



Knowledge is Power: India, Embalam, and MSSRF, Teachers of Agriculture and People

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Lastly, I want to thank **God**, who has shown me this great Earth He created and who has gently guided me down this path called life. Through Him, all things are possible.

Personal Background

Growing up in a rural farming community of 6,500, I have always been surrounded by agriculture. I lived on a farm for the first seven years of my life, which has influenced me considerably, and although I now live in a neighborhood, I can't help but feel most comfortable amongst the endless corn fields and vast expanses of open space. My father works for Case New Holland, a farm equipment manufacturing company, and my mother worked at John Deere for ten years. Although agriculture is a way of life for many in my hometown, I was unaware of the literally millions who depended on it for survival. At times I found that I resented my upbringing in a town surrounded almost entirely by farms. In a sense, I had a small-town girl's view of the world.

Prior to the WFP, I was extensively involved in the Student Food Drive, a Quad-Cities area canned good drive through local high schools that is considered the biggest of its kind in the nation. About one million pounds of food is collected and distributed to 120 food banks in the area. This was a major catalyst in my pursuit of hunger awareness both at the community level and beyond. In addition, in the summers of 2006 and 2007, I was employed by Wyffels Hybrids Inc, a local seed company, as a corn pollinator and detasseler. Although I spent countless hours walking through corn fields, it had scarcely crossed my mind such hands-on agricultural work would be relevant to the next summer's employment.

World Food Prize Foundation and Youth Institute Involvement

“The World Food Prize? What is that, an eating contest?” Such is the nature of questions I have fielded over the past several months regarding my involvement with the World Food Prize Foundation. I first became aware of “The Prize” in April 2007, when family friends discussed with me their attendance at the 2006 WFP Laureate Ceremony and Symposium. Intrigued, I proceeded to gather more information and contacted Lisa Fleming about future involvement in the Youth Institute. I was initially drawn to the unique opportunities the WFP provided to youth across the globe – chances to interact with well-respected dignitaries, leading research scientists, and influential policy makers, as well as the prestigious Borlaug-Ruan International Internship Program. I have always been fascinated with far-away lands, different languages, and the issues of hunger and poverty, so it seemed the internship was a perfect avenue to pursue these interests.

Before I applied for the internship, I attended the Youth Institute in October 2007 and presented my findings on India, bio-fuels, and women's rights. I was the first student to represent Geneseo High School (Geneseo, Illinois) at the Youth Institute and worked independently to research and write my paper. The three days of engaging conversations with diverse groups of students and adults taught me so much about hunger in a global context. It was one of the first times in my life I felt so at ease and excited with my surroundings – I thrived on the bustling activity of the Symposium. From the Laureate Ceremony to the Hunger Banquet to the YI paper presentations, I tried to absorb knowledge and information in all areas of food security and agriculture. I began to realize how pressing hunger is for millions of people, and that more urgent measures should be taken to alleviate the plight felt by so many, especially with the current onset of a global food crisis. I returned home from Des Moines with a broader world view of hunger and the enthusiasm to spread awareness of the issue to whomever I encountered.

The three-day Youth Institute in Des Moines confirmed my growing passion regarding the issues of hunger and poverty and led me to apply for a Borlaug-Ruan Internship. As a high-school junior, I did not think I had much of a chance at receiving an internship, as there were many exceptional, older candidates; nonetheless, I applied and hoped for the best. Following the interview I received the letter informing me that I had been selected as a Borlaug-Ruan Intern for the summer of 2008! I was, in a word, elated. My dream of pursuing hunger and poverty on a deeper level in a foreign country had finally grown to fruition. On June 13th, 2008, I boarded a plane at O'Hare International and left behind the corn fields of Illinois along with every person I knew and landed two days later on Indian soil in Chennai.

Background – M.S. Swaminathan Research Foundation (MSSRF) and Chennai, India

A bustling metropolitan area of more than six million, Chennai is located in the southeast Indian state of Tamil Nadu, where it is also the capital. My first taste of the sheer number of people living in the city was outside Chennai International Airport. This first view was filled with a copious amount of people restrained by, what appeared to me, metal barricades. Some held signs with names scrawled on them, others anxiously awaited a loved one's return, still others craned their necks to see above the crowds. I immediately scanned the faces and found Ms. R.V. Bhavani, my mentor, who I called "Bhavani," holding a sign with my name on it. Although it was scarcely 5 AM local time, the humid air was a sharp contrast to the cool confines of the airplane. As we lugged my baggage to the trunk of an old-fashioned white taxi and started the twelve kilometer journey to MSSRF, it dawned on me that I had made it, there was no turning back. *This* was India. I grinned from ear to ear.

After recuperating from jetlag and adjusting to the new sights, smells, and sounds around me, I began my acclimation with Professor M.S. Swaminathan and his Foundation, known by the acronym MSSRF.

