion of healthcare services means that they will be better able work in the home and fields. To that end, more than 90% of GRAVIS' Village Health Workers are women. This means that they gain the skills and confidence to help their families and communities. Many illnesses caused by malnutrition and poor sanitation particularly affect women, so they are the ones best suited to addresses these issues with their fellow villagers and initiate a campaign for better health. Slowly, day by day, meeting by meeting, year by year, the women of the Thar are building their confidence and turning away from a life of silent desperation.

Self-Help Groups (SHGs)

With GRAVIS' support, village women gather together to form Self-Help Groups. These community-based organizations consist of approximately 10 to 15 women each. Each month they deposit between Rs. 25-50 in the group savings that goes further to a bank account. After several months, the women become eligible for micro-credit loans, which are then paid back in monthly installments. The women use these loans for investment in a small income-generating scheme or as a cash reserve in times of emergency. For the women, this can lead to greater financial security and independence from their husbands. Loaning from the banks proves beneficial because commercial moneylenders in the villages or nearby towns charge exorbitant rates of interests. This leads, inevitably, to a cycle of debt from which it is almost impossible to escape.

Along with creating avenues for micro-credit loans, the SHGs also serve as a place for learning. GRAVIS holds a variety of awareness camps, training sessions, and information programs for SHG members. In this setting, the women can learn new skills, such as how to farm organically, manage seed banks, or maintain rainwater harvesting structures. GRAVIS field workers also provide guidance on the establishment of

communal savings accounts and small-scale industries. Awareness camps provide information about immunizations, family planning, nutrition, health and hygiene, labor laws, and citizens' basic civic rights and responsibilities. Many interested members attend GRAVIS' literacy camps, which provide the women with their first exposure to a formal curriculum and prepare them to become more active participants in their societies. These various educational programs offer women access to knowledge to which they have often traditionally



been denied.

A SHG meeting

More importantly, perhaps, than just access to credit or information, are the types of community bonds that form during these groups. By meeting once a month and by making exposure visits outside of their villages, the women have a chance to escape from the monotony of rural life. They have a forum, free from the interference of men, to discuss issues pertinent to their lives. This space to learn, to converse, to share is critical because it gives them outlets for creativity and expression.

By administering the meetings themselves, they become more self-reliant. With the self-esteem they've gained in the meetings, many members become agents of change in their own community. They campaign against child marriage and drug addiction. The VDC often draw their female members from the active SHGs in the village. By uniting, these women discover the true meaning of

empowerment, regaining the dignity that they deserve.

Income-Generating Activities

For those SHGs that become mature enough, GRAVIS offers the possibility of starting income-generating units. The profits from these activities can help the women achieve a measure of financial independence and raise the economic status of their families. Based on the local environment, GRAVIS helps to identify the most viable projects: The most common enterprises include *masala* (spices) production, making handicrafts, dairy cooperatives, setting up seed banks, and running a provisional store. Although the women themselves run the businesses, GRAVIS field workers sometimes assist with bookkeeping, obtaining material inputs, and with the product distribution.

Obstacles such as illiteracy, lack of capital, and large distances from markets make difficult to prosper in these endeavors. Yet GRAVIS has a few success stories. For instance, *Gramodyog*, a unit based at Gagadi Field Center, produces organic spices. The women make the *masala* from chilies, cumin, coriander, and turmeric grown on organic farms. They then pound the seeds by hand while never using any chemical additives; this differentiates their products from the manufactured *masala* available at markets. In the past, GRAVIS purchased bags of *masala* for use at its field centers in the region. Recently, however, GRAVIS began introducing the *masala* in markets around Jodhpur. The demand for more of these products is growing slowly. All proceeds return to the women in the cooperative. GRAVIS plans to build on the modest



Spices from GRAVIS Gramodyog

success it has achieved so far and expand the scope of these income-generating activities in the future.

Raising Awareness

A major piece of GRAVIS work with women in the Thar more generally revolves around raising awareness. This takes place through training sessions, exposure visits, and rallies and other public demonstrations. By working in conjunction with the SHGs but also constantly reaching out to new women, GRAVIS organizes a series of events throughout the year. These activities not only provide information, but also motivate the women to realize their own capabilities. Many village women cite the presence of so many female field workers and women in leadership positions in this organization as an inspiration. Once they see these empowered women reaching out to them, they feel more confident to speak their own minds and act on their own behalf.

Exposure visits remain one of GRAVIS' most popular activities. SHG members gather for a short field trip led by GRAVIS' staff. They often visit watershed development sites, nearby field centers, the GRAVIS Hospital, local market places, block level administrative offices, Jodhpur, or Jaipur. GRAVIS often coordinates these exposure visits so that the members of several SHGs can meet each other and learn about different possibilities. Members often return from these excursions with a



broader understanding of the world outside their village. Having cast off some of shyness, they are

more likely to engage in new activities.

An exposure visit for rural farmers

Likewise, rallies and other mass gatherings give women a chance to make their voice heard. This is often a more comfortable setting for village women because there is strength and safety in numbers. In the past, women have held demonstrations in their villages about the issues that affect them the most, such as the dowry system, illiteracy, liquor consumption, and health problems. GRAVIS also tries to schedule larger events for special occasions like International Women's Day, Gandhi ji's birthday, or World AIDS Day. In that way, the women can become a part of a larger movement speaking out for change. This spirit of cooperation is central to empowerment alone they may be silenced, but together they can find their voice.

Working for the socio-economic empowerment of women in the Thar is not an easy undertaking. Over the years, GRAVIS has met a lot of resistance. Male relatives are sometimes suspicious while the women themselves are often apprehensive about talking with outsiders. And with long distances and so many household chores, finding time for meetings isn't easy. Many women initially didn't understand

the concept of the SHGs and felt unsure of how it would be. Extreme poverty can also make individuals short-sighted: it's difficult to save money when it's a struggle each day just to pay for water so the children can drink. Furthermore, barriers to literacy and capital make it difficult to launch a business. It takes time to develop confidence and trust after being shut away for so long.

Yet despite these challenges, GRAVIS remains committed to the creation of healthy communities, ones where women have achieved equal status in their own households. While there is certainly room for improvement specifically, GRAVIS hopes to broaden membership in the SHGs, promote more income-generating schemes, build more *taankas* to reduce the water-drudgery, and raise health indicators in the region there are also encouraging signs. The staff draws sincere inspiration whenever they see a woman stand up in a community meeting and speak her mind. An increasing number of women are saving money and taking loans from banks. The GRAVIS Hospital and Village Health Workers now promote healthy habits and teach patients how to prevent diseases. So as long as society continues to ask women to bear the heaviest

Finding Strength, Finding Hope

burden, GRAVIS will be there to help them manage that load. □

From the beginning of her life, adversities started happening to Leela Vyas. As a young girl living in a rural village in Phalodi block, she was betrothed in a child marriage. When her husband died before they had come of-age, the event forced onto Leela a heavy burden: She became a child widow. Because child widows are traditionally considered to be bad luck in some villages in the Thar, Leela was barred from the prospect of remarriage and thus the chance to start her own family. Facing scorn that she did nothing to deserve, Leela retreated into herself.

When Leela arrived at GRAVIS looking for work 15 years ago, she was a shy young woman. Most people considered her unattractive, and she avoided contact with strangers. She never spoke in public, and hesitated to leave the protection of her home. She was remarkably thin, with frazzled unkempt hair. But hidden beneath this reserved, frightened surface there was a determination that no one saw. Leela began to work hard in role as cook and helper. She treated those around her with loyalty and kindness. She had found her niche.

A few years after she arrived, Leela, on account of her hard work and gentle nature, became the head of the mess at Kalron Field Center. During her time here, she had taught herself to read and write. At a time of family difficulty, she adopted her nephew. And then, despite pressure from her in-laws, she purchased a house for her family with the money she had dutifully saved from her work.