Dr. M.S. Swaminathan worked in tandem with Dr. Norman Borlaug and is considered one of the leaders of the "Green Revolution." He introduced high-yielding wheat and rice varieties to India, and thus within four years ended the country's dependence on imports of grain and rice (<http://www.worldfoodprize.org/laureates/Past/1987.htm>). Professor Swaminathan was awarded the first World Food Prize, and used the award monies to establish the M.S. Swaminathan Research Foundation in 1988. For the past twenty years, since its inception, MSSRF has worked with a bottom-up approach, ensuring its actions and research are pro-nature, pro-poor and pro-women oriented (mssrf.org). A quote, "be the change you want to bring about," by Mahatma Gandhiji, aptly describes the manner in which the Foundation has worked for the past two decades. I strive to abide by this phrase. Thus, I can't imagine a more appropriate research center, one that cites Gandhiji's wise words as a guide, where I spent my summer. According to MSSRF's website, the Foundation's goals are determined as follows:

- "The conservation and enhancement of natural resources - particularly land, water, and biodiversity
- The promotion of sustainable and equitable agricultural and rural development
- The generation of greater opportunities for skilled employment, particularly for rural women and youth
- Reaching the unreached and voicing the voiceless in terms of techniracy [*technological literacy*] and gender equity."

The Foundation is comprised of six program areas: coastal systems, biotechnology, biodiversity, ecotechnology, food security and information, education and communication. After touring and learning about the various departments of the Foundation, I elected to work in the Honda Informatics Center, which is home to the Jamsetji Tata National Virtual Academy for Rural Prosperity (NVA). NVA deals with information and communication technology and its dissemination in the rural villages of India. One area I wanted to focus my research on was women, who often face considerable discrimination in the rural Indian setting. I was also intrigued by the real value of knowledge and information and how it can be used to empower women. With collaboration of my mentors, Ms. R.V. Bhavani, Dr. J.D. Sophia and Ms. Nancy J. Anabel, it was then decided I would conduct a small research study focusing on Embalam, a village in the Union Territory of Puducherry, India. Specifically, I researched the Village Knowledge Center (VKC) that had been established there in 1999. For the first few weeks of my internship I read numerous publications regarding MSSRF, NVA, and Village Knowledge Centers (VKCs) and asked countless questions to further my understanding of the Foundation's work in a rural context. I created three interview schedules containing profile prompts as well as questions that related to the Embalam VKC, a respondent's personal use, and information and technology. After several fine tunings and reshuffling of questions, I was prepared to conduct a field study, which would consist of twenty interviews over four days. On July 16th, 2008, I, along with my field guides, Ms. Rojarani and Ms. Girija, traveled to Embalam village in the Union Territory of Pudhucherry. The following includes the research premise, abstract, methodology, and research observations, analyses, and results.

V. ICT and Women as Transformers: A Case Of Embalam Village Pudhucherry – India

Information and Communication Technology (ICT)

ICT Globally

Information and Communication Technology, or ICT, is a broad term encompassing a vast array of methods and tools aimed at the creation, storage, and distribution of information and knowledge. ICT is commonly associated with an infrastructure of computers, the Internet, radio, television, and telephones. Recently, ICT has expanded into broadband connections, wireless networks, and more. In the world today, ICT is only thriving in developed countries. Developing countries, especially those in Sub-Saharan Africa and South Asia, have impressive growth rates in regard to increased access to telephones and ICT, but greater strides must be taken in order for these areas to match their counterparts in the developed world. More importantly, the problem of unequal access within developing countries needs to be addressed. This disparity is most apparent between rural and urban areas, and the gap is only growing. ICTs need to be used for sustainable agricultural practices, which will mark a shift from unskilled to skilled labor.

ICT In India

India's Government has made a commitment to guarantee food and economic security, as well as access to information among the disadvantaged sects of Indian society, crucial in bridging the rural-urban divide. ICT provides opportunities for the rural poor to obtain relevant, in demand information that is specific to location and needs. In addition, information received must be accessible and available in the local language, as well as shared in a variety of mediums – newspaper, computer, public system announcements, etc. By receiving this information, local problems concerning agriculture, health, sanitation, and government can be solved, thus improving the lives of villagers across rural India. Harnessing the potential of ICT will lead to equity in the social, economic, and gender realms. Especially of note is the ability for ICT mobilization to narrow the gender and caste divides still pervasive in rural India.

Village Resource Centers and Village Knowledge Centers

The idea of Village Knowledge Centers, or VKCs, began in 1992 during “Information Technology: Reaching the Unreached,” a dialogue at MSSRF, Chennai, India. It was originally christened as the Information Village Research Project, and was supported in 1997 by the International Development Research Centre of Canada, or IDRC. The first VKC was established in the Kizhur village, Union Territory of Pondicherry September 8th, 1998.

In 2004 “Mission 2007: Every Village a Knowledge Centre” was formed to bring together these concepts, with its goal of establishing a Knowledge Center in each of India's 600,000 rural villages by the 60th anniversary of Indian Independence, August 15th, 2007. Although this goal was not met, it brought together more than 200 partners in support of the cause, and continues to take significant strides in narrowing the rural-urban technological gap. Since 2007 this network has been referred to as “Grameen Gyan Abhiya (GGA)” which means Rural Knowledge Network.

Village Resource Centers (VRCs) act as the “hub” in the ‘hub and spokes’ model for information and communication transfer for Village Knowledge Centers (VKCs). The VKCs are wholly dependent on the designated VRC of the area for any and all potential problems – whether it is a technical malfunction, clarification of information, or supplication of more relevant content. VKCs aim to bridge the technology disparity that exists between rural and urban India, in hopes of improving the livelihoods of villagers across India. Rural prosperity is the ultimate goal. MSSRF uses a bottom-up approach, starting at the grassroots level and mobilizing local villagers to bring about their own “Knowledge Revolution,” similar to India's Green Revolution implemented by Drs. Norman Borlaug and M.S. Swaminathan in the 1960s. This Revolution is taking place in 600,000 villages where 70% of the nation's population lives. Moreover, it is imperative these so-called “unreached” receive relevant information in order to make progress for themselves and their communities.

Four linkages must be developed for Knowledge Centers to be effective:

- **Lab-to-Lab:** connecting those who work in science with those who provide information.
- **Lab-to-Land:** linking providers of information with receivers of information, or user of VKCs.

- **Land-to-Lab:** drawing on the wealth of knowledge villagers possess concerning traditional medicinal and agricultural practices and connecting them to science experts.
- **Land-to-Land:** impact of knowledge can be spread easily between rural individuals and families.

In addition, content, connectivity, capacity, care and management, and coordination should serve as five principal guidelines for the establishment of VKCs. Content refers to the type and relevance of information as it relates to the local village. Connectivity between a VKC and VRC, as well as other VKCS, government, and NGOs is an integral feature of MSSRF's plan. Capacity focuses on the villagers' abilities in learning and retaining new information. Management responsibilities are given to local villagers who serve as Knowledge Workers, making the VKC managed by its own clients. New means of income must be generated so as to sustain the Center for the future without MSSRF's financial support. Finally, coordination between the VRC and VKC, along with the local and state governments, is essential for creating partnerships that are beneficial to the village.

VKCs communicate using a combination of advanced and common tools, usually consisting of a network of telephones, personal computers, VHF (Very High Frequency) duplex radio devices, Spread Spectrum, and more. In addition, a Public Address System (PAS), bulletin boards, and a community newsletter, all in the local language of Tamil, ensure that all villagers have access to information regardless of literacy or training. Timely, demand-driven information is a key component to the role of the VKC in the process of dissemination. The uses of such VKCs are innumerable; information provided includes market prices, livestock, healthcare, education, employment opportunities, government schemes and entitlements, weather conditions, wave heights, and more. A three-fold approach is enabled, one that consists of giving information, training, and linkages that ultimately improve and empower the rural community. Along with providing relevant information, VKCs strive to be all-inclusive, not restricting use based on gender or caste. This has enabled the poorest villagers to build confidence and has provided ample resources for the alleviation of poverty. Thus far, fourteen VKCs have been established in Pondicherry, with the VRC Hub located at Pillayarkuppam. Pondicherry was the first site of a VKC and MSSRF and was chosen as such because a Bio-Village was already established in the same location. At present there are 15 VRCs and 93 VKCs in six Indian states.

National Virtual Academy for Rural Prosperity and NVA Fellows

In 2003 the Jamsetji Tata National Virtual Academy for Rural Prosperity (NVA) was founded through the collaboration of multiple government agencies, NGOs, and international partners. NVA's goals include enabling and empowering the most vulnerable individuals in society to develop and improve their livelihoods, and at the same time expanding their capacity of knowledge and skills. Ultimately, NVA strives to achieve rural prosperity.

It is imperative that rural women and men be mobilized to carry out the mission of the Jamsetji Tata National Virtual Academy. Therefore, Fellows of the NVA was initiated in 2004 to ultimately select one man and one woman from all 600,000 villages in India who would serve as role models and work at the grassroots level to spread the Knowledge Revolution. These Fellows hail from a variety of backgrounds and areas of expertise, occupation, and abilities. Though their interests vary greatly, all share a common goal and spirit of service. This dedication is essential to create a positive change in rural India. In a sense, the Fellows are "master trainers" of the Knowledge Revolution.

Fellows are selected following a nomination process that involves Partners of the NVA, academic and science institutions, government agencies, the private sector, and NGOs who all have close ties to rural areas across India. Fellows are not allowed to nominate themselves. The criteria for Fellows include leadership qualities, computer literacy, areas of expertise, community involvement, and capacity in various fields. Candidates selected as Fellows are expected to stay involved in the NVA program for at least three years as well as spend several hours a day in dissemination of information or other community outreach. There is no monetary stipend for Fellowship, nor is there a requirement for an advanced education and ICT training. NVA Fellowship is not solely an award program based on past achievements, but a launch pad that reinvigorates the individual's commitment to rural transformation.

Since 2003, more than 1000 individuals from a variety of backgrounds in rural India and abroad have been inducted as NVA Fellows. For a minimum of three years, Fellows work as "Torch-Bearers," starting at the grassroots, local level to uplift their rural communities. By utilizing an array of technology, from Internet and video conferencing to newspapers and puppet shows. In addition, NVA Fellows attend training sessions and workshops to build capacity and expertise and connect with other Fellows.

Abstract

The topic chosen for this study was “ICT and Women as Transformers: A Case Of Embalam Village, Pudhucherry – India.”

The following hypotheses were framed:

- 1) Access to relevant and locale-specific services using a combination of traditional and modern ICT tools through the Embalam VKC transforms the lives and livelihoods of rural women.
- 2) Knowledge Workers, acting as facilitators, undergo positive changes in their social and economic status.
- 3) Fellows of the National Virtual Academy (NVA) act as change agents in transferring their existing expertise, thus empowering themselves and advancing their own village and others in the Knowledge Revolution.