In 1999, the opportunity came for Leela, by this time a member of GRAVIS' Executive Board to go to Finland on an exchange visit to GRAVIS' partner TAMY. Again, the community members that had once marginalized her objected to her leaving the country. Yet Leela was excited and brave, and she made the trip. Those days in Finland were full of novelty and wonder. She tried new foods, heard strange languages, and felt cold temperatures. Yet experiencing such unfamiliar things only made Leela stronger, opening her up to a world of possibility. When she returned to GRAVIS and her village, the change was apparent to all. Her villagers, astounded by her strength, greeted her return with a grand welcome. They now believe that more community members should pursue similar opportunities to see new places.

Now at 35, things are still happening to Leela, but in a different way. She has won the acceptance of her village and the admiration of her co-workers at GRAVIS. She has built a home for her family. To see her dance to Marwari folk songs during local festivals, it's clear that she has found peace with herself and her place in the world. GRAVIS provided the opportunity, but the reason for this transformation rests with her alone.

Leela's story is one of strength when the whole world seemed to doubt her. Her willpower and kindness are qualities that inspire everyone at GRAVIS. "Look at me," Leela said, addressing a crowded room at Gagadi during a memorial service for Tyagi ji. "Before I was so shy that I couldn't even speak in front of any person. And now, because of

Chapter 2.8

Empowerment of the Elderly

In the Thar Desert, the fabric of family life is fraying. Bourgeoning populations, increasing internal migration, and encroaching environmental degradation are all factors that stress families living in rural communities. The elderly, a segment of the population traditionally honored and respected in this area, now face a grim reality. Chronic health problems, the low status of widows, and responsibility for large families are just a few of the problems that they face. By concentrating on the health, social inclusion, and economic outlook of the elderly, GRAVIS has worked with the villagers to confront these problems. Forming a self-sufficient village requires the participation of every segment of the population; the foundation for a more inclusive future rests on honoring and caring for those who have come before.

The Need

At present, there are 77 million people over the age of 60 living in India; that number will rise to an estimated 178 million by the year 2030. Yet government pension schemes currently serve less than 10% of this population, and urban residents overwhelmingly receive these benefits. Without external assistance, and with younger members of the family leaving the villages for work in cities or other regions, the elderly must often fend for themselves economically. Indeed the inability to

work often means the inability to survive.

Yet because of health problems and the arduous nature of these tasks, the elderly often have a difficult time surviving with dignity. Walking kilometers in search of water or toiling for hours each day in the fields takes its toll on the body. With a life expectancy in the region of 59 for women and 58 for men, those who reached the age of 60 have already put in a lifetime of work. Yet they are not greeted with comfort and convenience, but rather with a set of steadily worsening health problems.

Most prominently, given the poor diet available in many regions of the desert, elderly people often suffer from malnutrition. This affliction takes hold slowly, sapping individuals of the energy they need to face the day. Left unchecked, these conditions can lead to a host of other illnesses, such as diabetes, anemia, arthritis, and rheumatism. Moreover, TB often ravages the immune system, making it difficult for sick people to recover. Similarly, declining eye sight due to cataract, glaucoma, and night blindness limits an individual's ability to function normally. While communities can check many of these illnesses through water security, preventative practices, and a lifetime of good nutrition, it is difficult for the impoverished to do so. Once a sickness does occur, medical care is often remote and expensive. For the elderly, acquiring treatment is a financial burden that leaves the aged dependent on their family for assistance.

Yet elderly residents do not only suffer from diseases. They also face a set of social problems that are particular to the region. In some communities, widows have been ostracized because they are considered to be bad luck. At the same time, elderly people, and particularly elderly women, generally receive the least amount of food, as the priority first goes to the more productive members of the family. And when the younger members of the family must migrate for work, the responsibility of looking after the household and the children suddenly falls upon the older generation. Given the old age, this is a difficult burden, and one often borne in silence.



Life is difficult for older people of the Thar Desert

These social problems can produce psychological troubles for the elderly. With ostracism and isolation comes a sense of aching loneliness, one that creeps steadily until it produces depression. Likewise, managing a household in the harsh conditions of the Thar can lead to stress and mental tension. Only an integrated strategy that addresses the social conditions, health status, and economic livelihood of the people can ease the plight of the elderly.

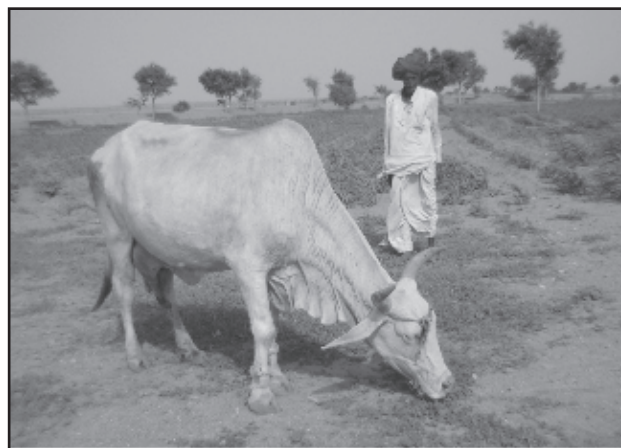
The Response

GRAVIS has long recognized the challenges facing the elderly in the Thar. In its earliest years, the organization established five day care centers to help more than 200 aged villagers. GRAVIS combined these centers with its opium de-addiction program, combating the drug that vexed the oldest segments of the local population. At the same time, every effort was made to include the elderly in the newly established people's organizations. In this setting, villagers could value the experience and wisdom of their elders, seeking their advice on how to plan for the future of the village.

As health issues became an increasing concern for the organization in the 1990s, the treatment of cataract, asthma, and TB patients became a growing priority. When the GRAVIS Hospital opened in 2001, providing free eye care to the villagers was a centerpiece of that health initiative. Since its inception, this service has proven one of the most popular programs at the hospital. After a villager receives an eye surgery, they leave the hospital with opportunities in front of them that they previously could not see. It's a welcome new start.

In recent years, GRAVIS added a new project designed to empower the elderly. In 2003, the ADOPT (Assimilated Development of Older Persons in the Thar) project began a new campaign to raise the socio-economic condition of disadvantaged older people. By pursuing this goal through an integrated strategy that combined water security, food security, and educational trainings, GRAVIS planned this program so that it could augment its existing activities.

Along with improving beneficiaries' quality of life, GRAVIS also tests models that the government and other development agencies can then apply on a wider scale.



A cow distributed to an older person under ADOPT project

While the possibility of wider change exists in the future, the benefits of this work are much immediate:

By participating in the program, beneficiaries gained not only rainwater harvesting systems but also some dignity. Elderly villagers once forsaken for a lifetime of poverty have received a second chance. There is dignity in having a meeting. There is dignity in having someone to listen to a story. There is dignity in the ownership of a new *taanka*. This program has helped to stem the tide against the erosions of the traditional support network for the



A training for older people on agricultural techniques

aged in these villages.

In order to meet the needs of the elderly, GRAVIS employs a number of interventions. Rainwater harvesting structures, such as the *taankas*, *naadis*, and *khadin*, provide water security in drought-scarred regions. Otherwise, older women have particularly difficulty making long trips to search of water. At the same time, the provision of fruit orchards and the distribution of milk cows bring sources of nutrition to places where these items are usually unavailable.

In its other agriculture and food security initiatives, GRAVIS couples seed banks and seed fair distributions with agricultural trainings and technical assistance. With this input, GRAVIS provides scientifically sound advice to help farmers to minimize risks. Also, for the first time in the ADOPT project, GRAVIS formalized its extensive network of scientists, consultants, and engineers to form a Technical Advisory Committee (TAC). This body helps not only with the planning of the program but also with on-site monitoring and implementing. By linking scientists and farmers in this partnership, each party has been able to learn from the other.

Similarly, GRAVIS has found a creative way to bridge the inter-generational divide within the villages with its work with the milk cows. GRAVIS insures these pure breeds so as to protect beneficiaries from sudden loss. Yet ensuring proper healthcare is one of the main challenges of animal husbandry in the Thar; the necessary medical facilities frequently do not exist in the villages. To remedy this problem, GRAVIS has trained paravets in the village. These individuals, drawn from the younger generation, attend training camps and then receive materials upon graduation. The result is that they can care for the new animals in the village while earning something for their services. In this way, the community gains as the different generations become interdependent.

Village Older People's Associations (VOPAs)

As with all its activities, GRAVIS knows that it is not enough to provide structures; it must also develop

the capacity of the people to care for themselves. So GRAVIS has established Village Older People's Associations to help organize the elderly of the village. The entire population gathers once a year in a *Gram Sabha* meeting to elect the members of these committees. Composed of 10-15 members each, these organizations represent all castes, genders, and sections of the village society. They provide a platform for people to speak about the issues that matter to them. Conversely, VOPAs are also the means through which GRAVIS disseminates nutritional, hygienic, and health information to the villagers. Above all, the VOPAs work in conjunction with other development committees in the areas such as VDCs, VECs, and



local *Panchayat* and provide an avenue for dialogue and interaction with the organization.

A VOPA convention

GRAVIS has endowed the VOPAs with significant programmatic responsibilities as well. They select the beneficiaries, supervise the project's implementation, and monitor the results once activities are completed. If there is a land dispute between two families, GRAVIS encourages the parties to settle the matter in this forum. In some cases, the VOPAs manage the *Gram Kosh* and payment schedules for completed interventions. All of these tasks occur with ongoing consultation with the GRAVIS staff so to prevent any problems from arising.

Given the norms of gender relations in this region, and particularly how these norms are usually engrained amongst the eldest generation, GRAVIS discovered that it was advantageous to create separate sub-committees for men and women. In this way, women can grow comfortable speaking in a forum where they will be free from the domination of men. The division of tasks for the sub-committees mirrors the division of labor within the family and village itself. Women's sub-committees plan and implement interventions related to rainwater harvesting, fruit orchards, and livestock. The men's meeting handles all matters relating to sustainable agriculture activities. After a few years, when the

field staff and the villagers agree that they are ready, the sub-committees are merged into a single VOPA where both men and women participate and take on leadership roles.

Change never occurs overnight. Silence hovers over these villages. Poverty has devastated them. Isolated settlements and strict gender roles have hardened this silence. But GRAVIS efforts on the behalf of the elderly have increased interaction between villagers, encouraged participation in development programs, and laid the groundwork for change. GRAVIS remains committed to this work, because these interventions and community-based organizations don't just help elderly

Adjusting along the Way

villagers; they also serve as a catalyst for the rehabilitation of entire desert communities. □

The dynamic changes that have occurred within the ADOPT program demonstrate GRAVIS' pragmatic approach to development. While ADOPT's initial efforts produced a solid dialogue with the elderly populations in these communities, the staff highlighted several areas that they could still improve. Many of these modifications dealt with the specific conditions, both environmental and cultural, of life in the Thar. Through meetings with implementing partners, the field staff, VOPAs, and the beneficiaries themselves, GRAVIS devised creative solutions to address these issues.

For instance, the long distances and sparse settlement patterns of the desert made it difficult for GRAVIS' engineers from Jodhpur to visit all of the proposed site locations. When dealing with the technical aspects of rainwater harvesting structures, it's important to consult with experienced scientists; these experts can best advise the staff on the optimal design and site placement. But the need to wait threatened to delay some of the scheduled interventions.

In response, GRAVIS organized some extra training sessions for the field workers, educating them on how to make these decisions independently. By adding a human resource component to the project and by increasing the interaction between the different levels of the organizations, GRAVIS reserved the expertise of the engineers for the most complex cases. Thus GRAVIS found a way to utilize the organization's resources more efficiently.

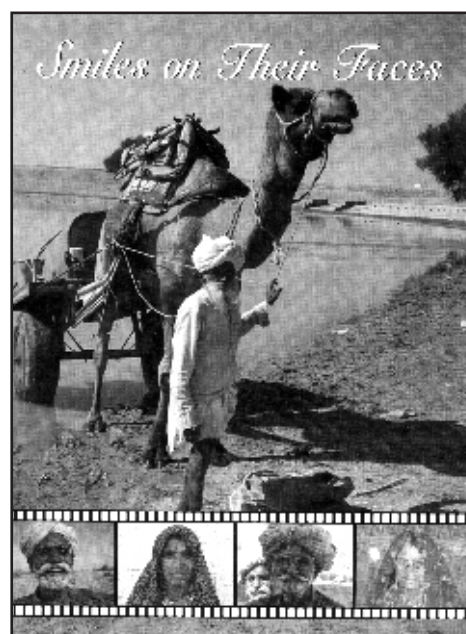
A second problem concerned the seasonal peculiarities of the Thar. Given the extreme summer, most villagers prefer not to work during this time; instead, many villagers migrate to other parts of the country for work. In addition, the people also spend some seasons celebrating local festivals. It thus became difficult for the field staff to meet its targets

for the construction new interventions at those times.

Over the course of several meetings, the project coordinators consulted with the field staff on these issues. They formulated flexible schedules that could match the cycles of the funding calendar with the traditions of the villages. GRAVIS refined this process so that construction would begin at a time most suitable for the local people. The project has progressed more smoothly since GRAVIS introduced these changes.

A third example dealt with the scientific species selected for the agricultural interventions. After examining the data from the first round of interventions, some species proved more suited to the harsh desert conditions than others. In the fruit and vegetable gardens in some villages, for instance, the *ber* thrived while the *anaar* struggled in the drought. Because the first few years are the most vulnerable time for a new plant, GRAVIS adjusted the composition of the gardens to reflect this experience.

Likewise, GRAVIS also switched the breed of milk cows distributed based on the feedback received from earliest interventions. In this case, research



"Smiles on their faces" - A case study booklet

showed that *tharparkar* and *rathi* cows were best suited to the desert conditions: these local breeds are high milk yielders that can survive with the extreme heat and little water. By giving pure breeds to the beneficiaries and also by providing insurance in case the cow dies, GRAVIS reduced the chance that the beneficiaries might face any problems on this front.

But GRAVIS has not only adapted to overcome the obstacles that have arisen. In response to the unexpected early success of the program, GRAVIS decided to publish a book about the project. "Smiles on their Faces" recounts the human stories that emerged from this project, detailing ten case studies from six villages. This book gave the elderly beneficiaries a chance to tell their stories and explain how the interventions have affected their lives. This publication also provided GRAVIS with an opportunity to raise awareness among outsiders of the problems facing rural elderly populations. In this way, GRAVIS became better able to advocate on behalf of the villagers.

Because the Thar poses a unique set of challenges,

publications such as these are especially important. Surviving in the desert requires a set of methods peculiar to this arid environment. While these technological responses have been time-tested and widely accepted within the Thar, they are not initially obvious to outsiders. Thus GRAVIS always makes an extra effort to explain the needs of this place to those without first-hand knowledge of the desert.