Rural villages in India are deprived of relevant information, and therefore the inhabitants cannot make well-informed decisions. Thus, the entire community suffers. There has been a marked difference in the access to ICT-enabled services, not only between urban and rural, rich and poor, but also among men and women. This is especially apparent in rural villages. In recognition of this disparity, MSSRF has focused on bridging this divide of access by harnessing the power of technology with its pro-women and bottom-up approach. The topic chosen explored how the ICT-enabled Embalam VKC facilitates women in accessing the services and improving their socio-economic status. Women of varying age groups and categories use the VKC. For the purpose of this study the three respondent categories were identified as NVA Fellows, Knowledge Workers, and Users. To explore the differential benefits to these aforementioned categories, three hypotheses were formulated.

The village of Embalam, in Puducherry Union Territory, India, was identified as the study area. Its VKC was established in 1999, and has had significant impact on the lives and livelihoods of the villagers. Women were selected as the target group for the study. They have been further classified into three respondent groups: 1) Knowledge Workers, the service facilitators; 2) NVA Fellows, the grassroots academicians; and 3) Users of the Embalam VKC. There are two female Knowledge Workers and ten female NVA Fellows at Embalam, so it was proposed to consider the total population of these two groups for the study. It should be noted there was an overlap in these two groups, as the two Knowledge Workers of Embalam are also NVA Fellows. Therefore, they were only considered as Knowledge Workers for the purpose of this study. For the user group, ten were selected from the group of one-time or repeated users of the VKC during the past two years using the purposive sampling technique with age, education, and occupation as the major criteria.

Both qualitative and quantitative methods were used for primary data collection. Secondary data was collected from workshop publications, directories, databases, etc. The data collected was coded, compiled, and analyzed using appropriate statistical tools and techniques. The results were presented in tables, graphs, and charts.

The outcomes were as follows:

- 1) Women users of different ages, education, and occupations gain self-confidence, computer literacy skills, improve learning capacity, and enhance their livelihood activities from the ICT-enabled services available at the Embalam VKC.
- 2) Women Knowledge Workers, as facilitators of the VKC find their work being recognized at the household and community levels.
- 3) Women NVA Fellows working for the horizontal transfer of knowledge find their expertise receiving wider recognition and are experiencing social, economic, and political empowerment.

This study showed ICT’s impact on the lives of rural women, and how these women in turn acted as transformers for others. Examples of this include NVA Fellows’ increased capacity for technology, which is gained while using the VKC. NVA Fellows then transform others by passing on their information and expertise. The outcome highlighted that the Knowledge Workers, NVA Fellows, and users are benefitting a great deal from the VKC. There was no doubt the VKC has been effective in disseminating information, but the consensus was an expansion of the VKC as well as updated infrastructure is needed. Due to time and resource constraints, the sample size was very small for the User group. Using the same methodology, future study of the Embalam VKC should be carried out in order to better understand the impact of VKC on women.

Methodology

The Territory of Puducherry (called Pondicherry until September 2006) is a former French Territory with a population exceeding 970,000, according to the 2001 India Census. The largest city is Pondicherry, which is also the territory's capital. Established in July 1963, it is comprised of a unicameral government with appointed, not elected, officials. The President of India appoints a Lieutenant Governor, and the current Lt. Governor is Bhopinder Singh. Puducherry's Village Resource Center (VRC) is located in Pillayarkuppam, serving as the hub for fourteen Village Knowledge Centers. There are three Dalit, four coastal, and seven agricultural villages. Embalam is a village approximately ten kilometers from the coast of the Bay of Bengal. It belongs to the Ariankuppam block and is part of the Pondicherry District. There are four main hamlets – Manaveli, Nallathur, Nadakuppam, and Rasappalayam. The village contains 940 households with a population of approximately 4,300. Over half of the villagers are between 21 and 40 years of age. Around 2/3 of Embalam inhabitants have achieved a high school degree or less.

Embalam is primarily an agricultural village, and typically paddy is the crop of choice. Most landholders have between one and two hectares and use irrigation for their fields. Apart from crops, cows and swine compose a significant portion of livestock (1400 out of about 1900 animals). Educational facilities are lacking past the middle school standard. Modern communications available in the area include: radio, public TVs, public telephone, mobile phones, and newspapers. Community and government organizations present are a bank, primary cooperative bank, Farmers' organization, Water Users' Association, milk society, and over thirty self-help groups (SHGs).

The Embalam Village Knowledge Center was established on January 5th, 1999. One of the oldest, Embalam's VKC has been in operation for almost ten years. It was the focus of the study not only because of its longevity, but also because of its significant amount of female users, workers, and NVA Fellows. It was also in relatively close proximity to Chennai. Thus, it was most practical to conduct interviews at Embalam in order to observe how these three categories of women have improved their lives because of the VKC.