It's unrealistic to expect that a planned project will be executed flawlessly from the start. Minor setbacks and problems will always crop up. Life, and particularly life in the desert, has a habit of tossing obstacles along the way. But what really matters is how an organization rises to meet these challenges. With creativity, flexibility, and patience, the staff has worked together to tackle these problems. Only by combining the wisdom of the local people with the knowledge of technical advisors, only combining the dedication of field workers with the support of partner agencies, has GRAVIS succeeded thus far in helping the elderly of the Thar. This is the true process of development: uniting a diverse set of people, valuing each of their

Chapter 2.9

Mineworkers' Entitlements

Men, women, and even children are hard at work. They labor in cavernous quarries just off the side of the highway, open pits where the air is thick with dust. There are two million mineworkers in Rajasthan, making it the second largest industry in the state after agriculture. Of that number, some sources estimate that a shocking twenty percent toil as child laborers. Although GRAVIS is an organization dedicated to addressing rural poverty in the Thar, the problems of urban mineworkers has their roots in the challenges of desert life. Booming populations, creeping desertification, and failing crops have forced many villagers to move to the city for work. The vast majority of these migrants hail from the Scheduled Castes and Tribes, whose limited access to resources and possession of marginal lands renders them most vulnerable to drought. Over the past fourteen years, GRAVIS has devised an integrated approach to aid the mineworkers in their struggle to improve their working conditions, health, and vitality of their communities.

The Need

The mines in the Jodhpur and Nagaur districts of Rajasthan produce high quality sandstone and marble. Much of that sandstone has laid the foundation for the burgeoning expansion of Jodhpur and other cities and towns in the region. As for marble, the high-quality stones from Rajasthani mines were once used to construct the Taj Mahal and many of the other most famous monuments in India. Today, the marble from these same mines increasingly furnishes homes and offices throughout the world. Yet clearly, the workers have not reaped the benefits of their hard labor. The mines offer the only employment, but they don't offer much: Mineworkers report earning between Rs. 50-100 (US \$1-2) for each ten hour workday.

The working conditions in the mines are indeed appalling: For despite the murderous heat, when the Rajasthan's scorching temperatures soar in the

oven-like mines, the owners provide no shade, drinking water, or even toilets. Despite the constant threat of injury, the owners provide no tools or safety gear. And despite the deadly dust that causes silicosis and other lung diseases, the mine owners provide no first aid kits or health benefits. The onus for every aspect of their lives lies firmly on the workers.

Life outside the mines is not better than life inside them. Mineworkers settle on the outskirts of the city in teeming slums that stress the city's infrastructure. There they cram into villages without electricity or running water ones where the sanitation and education facilities are woefully inadequate. Meanwhile, the residents tell stories of owners who trap their children in a life of mining by offering alcohol, employ predatory lending practices and advances and through prostitution. In this way, a cycle of debt is passed from generation to



generation.

Pathetic conditions in mines of Rajasthan

The health prospects of the workers are poor. Malnutrition, prolonged exposure to the sun, and water insecurity characterize the lives of many mining communities. Even worse, silicosis, an incurable lung disease frequently contracted after extended exposure to the dust in the mines, ravages not only an individual's immune system but entire

families as well. When a husband falls sick after working, his wife and children must go to work to support the family. The burden continually falls on the physically weakest members, destroying any hope of escape from a life of poverty. Several studies undertaken by GRAVIS indicate that the life expectancy in these areas is less than 50. Workers who develop these debilitating diseases report that they do not receive adequate healthcare, compensation, or assistance.

In theory, mineworkers have extensive protection under Indian law. The Mining Act of 1952 mandates that first aid kits, masks, water lubrication of working surfaces to reduce inhalation of silica dust, and potable water to be available at all work sites. The statute also sets forth guidelines of a minimum wage and paid leave. At the same time, The Mines Amendment Act of 1983 stipulates that no person below the age of 18 should be permitted to work in any part of the mine. The Indian constitution and several international treaties such as the International Human Rights Convention and the Convention on the Rights of the Child to which India is a signatory, also prohibit child labor in the mines.

The reasons for this state of affairs vary, but the responsibility rests with all sectors of society. At its roundtable conferences and other workshops, social activists have noted non-enforcement of the laws derives from the failure of the government to devote sufficient resources to the issue. These shortcomings include the inadequate training of labor inspectors and the overburdening of district magistrates. At the same time, mineworkers note that owners have a vested interest in maintaining a cheap source of labor. Moreover, the mainstream public both in India and around the world has largely ignored the exploitation in these mines. Finally, the poverty of the mineworkers themselves has produced a deadly ignorance. Most remain unaware of both their legal rights and of the health hazards that stem from their occupation. The workers face a grave situation that demands greater attention from all sections of society.

The Response

During its earliest years working in the Thar, GRAVIS noticed that many villagers who worked in the mines were becoming sick from an incurable illness. When they investigated, they found that these people were suffering from silicosis. When they studied the conditions of the mines more closely, they discovered an intolerable situation. Yet at the time no development agencies were working on behalf of the mineworkers in this area. So GRAVIS organized two round-table conferences to bring attention to the issue. These successful events one in Jaipur and one in Jodhpur were the first time that any organization had managed to construct an alliance between government departments, independent organizations, and concerned



individuals in this part of Rajasthan.

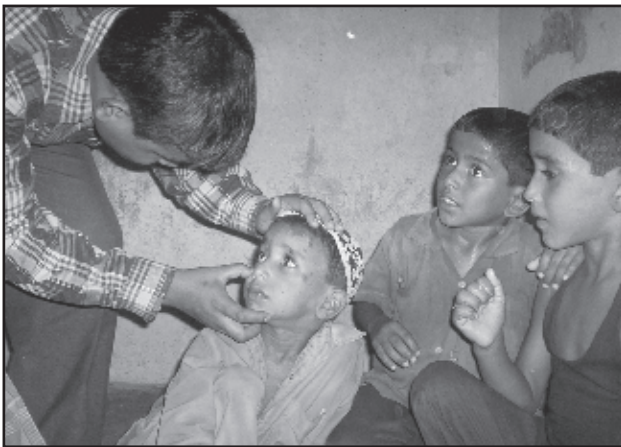
A conference on the issues of mineworkers

After conducting several surveys on the issue, GRAVIS began working with workers in Jodhpur and Nagaur districts. In order to balance action and advocacy, GRAVIS and its partner organizations set up a Mine Labor Protection Campaign (MLPC) in 1994. This initiative helped to define the problem and sketch out the solutions needed to address it. Accompanied by a series of awareness camps, public meetings, training workshops, the initiative provided an essential framework for defining the struggle and orienting the movement forward. The next year, GRAVIS facilitated the formation of the first union of mineworkers in Jodhpur. Over the course of the following decade, the activities undertaken have

grown considerably. Many groups have taken up the issue and in recent years have succeeded in generating industry and public attention on the matter. The fruits of these labors are now finally blossoming.

GRAVIS now pursues community-based action on several fronts. It knows that mineworking is in many cases the only option for many of these families. So the organization aims to organize the workers, educate them about their rights, and improve the conditions they face. Since the program's inception, GRAVIS has made health and safety of the mineworkers and their dependents a top priority.

At the same time, many women and children work in the mines because they don't have another viable option. To address that reality, GRAVIS also enacted programs to provide alternatives to these community members, specifically as cooperative shops for women and schools for children. In recent years, GRAVIS has expanded its mineworkers' entitlements initiatives to Bikaner and Barmer districts. Through projects such as the unions, the



schools, the Self-Help Groups, and the health camps, GRAVIS will continue to engage with these communities, helping them to empower themselves.

A health checkup of mineworkers and their families

The mineworkers face difficult conditions that won't disappear overnight; the alleviation of the poverty and exploitation endemic in this area requires a sustained commitment. Intransigence on the part of

some owners and officials has hampered progress. Yet GRAVIS has committed itself to prolonged struggle. This organization will continue to address the long-term environmental problems in rural areas that cause villagers to migrate. At the same time, only by combining small and direct actions with larger social changes can GRAVIS help the mineworkers to escape a cycle of poverty and destitution.

The Unions

After inspecting the situation in which the miners live and work, GRAVIS realized that they desperately needed organization and awareness. So after a couple of years of working with these communities and learning about their own concerns, GRAVIS decided to facilitate the formation of unions for the mineworkers. The first union in Jodhpur was established in 1995. The second, *Zila Gramin Vikas Sansthan*, followed in 2001, located in the *Makrana tehsil* of Nagaur district. Membership continues to increase, and has now risen above 4,000 member households.

At monthly union meetings both the general membership and non-members have learned about the entitlements due to them under the law. These gatherings have generated awareness about health hazards in the mines and compensation meant to be awarded for accidents and diseases. In the recent years, the mine owners have begun to participate in the meetings as well; this trend illustrates the unions' growing legitimacy. In these meetings, participants have discussed working conditions, shared responsibilities, and safety improvements to introduce in the future. GRAVIS believes that this dialogue is important because the unions can gain little through an adversarial approach; only through cooperation can all parties achieve progress.

In order to pursue the goal of ensuring basic human rights for the workers and their immediate families, the unions have actively implemented a variety of programs. First, awareness camps have addressed several issues related to mining labor, combating the ignorance prevalent in many of these communities. Through a style that's both

entertaining and informative, the facilitators recognize the conditions workers face, enumerate their legal rights, and discuss access to healthcare. First aid training workshops aims to help prevent injuries sustained on the job from becoming fatal. These camps occur frequently in the mining communities themselves. They are an essential first step to building a relationship with the mineworkers that can grow with more sustained programs.

Along with the regular meetings and awareness camps, the unions have begun other activities to revitalize these neglected mining villages. For instance, health camps provide information and treatment on a range of common problems. Schools allow students to get a decent education and chance to escape from the mines. Vocational trainings give community members the skills they need to pursue other enterprises. And working in conjunction with the women members of local SHGs, the unions have started two cooperative shops that sell goods to the community at a fair price.

Most significantly, perhaps, the unions provide an avenue for workers to submit claims and receive compensation for their ailments and disabilities. This legal aid is essential because the workers would not otherwise know how to navigate this process. GRAVIS plans to strengthen these linkages in the future so that a great majority of the workers will understand and participate in the process of exercising their rights. Filing Public Interest Litigation is one strategy that can bring about considerable change, and GRAVIS has pursued it over the past few years. In the process, it has brought attention to the issue and formed an alliance between concerned parties. In all cases, GRAVIS and the unions work to mobilize the communities, providing the workers and their dependents with opportunities for leadership and self-expression.

In the process of raising awareness in these areas, the unions have faced many challenges. Overwhelming hardship has firmly engrained a culture of silence and fear into these communities. The mine owners have threatened the workers for organizing and the union leaders for their activities. Furthermore, there is a constant influx of migrants

so desperate that they are willing to work under any conditions. Likewise, the semi-permanent nature of some of these communities means that some workers live there for a few months and then return to their villages. These obstacles have hindered the process of establishing a sustained and vibrant workers movement in the area.

In the coming years, the unions aim to show the workers that there is more value for partaking in its activities. GRAVIS will work with its partners to improve the union's negotiating powers. Some goals include streamlining the process by which silicosis patients certify their ailments and get compensation, instituting a formal system for winning claims (rather than a case-by-case basis), and following up more thoroughly on submitted applications. Results in these areas will increase interest and excitement among the mineworkers. And a stronger membership in the unions will yield reinvested dividends, increasing the visibility and virility of the institutions in the future.

Income-Generating Activities

While the poverty of many villages in the area forces most men of Rajasthan forces many men to take jobs in the mines, it doesn't always have to become a family affair. GRAVIS has committed itself to finding alternatives to mining for women and children. It's essential that women who bear the burden of caring for the family remain healthy enough to do so. In order to help them escape the physical and psychological abuse heaped upon in them mines, GRAVIS has helped women to organize Self-Help Groups. There are currently 24 SHGs that provide organization and a voice for female residents of the area. In these meetings the women learn about savings plans, opening bank accounts, taking loans, and operating small business.

These income-generating schemes connect the women with the cooperative shops that the unions have established. One major problem is that the mine owners control many of the shops in the area. Because entrenched poverty and a lack of transportation limits the people in their movements about the city, they often have no choice but to

spend their money in these stores. Furthermore, scourges like alcohol and other addictives suck away a substantial portion of the worker's wages. In order to confront this persistent problem, GRAVIS and the unions have established cooperative shops close to the mine areas. By buying and selling goods amongst themselves instead of relying on the shops of the owners, the workers' wages and profits remain within the community.

Schools

Given the despair and lack of awareness present in these communities, GRAVIS believes that education is a viable pathway out of the mines. The lack of nearby schools means children have to travel far distances alone. Too often these children end up working with their parents because they don't have a viable alternative; this exposes them to the dust that causes silicosis. GRAVIS has addressed this problem by constructing two primary schools in the area, serving 150 children. These schools provide all the necessary materials books, stationary, bags, and a mid-day meal and waive the enrollment fee so that the poorest students can attend. Teaching these children to read gives them a sense of empowerment, the chance to understand a contract before signing, and a chance to know their rights. A chance of a brighter future.

Health Issues

The greatest single threat to the livelihood and well-being of the mineworkers is silicosis, an occupational lung disease. Indeed it is estimated that half the mineworkers will develop the disease. A miner who begins work as a young man is unlikely to make it to his fiftieth birthday. But while the incapacitating effects of the disease are clearly visible, many mineworkers still don't understand the disease. It begins with an inflammation and an irritation of the lungs, then the organ's surfaces become permanently scarred and the air sacs collapse. Yet although the dust particles from the mines cause the disease, once its onset the illness then progresses on its own. In its latest stages, silicosis patients look feeble, elderly, and often have great difficulty breathing. Since there is currently no cure, prevention through damping systems, masks,

and air filters is the best course of action.

After an intensive advocacy campaign led by GRAVIS and HEDCON, the government of Rajasthan opened the State Pneumoconiosis Board to address this issue. This institution monitors and certifies cases of occupational lung disease. The board, however, has since closed. GRAVIS and HEDCON are currently taking legal action to ensure that this important body reliably serves the citizens.

More generally, in its awareness camps GRAVIS focuses its efforts on identification, prevention, and treatment of common health issues. Through street plays and other forms of community education, GRAVIS engages with the local population and raise awareness about the disease. But the medical camps don't only deal with silicosis. First aid and on-the-job safety are also important concerns for the mineworkers. In addition, health professionals also treat numerous cases of malnutrition, TB, and water-borne diseases. These camps strive to supply healthcare for workers who might otherwise not have access to it.

Advocacy

In the arena of mineworkers' entitlements, perhaps more than any other area in which GRAVIS' works, advocacy is an essential tool. The challenges facing mineworking communities are vast, and only public recognition of the problem will lead to sweeping change for the better. GRAVIS realizes this, and since its round-table conferences more than a decade ago it has combined its community-based efforts with a broader outreach initiative. Advocacy on mining issues takes many different forms: informing the workers of their rights; lobbying the owners and government officials to enforce the laws; organizing a system for workers to win compensation for injuries; and documenting the current conditions so as to educate the public.

Meaningful progress cannot occur without the support of the workers themselves. This means entering into a community and winning the trust of the people. By holding awareness camps, free medical exams, and distributing tools, GRAVIS has

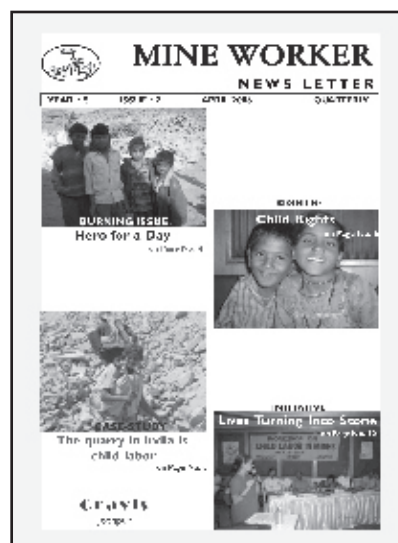
aimed to show the workers the direct benefit of joining with the efforts of the union. These events occur regularly throughout the year, cultivating a sense of civic participation and collective action. Working with its partners, GRAVIS has also organized numerous rallies and public meetings in order to jumpstart a dialogue in the communities themselves.