There were three respondent groups who were the focus of the field study. The first group of individuals included the users who frequent the Embalam Village Knowledge Center, and who were the primary targets of the technology. By utilizing the database already available, the purposive sampling technique was employed to select the sample size. The criteria that varied among the sample include education, occupation, age, caste, and gender. Inquiries found which services were most beneficial to the villager, as well as what information was in demand. In addition, the interaction and perception between user and Knowledge Worker/NVA Fellow was taken into consideration. Users were asked about VKC benefits on an individual and community basis, as well as potential improvements to the VKC. Based on the 2006-2007 analysis of users, the age groups were determined as: below 26, 26 to 40, and above 40. Though female users are not as common as their male counterparts (45% to 54%), they were the sole focus of the study. Since Embalam is an agricultural village, occupations of the sample were agricultural landowner, daily wager, homemaker, student, and unemployed.

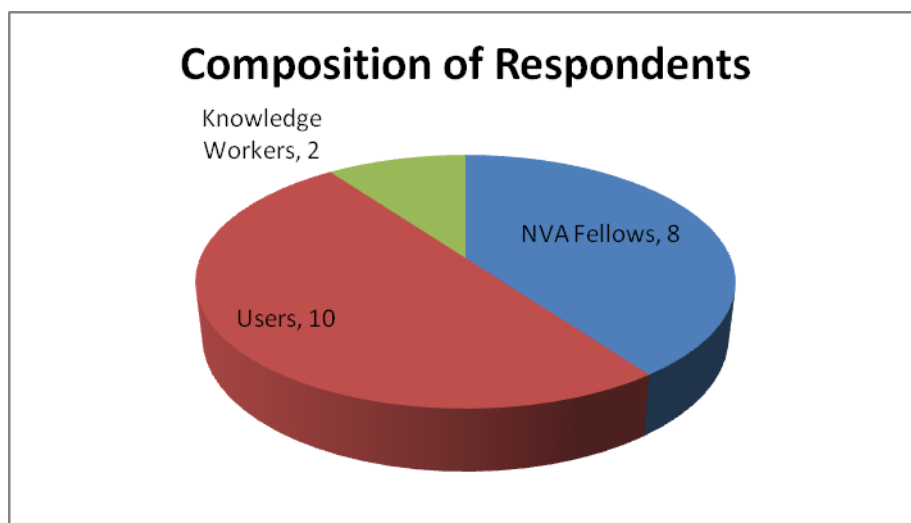
The second group of individuals included the Knowledge Workers at the Embalam VKC. This group's role was primarily to disseminate information to all visitors at the VKC. They are responsible for maintaining current, relevant information that is in demand based on the villagers' needs. In addition, they must have clarity on the concept of a VKC and its objectives, as they are working to bring about the Knowledge Revolution. Inquiries consisted of the impact of their work, how their life has changed because of their time spent at the VKC, change in the capacity before and after becoming Knowledge Workers, etc. In addition, the community's perception of these Knowledge Workers was observed. It was also important to take into consideration the delicate balance these workers must maintain, since many receive little compensation for their time. Ultimately, observations were made regarding the social and economic benefits the Knowledge Worker experienced.

The third group of individuals included the women NVA Fellows of Puducherry. There were 54 in total, with twelve coming from Embalam. Of those twelve, ten are female. Eight were considered for the study, as two were both NVA Fellows and Knowledge Workers. These female Fellows fulfilled multiple roles in their daily routines, which was examined. One position was in the domestic realm, where the female acts as caregiver and nurturer to the entire family. The economic sphere was also important, and oftentimes families rely on the mother figure to provide a sustainable livelihood. Finally, a woman's reach extends beyond the household into the community. It is possible the NVA Fellowship caused this role shift, from a narrow household position to a broader, community perspective. Information was needed on how the Village Knowledge Center contributed to this transformation. These Fellows must balance their

job as a housewife, provider, and change agent. Although it is a difficult task, they say it is worthwhile to continue their work in the Village Knowledge Centers as they serve as "Torch-Bearers" of the Knowledge Revolution.

The Purposive Sampling technique was employed when conducting interviews with Embalam VKC Users. This was necessary as there are hundreds of users, so it was impossible to talk to each individual. Instead, a cross-section of users was selected from a database based on education, age, occupation, and community. Although it was a small sample size in relation to the total population, the results accurately portrayed those who frequent the Embalam VKC. Due to the limited number of Fellows and Knowledge Workers from Embalam, every person was interviewed. There were two Knowledge Workers who currently manage the VKC, and twelve Embalam NVA Fellows. Only female Fellows were interviewed, eight in total.

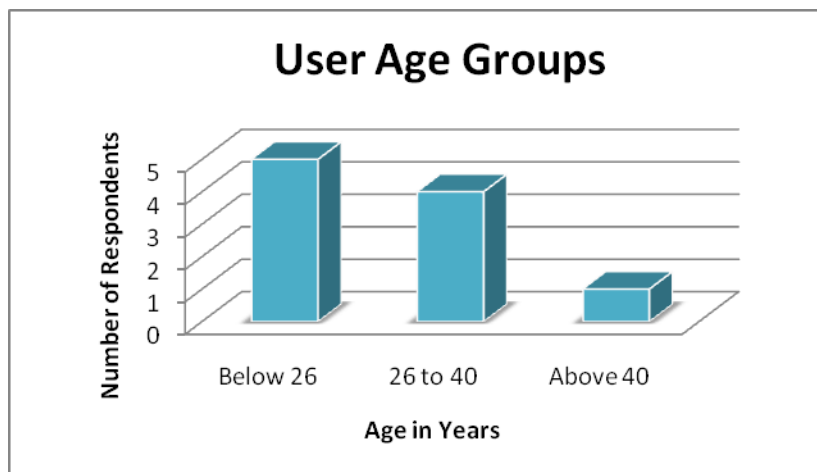
Profile of Respondents



In exploring the role the Embalam VKC has had in transforming the lives of rural women, twenty women were selected for interviews between July 16 and July 19, 2008. All the Knowledge Workers at Embalam participated, comprising 10% of the overall respondent population. The two Knowledge Workers, Indira Gandhi and Malathy, are also NVA Fellows, but for the purpose of this study were interviewed only as Knowledge Workers. Thus, eight women NVA Fellows were interviewed, and composed 40% of the overall respondent population. The ten female users were selected purposively so a wide range of age, education, occupation, and caste was represented. This is an accurate cross section of Embalam VKC users, which constitutes 50% of the sample respondents in this study.

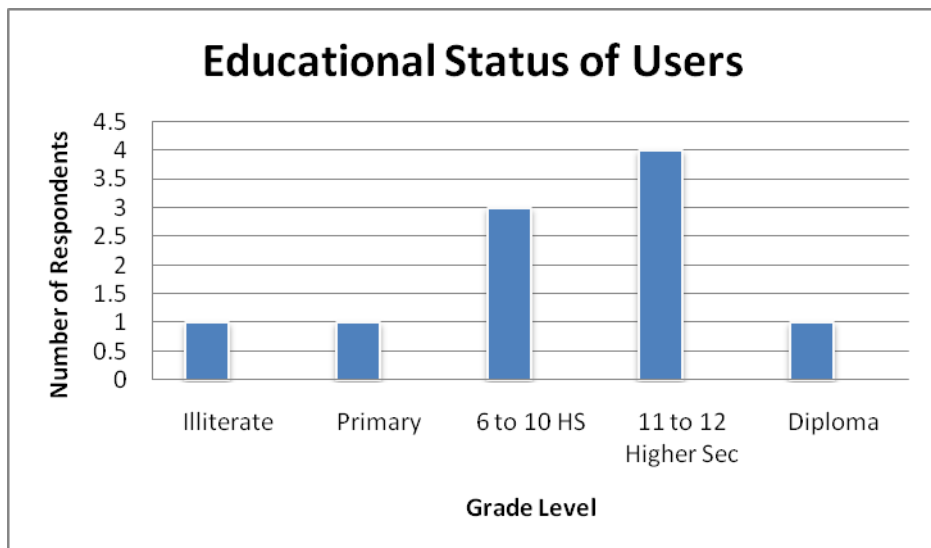
Profile of Users

Age



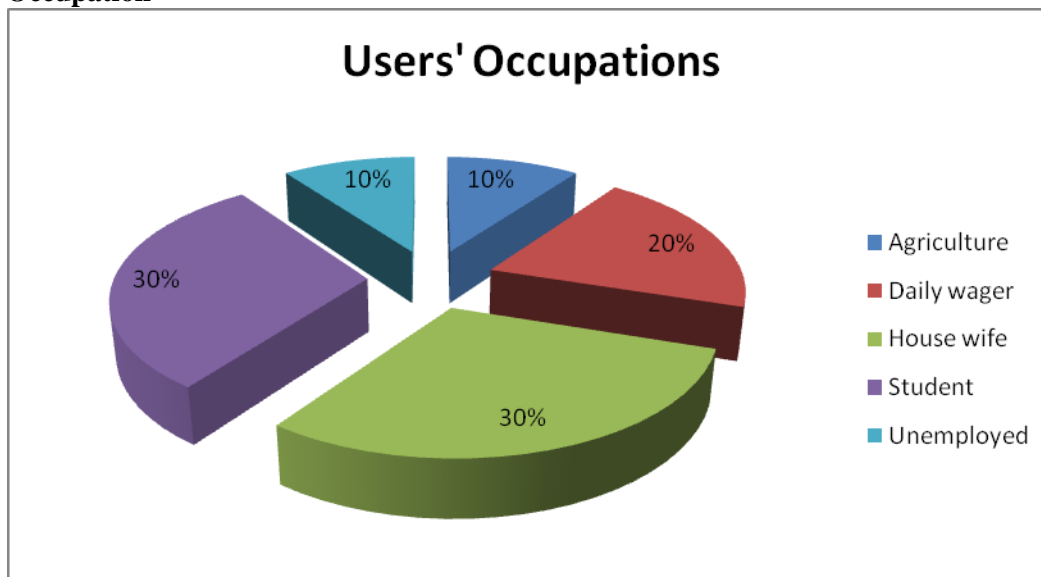
The ten women users of the VKC interviewed are between 12 and 57 years old, and are divided into three groups based on their age. Half (50%) of the respondents fall under below 26 group, while another 40% of respondents are between the ages of 26 and 40. Only one respondent, 10%, is above 40 years of age. According to databases, users aged 1-45 make up more than 90% of all VKC visitors, so this is reflected accurately, on a small scale, in the study. It can be inferred that younger women use the VKC not only because they might be students, but also because they have more free time and less obligations at home. In addition, younger women are more likely to be familiar with and aware of the technology available at the VKC, so they would be more inclined to frequent it.