But merely raising awareness amongst the workers will accomplish little without bringing pressure to bear on the authorities themselves. Working with HEDCON, GRAVIS has fought to increase accountability in a largely lawless industry. GRAVIS efforts include Public Interest Litigation and lobbying the state medical board to fulfill its responsibilities. A variety of conferences, workshops and events open to the public seek to raise broader awareness of the mineworkers' conditions and the provisions and statutes designed to protect them. Through these venues, GRAVIS has forged alliances with government officials, social activists, and journalists dedicated to reforming the mining process in Rajasthan.

Specifically, the interests of the mineworkers and the provisions of the law intersect regarding claims for compensation. GRAVIS has filed petitions in court against the mine owners, arguing that they should compensate the workers for accidents that lead to injury and death. Each patient that develops silicosis needs certification in order to receive compensation. GRAVIS has also arranged legal council for miners, when necessary, and induced the mine owners to add the required safety equipment to their worksites. Filing compensation cases and public interest litigation is one way in which the sufferings of an individual will be eased while the public will also learn about the issue. While some progress has been made on this front, much more work needs to be done. The mine owners have a vested interest in tying up current claims and limiting future ones. So in the future, GRAVIS hopes to establish a formal system for compensation that is easy for the mineworkers to understand and use.

Yet these activities all require a basic knowledge of the conditions present in the mines. To that end,

GRAVIS has undertaken several surveys and



research projects to document the situation. GRAVIS then disseminates these materials to government offices, local development agencies, the media, and other concerned parties. Through these efforts, GRAVIS has begun to bring the plight

Mineworker, a GRAVIS newsletter

of the mineworkers to the attention of several human rights commissions in India and abroad. In 1995, GRAVIS published "A Report on the Round Table Conference on Mineworkers," a landmark report that initiated a dialogue on the topic. Likewise, in 2004 GRAVIS published "Tales of Woe," a book that examines the practice of child labor. GRAVIS and HEDCON have also developed two periodicals, one in English and one in Hindi: "Mine Worker" and "Khan Mazdoor" respectively. These materials accompany a website, updated regularly, that discusses issues relevant to mining.

Helping the mineworkers to escape a brutal and vicious cycle of poverty and marginalization is a long struggle. This issue requires a combination of community-based action and state, national and international level advocacy. It requires the organization of laborers and residents, and the establishment of cooperative shops, schools, and health camps. It requires urgent and sustained attention. GRAVIS knows that while its initial efforts

3

Looking ahead

Chapter 3.1

And Into the Future

While GRAVIS is proud of its hard work and past achievements, the organization is also constantly looking toward the future as well. For despite the advances of the past two decades, a grave development crisis still exists in the Thar Desert: Water insecurity and persistent droughts present a great hardship for millions of villagers. Desertification and falling yields threaten the ability of farmers and pastoralists to provide a nutritious and balanced diet for their families. Health indicators across the board remain abysmal, with women, children, and the elderly particularly affected. The regional literacy rate lags behind the national average, and students' access to quality educational resources remains limited. And, most significantly, pervasive poverty has stunted the capacity of the people to plan and provide for their own well-being. In short, GRAVIS believes that it has much more work to do. With these issues in mind, the organization has undertaken strategic planning exercises to map out its future activities.

Development is a comprehensive process, and this organization will continue to touch on all activities through a holistic strategy: Water, agriculture, health, education, and capacity-building represent the five fingers of GRAVIS' right hand. As such, these project areas will all feature prominently in the future. At the same time, GRAVIS plans to couple these activities with a robust advocacy campaign.

By generating awareness about the situation in the Thar, lobbying with the government, and networking with other organizations, GRAVIS aims to mobilize the general public to support programs and policies beneficial to the villagers.

In its efforts to empower desert communities, people's organizations have featured prominently. In the coming years, GRAVIS aims to help villagers establish more community-based committees and groups. In order to maximize their effectiveness, GRAVIS will ensure that these groups have the information they need to be successful. The organization will conduct regular monitoring and joint planning exercises with local groups. In addition, it will update its integrated curriculum for training sessions and workshops so that knowledge will spread more easily within communities. With support and advisement, GRAVIS strives to foster a network of self-reliant community-based people's organizations in the desert.

Providing water security through rainwater harvesting structures and alleviating droughts have always been central tasks for this organization. They will remain so in the future. GRAVIS will continue to popularize these rainwater harvesting techniques through interventions and demonstrations. By increasing the number of households utilizing these structures, GRAVIS will promote a proactive response to the chronic water shortages that plague the region. And by

enhancing the organization's ability to provide emergency relief, GRAVIS can better mitigate a drought's impact when it does strike.

GRAVIS strives for food security through sustainable agricultural practices. By enhancing outputs through rainwater harvesting strategies, constructing seed banks, and conducting training sessions on organic farming practices, GRAVIS will help improve the income and nutrition of those working on agricultural land. With vegetative cover in the desert reducing each year, GRAVIS will stress on bio-diversity and agro-forestry as the best methods to reverse these troubling trends. GRAVIS will also introduce greener ways of living, and, leading by example, take the most sustainable and environmentally friendly technologies into rural areas. Farming and animal husbandry are ways of life for a vast majority of villagers, so GRAVIS remains committed to helping them conserve and best utilize the dwindling resources of the area.

In the coming years, health will become a primary concern and major programmatic area of GRAVIS. The organization plans to strengthen the network of medical facilities available to the villagers in the region. This means training more Village Health Workers, expanding curative facilities at the GRAVIS Hospital, and supporting the establishment of primary health centers in remote areas. By creating more programs that address specific health needs, the organization will work with caregivers to mitigate the suffering caused by a number of treatable ailments. At the same time, GRAVIS will emphasize preventative practices, encourage greater family planning, and spread awareness of common diseases and the available treatment programs. Improving the health status of the region will require GRAVIS and its partners to popularize their programs, reaching out to the poorest and most marginalized members of rural communities.

On educational matters, GRAVIS will continue to open new schools in villages that lack adequate educational facilities. As the administrations of these schools mature, GRAVIS will hand them over to the community and the government to ensure

their proper functioning and sustainability. The organization also aims to raise standards in the schools through supplemental training sessions for teachers. Likewise, a revamped curriculum for its awareness workshops will lead to information sessions that are more applicable to the daily lives of the villagers. GRAVIS has committed itself to a simple but powerful goal: Primary education for all. Most crucially, this means increasing the rates of rural literacy, particularly among girl children.

A society cannot develop when half of its members do not have the most basic opportunities to advance the well-being of themselves and their families. For this reason, GRAVIS focuses on the empowerment of women in rural areas. In the future, GRAVIS will establish new Self-Help Groups and work with existing ones so that women can find organization and a voice in their communities. Furthermore, GRAVIS will encourage women to open income-generating schemes by popularizing savings programs and offering relevant training sessions. When these schemes mature, GRAVIS will assist the women in marketing their products by opening a cooperative shop in the city of Jodhpur. By working to provide water security in the desert, improve the health of mothers, and encourage young girls to attend school, GRAVIS strives for gender equality in the region.

This organization works to empower the elderly because it believes in restoring the dignity of life for every individual. GRAVIS will implement more interventions to boost the economic outlook and social status of often marginalized old age citizens. Specific efforts to provide eye care and battle malnutrition will improve the overall health of this sector of the population. The end result of these activities will be to repair the strained familial and social fabric of life in the Thar. In this endeavor, as in all others, GRAVIS has firmly committed itself to ending all forms of caste and gender-based discrimination in these communities.

GRAVIS will build on its existing efforts to improve the welfare of the mineworkers of the region. In its efforts to enhance working conditions in this sector, GRAVIS will increase membership in the unions,

spread awareness about the dangers of silicosis, and lobby for the provision of basic necessities in work areas. The organization will continue to assist sick and injured workers submit claims for compensation, and insist on the fair administration of the government's health board. Establishing income-generating units and constructing schools will provide women and children with an alternative to a life of hard labor. In addition, GRAVIS will intensify its advocacy program, strengthen linkages with other organizations, government officials, and mine owners, and launch new activities in other mining areas of the region.

On an administrative level, GRAVIS will pursue human resource development through regular training programs for its staff. One of the biggest future threats is that motivation of the staff a hallmark of GRAVIS' success for so long may falter as the organization continues to expand. By focusing on both the staff's ideological and practical development, GRAVIS believes that a capable administration team will be backed up by a sound, well-trained implementation team. As GRAVIS moves into its new headquarters, it will strive to create a better system of documentation with more transparent accounting. At the same time, it plans to open small field centers in more remote areas and to improve the communication between each of its outposts. Finally, by developing a more independent fund-raising system through revenue from the hospital and other local sources, GRAVIS will attempt to become a more self-sufficient organization fiscally. This will give the organization more flexibility to organize new

interventions and continue existing programs.

While it pursues greater independence in its administration and operations, GRAVIS will continue to nurture the relationships that have helped make it successful. These interdependent and collaborative networks bring an influx of new ideas into the organization and also allow the staff to share what it has learned. At the local level, GRAVIS will work with an array of people's organizations and identify new implementing partners within the Thar Desert. At the national level, GRAVIS will forge stronger linkages with government departments, training institutes, and NGOs conducting similar work in other areas of the country. And at the international level, GRAVIS will develop deeper long-term relationships with supporters, advocacy groups, volunteers, and friends. Working with a diverse set of actors for the betterment of the poor will remain a core feature of GRAVIS' operations.

While this organization continues to grow, some things will never change. GRAVIS will move forward by holding fast to its Gandhian roots, following the courageous example set by its founders and working closely with the people of the desert. With activities specifically tailored to the environment and culture of the villagers, GRAVIS strives for a continual engagement with the rural communities of the Thar. GRAVIS practices a type of development that, in its essence, is a process of inclusion: Empower the people and they will work to create sustainable solutions to the challenges they face. □

GRAVIS in records and facts

GRAVIS' field centers/offices

Jodhpur
3/437, 3/458, M. M. Colony
Pal Road, Jodhpur - 342 008
Phones 91 291 2785 317, 2785 549,
2785 116

Jelu-Gagadi
Village - Jelu-Gagadi, District - Jodhpur
Phone 91 2926 257 622

Tinwari
GRAVIS Hospital
Ghewra Road, Tinwari, Jodhpur
Phones 91 2926 268 610, 268 551

Khedapa
Village - Khedapa
District - Jodhpur

Baap
Village - Baap, District - Jodhpur
Phone 91 2921 277 323

Bhalu
Village - Bhalu
District - Jodhpur

Kalron
Village - Kalron, District - Jodhpur
Phone 91 2925 227 751

Pabupura
Village - Pabupura
District - Jodhpur

Chopra Dhora
Village - Chopra Dhora
District Jodhpur

Shekhasar
Village - Shekhasar
District - Jodhpur

Sursagar
Sodhon ki dhani, Sursagar
District - Jodhpur

GRAVIS' Governing Board

S. No.	Names	Designation in the Board	Gender	Background
1.	Uma Shankar Tripathi	Chair-person	M	Educationist
2.	Dr. R. P. Dhir	Vice Chair-person	M	Agriculture Scientist
3.	Shashi Tyagi	Secretary	F	Educationist
4.	Dr. S. M. Mohnot	Member	M	Zoologist
5.	Dr. G. M. Singhvi	Member	M	Retired Judge, Social activist
6.	Leela Vyas	Member	F	Development activist
7.	Teepu Bai	Member	F	Health worker
8.	Laxman Singh	Member	M	Farmer
9.	Saraswati Kumar	Member	F	Development Activist
10.	Rama Shankar Bhai	Member	M	Development Activist
11.	Dr. Prakash Tyagi	Member	M	Medical Doctor
12.	N. A. Ansari	Member	M	Civil Engineer

GRAVIS' publications till date

English Publications

S.No	Name of Publication
1.	Fluorosis in Rajasthan
2.	Drinking Water crisis in Rural Rajasthan
3.	Role of Women in Agriculture
4.	Crippling Human Life
5.	Traditional Agriculture and Rain Water Harvesting technologies of Thar desert
6.	Tales of woe
7.	A profile of mine workers of Jodhpur and dust borne diseases
8.	A report on the round table conference in mine workers
9.	Not letting a drop go waste
10.	Taking on the Challenges
11.	Rain fed agriculture in Thar
12.	Story of Thar desert degradation and revival- an NGO effort
13.	Malaria
14.	Smiles on their faces
15.	Tears of Dust
16.	Sitting on one carpet
17.	Remembering You
18.	Community Health in the Thar Desert
19.	Resource Building to peace building
20.	Steps into existence
21.	Drought Proofing of People in Thar
22.	Changing lives through watershed development
23.	Harvesting the rains in Thar
24.	The Circle of Life
25.	Community eye care in Thar
26.	Drought lives
27.	Silicosis: The Silent Slayer

Hindi Publications

क्रम सं.	प्रकाशनों के नाम
1.	करूँ मैं सुमिरन
2.	साँझ की लालिमा
3.	परम्परागत पेयजल स्रोत
4.	रोग निदान
5.	कहानी स्वच्छ पानी की महिमा
6.	पेड़ पौधे और हम
7.	एड्स
8.	मातृत्व : एक सुखद एहसास
9.	नेत्र रक्षा
10.	पशुपालन
11.	जैविक कृषि
12.	वृद्ध कल्याण योजनाएँ
13.	आओं समझें एच.आई.वी. को
14.	नई दिशा
15.	राजस्थान में घटता जल एवं बढ़ता फ्लोरोसिस
16.	आहत में राहत
17.	खड़ीन
18.	टांका और नाड़ी
19.	उठ जाग मजदूर
20.	उन्नत कृषि मार्गदर्शिका
21.	वृद्ध स्वास्थ्य
22.	संवेद्य स्वर

GRAVIS Newsletters

S.No	Titles of newsletters
1	खान मजदूर
2	सोच पानी की
3	बिन पानी सब सून
4	प्रतिबिम्ब
5	Mine worker
6	Water wheel

Major accomplishments of GRAVIS till date

Area wise activities	Numbers
Water security	
Taankas constructed	3,047
Beries constructed	409
Ponds constructed/renovated	199
Drought Relief	
Drinking water supply	13,226 families
Medical camps	74
Fodder banks	37
Agriculture and food security	
Khadins constructed	3,136
Seed banks	322
Horticulture units	1,522
Community pastures	4,956 hectares of land
Community forests	36 hectares of land
Compost pits	1,075
Watershed development	
Work days generated	2,189,701 days
Peoples organizations	
VDCs formed	414
SHGs formed	410
VOPAs formed	18
VECCs formed	40
VHCs formed	169
VECs formed	38
Health and nutrition	
Patients treated	54,016
VHWs trained	512
Eye surgeries/other surgeries performed	8,112
Birth deliveries conducted	1,240
Family planning promoted	32,214
Immunization provided	9,600
Supplementary nutrition provided	6,300 women and children
Education	
Schools set up	68
Teachers trained	80
Gender rights	
SHGs formed	410
Gender rights trainings	76
Ageing	
VOPAs formed	18
Livestock development	
Milch cows distributed	386
Peravets trained	54
Mineworkers rights	
Mineworkers organized	6,500
Trainings for mineworkers	78