Education



Users of the VKC come from all educational levels, and respondents were selected to ensure this was accurately represented in the study. An overwhelming majority, 90%, of users had completed schooling no higher than the 12th standard. In fact, half of all users had completed either the 9th or 12th Standard. Seven out of ten respondents, or 70%, of users had received education between the 6th and 12th Standards. Some are currently students in these grades, while others are adults not enrolled in higher schooling. Only one user is indentified in each category of illiterate, primary, or diploma level education.

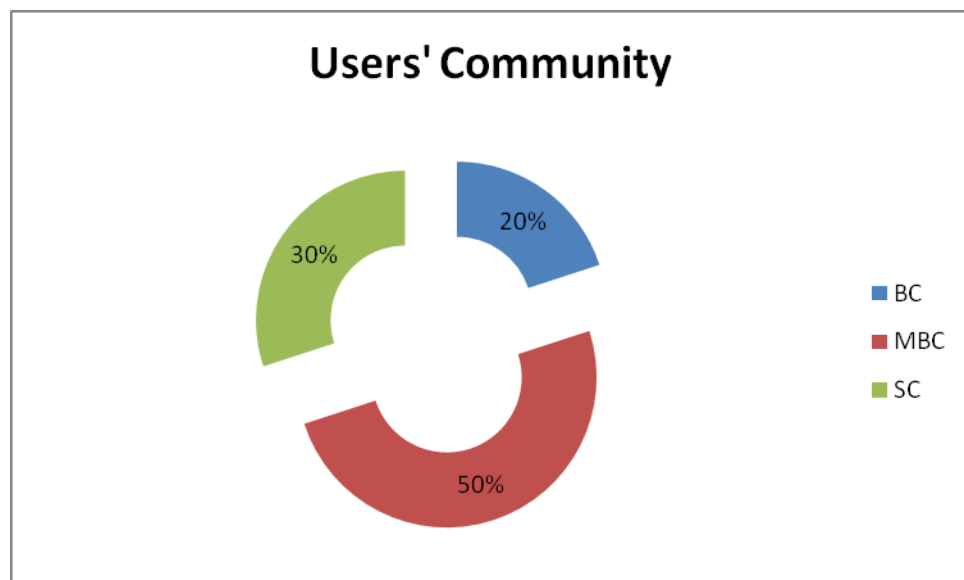
Occupation



Generally, a user’s occupation determines what information is needed and services accessed. There is a strong correlation between these two criteria, as the user’s performance in her occupation has been improved or enhanced based on

information from the VKC. 30% of the respondents are housewives, and another 30% are currently students. A smaller, but still significant group is the two respondents who are daily wagers. Only one respondent was an agricultural landowner, and one was unemployed, but looking for a job with the help of the VKC.

Community



Users represented all of the communities present in Embalam, with 50% belong to the Most Backward Community. Three of the users, 30%, belonged to the Scheduled Caste, which is normally socially excluded; MSSRF constantly strives to “reach the unreached,” and this translates to the Embalam VKC. Two other respondents were part of the Backward Class.

Respondents - Observations, Analysis, Conclusions of Users

Hypothesis: Access to relevant and locale-specific services using a combination of traditional and modern ICT tools through the Embalam VKC transforms the lives and livelihoods of rural women

I. Awareness

Knowledge Workers and NVA Fellows have spread awareness to the VKC, and their impact is clear – 40% of users interviewed say they came to know about the Embalam VKC directly through interactions with a Knowledge Worker or NVA Fellow. A few simply saw the notice board or heard about the VKC through a friend. Four respondents have been visiting the VKC since 1999 or 2000, while the other six respondents started using the VKC in the past two years, between 2006 and 2008.

Although users are aware of the VKC, none interviewed knew the full scope and range of available services. Computer-related technologies, such as the Internet, CD-ROMs, or NetMeeting, are popular and well-known. Those that are unfamiliar with computers, however, rely on the notice board or public address system (PAS) for information. Other services and information available includes the Community Newspaper (CNP), a touch-screen module, walkie-talkies, wireless, Open Knowledge Network, and databases. Information commonly requested is agricultural information, such as market prices or cultivation methods, and medical/health information, such as traditional treatments. Three students were purposively selected as respondents because the VKC is used by students most frequently. All student respondents use the VKC in enhancing their education – one uses CD-ROMs, while the others obtain their 10th or 12th standard Public Exam Results.

Every respondent agreed the VKC is effective in disseminating information whenever approached by visitors. The PAS is considered effective by many, but some are unable to get information from it while at their homes, as they live far from the VKC. If there are doubts or the information is unavailable immediately at the VKC, the VRC is then contacted in Pillayarkuppam through wireless technology.

II. Uses and Benefits of VKC, Services

Of the ten respondents interviewed, five said they frequented the VKC one or two times per week and stayed for between 45 and 180 minutes. Their purpose ranged from obtaining agricultural information to public exam results to receive training on SHG accounts. The other 50% of respondents vary in their frequency as well as time – one user goes to the VKC daily for the Microsoft Unlimited Potential Program (MUPP) course, while another only goes once a month to receive agricultural information. When asked where users receive information regarding agriculture, weather, and market prices, all said they use the VKC. The information is attained in a number of ways, both directly – through the CNP, notice board, or PAS – or indirectly, through an elder male relative who uses the VKC or the assistance of a Knowledge Worker.