Time line of important events at GRAVIS

Events	Time
Formation of GRAVIS	September, 1983
Gagadi center established	October, 1983
Shekhasar center established	December, 1983
GRAVIS Jodhpur office set up	February, 1991
Kalron center established	January, 1992
Baap center established	February, 1993
Launch of MLPC	1994
Khedapa center established	August, 1995
Sursagar center set up	1996
Bhalu Center established	July, 1996
Formation of HEDCON	January, 1999
GRAVIS hospital inaugurated	January, 2001
Pabupura center established	February, 2001
Demise of Sh. L. C. Tyagi	July, 2005
GRAVIS' 25 years	2008

Glossary And Abbreviations

Glossary

<i>Aagore</i>	- Catchment area of a <i>naadi</i>
<i>Aanganwadi</i>	- Government-run health center
<i>Anaar</i>	- Pomegranate
<i>Anwala</i>	- Medicinal plant
<i>Babool</i>	- Acacia tree
<i>Bajra</i>	- Pearl millet
<i>Bansuri</i>	- Flute
<i>Ber</i>	- Tree; jujube
<i>Beri</i>	- Percolation well used for harvesting rainwater
<i>Bhil</i>	- Scheduled Tribes (ST) common in the area
<i>Bigha</i>	- Local unit of land (2.5 <i>bigha</i> = 1 acre)
<i>Bordi</i>	- Zizyphus tree
<i>Chaach</i>	- Buttermilk
<i>Charpoy</i>	- Woven cot
<i>Chheen</i>	- Stone slab
<i>Dai</i>	- Traditional midwife
<i>Dhaman</i>	- Drought-resistant grass
<i>Dhani</i>	- Hamlet or cluster of households within a village
<i>Dhol</i>	- Drum
<i>Ghada</i>	- Earthen pitchers used to carry and store water
<i>Ghee</i>	- Butter oil
<i>Gochar</i>	- Community pastureland
<i>Gonda</i>	- Desert fruit tree
<i>Gram Kosh</i>	- Village fund
<i>Gram</i>	- <i>Panchayat</i> Locally elected government council serving a group of villages
<i>Gram Sabha</i>	- General village meeting
<i>Gram Swaraj</i>	- Gandhian concept of "village self-rule"
<i>Gramodyog</i>	- Income-generating unit based at Gagadi Field Center that produces bags of <i>masala</i>
<i>Gramin</i>	- Rural
<i>Gramin Vikas Vigyan Samiti</i>	- The Center for People's Science of Rural Development

<i>Guar</i>	- Cluster bean
<i>Jeera</i>	- Cumin
<i>Jhopa</i>	- Hut
<i>Jowar</i>	- Coarse millet
<i>Kalpavriksh</i>	- Local name for the <i>khejri</i> tree, literally “the plant capable of fulfilling all that one wishes”
<i>Khadin</i>	- Earthen bund embankment used for rainwater harvesting in agriculture
<i>Khejri</i>	- Life-giving desert tree (<i>Prosopis cineraria</i>)
<i>Khoj</i>	- Search
<i>Kisan</i>	- Farmer
<i>Marwar</i>	- Local name for the Thar Desert region, literally “land of death”
<i>Marwari</i>	- Local language of Western Rajasthan
<i>Masala</i>	- Spices
<i>Matira</i>	- Desert melon
<i>Meghwal</i>	- Scheduled Caste (SC) common in the area
<i>Moong</i>	- Green gram
<i>Moth</i>	- Legume
<i>Murum</i>	- Stone fragments used for the catchment area of a <i>taanka</i>
<i>Naadi</i>	- Pond used for harvesting rainwater
<i>Nala</i>	- Waterway
<i>Neem</i>	- Medicinal tree
<i>Nimbu</i>	- Lemon
<i>Oran</i>	- Community forest
<i>Panchayati Raj</i>	- The system of local government in rural area; see <i>Gram Panchayat</i>
<i>Pucca</i>	- Cement
<i>Purdah</i>	- Practice of keeping women behind the veil or in the home
<i>Rathi</i>	- Cow breed suited to the desert
<i>Roti</i>	- Flat, unleavened bread
<i>Samiti</i>	- Association
<i>Sansthan</i>	- Organization (how the villagers commonly refer to GRAVIS)
<i>Sarpanch</i>	- Village head
<i>Sarvodaya</i>	- Gandhian concept of “all rising but the last first”
<i>Sati</i>	- Practice of widow-burning
<i>Sewan</i>	- Drought-resistant grass
<i>Taanka</i>	- Underground storage tank for rainwater harvesting
<i>Taankli</i>	- Small cistern for household storage
<i>Talab</i>	- Pond
<i>Tehsil</i>	- Administrative division within a block
<i>Tharparkar</i>	- Cow breed suited to the desert
<i>Til</i>	- Sesame
<i>Vigyan</i>	- Science
<i>Vikas</i>	- Development

Abbreviations

ADOPT	-	Assimilated Development of Older Persons in the Thar
ANM	-	Auxiliary Nursing Midwife
CAZRI	-	Central Arid Zone Research Institute
DOTS	-	Direct Observed Treatment Short course chemotherapy
ECD	-	Early Childhood Development
GLR	-	Ground Level Reserve
GRAVIS	-	<i>Gramin Vikas Vigyan Samiti</i>
HEDCON	-	Health, Education, and Development Consortium, advocacy organization in Jaipur
JKGVS	-	<i>Jan Kaylan and Gram Vikas Sansthan</i> , implementing partner in Jaisalmer
JZPKMS	-	<i>Jodhpur Zila Patthar Khan Mazdoor Sansthan</i> , mineworkers' union in Jodhpur
KGS	-	<i>Kshetriya Gramotthan Samiti</i> , implementing partner in Bikaner
MLPC	-	Mine Labour Protection Campaign
NFE	-	Non-Formal Education
NGO	-	Non-Governmental Organization
OBC	-	Other Backwards Caste
SC	-	Scheduled Caste
SDS	-	School of Desert Sciences
SHG	-	Self-Help Group
SKSN	-	<i>Sucheta Kripalani Shiksha Niketan</i> ; the Tyagis' first organization in Rajasthan
ST	-	Scheduled Tribe
TAC	-	Technical Advisory Committee
TBA	-	Traditional Birth Attendant
VDC	-	Village Development Committee
VEC	-	Village Education Committee
VHW	-	Village Health Worker
VOPA	-	Village Older Persons' Association
VHAI	-	Voluntary Health Association of India
VSS	-	<i>Vasundhara Sewa Samiti</i> , implementing partner in Barmer
ZGVS	-	<i>Zila Gramin Vikas Sansthan</i> , mineworkers' union in Makrana <i>tehsil</i> of Naguar

Sprawling across the North Western plains of India, lies the world's most densely populated arid zones, the Thar Desert.

A fierce land, characterized by soaring temperatures, erratic rainfall, sparse vegetation cover and frequent drought, the valient people of the Thar inhabit the plains, many would render uninhabitable. Despite thousands of years of survival, its delicate eco-system is under constant threat of collapse. Depleting natural resources, recurring droughts, and generation of poverty have contributed to a developmental crisis. Water insecurity, malnutrition, illiteracy, unemployment, and preventable diseases are endemic. It is among this contrast of shimmering sarees and barren dunes, that the story of GRAVIS is set.



Gravis

3/458, 3/437, M. M. Colony, Jodhpur 342 008 Rajasthan, INDIA
Phones 91 291 2785 317, 2785 549, 2785 116, Fax 91 291 2785 116
Email gravis@datainfosys.net Website : www.gravis.org.in