Information and knowledge acquired at the VKC is applied in a practical, useful manner in users' lives. Sasikala, 23, resolved a lice problem through information provided in the CNP, and her parents are now enrolled in NREGP, a 100 Days Employment Guarantee Program, because of a VKC announcement. Another user, V. Sangeetha, recently completed the MUPP course and is using the VKC for additional practice while she also looks for a job. Through the VKC Santhi was connected to a government-run training program that provides her with a stipend for 1,500 rupees (Rs.) per month. Rajalakshmi is an agricultural daily wager and obtains agribusiness information at the VKC, saving time and money as the knowledge is immediately applicable to cultivated land. Along with new technologies and methods, the VKC also provides current market prices. This enables farmers to receive higher prices and in turn higher profits.

Users gain economic and social benefits for themselves and their families when they utilize the Embalam VKC. Many respondents are able to grasp knowledge about computers and technology, while students can pursue higher studies. It is vital that in today's modern and technological world to be well-versed on computers. Through the MUPP course, three respondents expanded their capacity for technology. In fact, Jayabharathi was only able to participate in MUPP at the VKC since it was too expensive outside, where she would have had to pay Rs. 1,500. She feels that her training at the Embalam VKC gave her more in-depth knowledge than her counterparts who paid for MUPP at other facilities besides the VKC. Users' children can now spend their holidays in a practical manner. Azhagarasi understands more in school, especially in math and science, because she uses the VKC a few times a week to learn through CD ROMs and computers. Such computer training boosts the confidence of users. In one example, Eggavalli earns money through SHG savings and is no longer dependent on her husband, and is the "chief minister of [her] family now." MUPP training supplied Sasikala with the opportunity to work with computers, and gave her confidence in pursuing other outside work.

III. Additional Information/Suggestions

Respondents were asked for their input regarding improvements and suggestions for the Embalam VKC. Five of the users (50%) believe the Embalam VKC needs to be expanded to a larger building and have newer computers, as it is currently insufficient. MSSRF and the Embalam VKC should take this into consideration and begin the search for a larger, centralized building that would adequately deliver services to a wider range of people. Along with the VKC's expansion, users would like to see more services available, such as a Xerox machine and a public telephone booth. Eggavalli would like the VKC to have micro-enterprise training in candle making and incense, while Sasikala wants more information from the VKC on gynecology awareness. It is concluded that the VKC should continue to update its content and ask frequent visitors for their input so their changing demands can be addressed most effectively in disseminating information to the community.

IV. Willingness to pay fee for VKC services

Overall, users expressed a willingness to pay a small fee for services, such as Internet browsing and printouts. In fact, several already pay for Internet use or the CNP. This option should be explored further so in the future the Embalam VKC can be self-sustaining.

V. Perception of Knowledge Workers/Fellows

Every user interviewed praised the Knowledge Workers' timely and polite assistance. Knowledge Workers give only the utmost respect to visitors and remain polite even when the same question is asked multiple times, such as Azhagarasi's inquiries regarding CD-ROMs. Knowledge Workers and their abilities are well-known in the Embalam community, but awareness about NVA Fellows is lacking. Of the ten user respondents, half have never interacted with NVA Fellows. Thus, there needs to be a bigger, more visible presence of Fellows at the VKC level. Those that are

familiar with the Fellows said they have been helpful in obtaining information ranging from cow maintenance to SHG loans to CD insertion. They are very knowledgeable and willing to help in whatever manner asked of them.

There is a deep respect in the village for Fellows and Knowledge Workers because they are the individuals who help everyone, and are good instructors as well as friends. These ambassadors are great guides for the community and their helpfulness is very much appreciated. Though some Fellows and Knowledge Workers have limited education or training, they are still able to access computers and provide all kinds of information, and for this, both the users and the wider community are proud. It is clear the Knowledge Workers and Fellows are inspirational and act as role models for the younger generation – one day, Azhagarai would like to receive the Fellowship. Eggavalli states that NVA Fellows and Knowledge Workers are revered as God or forefathers.

Respondents - Observations, Analysis, Conclusions of Knowledge Workers

Hypothesis: Knowledge Workers, acting as facilitators, undergo positive changes in their social and economic status.

Knowledge Workers Case Study One – Indira Gandhi

Indira Gandhi is thirty-one years old and has completed the 9th standard. She is currently a Knowledge Worker at the Embalam VKC and about three times a month works on micro-enterprises – phenol and soap oil production. With her husband, she has one daughter and one son. She first found out about the VKC in 2005 while taking her cows to the milk society where she wanted to consult a doctor. She needed a doctor's number since the milk society was closed that day, so Indira went to the then Embalam Knowledge Workers, Sundari and Dhanalakshmi. It was at the VKC where she received the information she needed with the assistance of the Knowledge Workers. Indira was happy that these volunteers helped her cure her cow, as the information provided was very useful. She was inspired by this experience and wanted to become a VKC Knowledge Worker. In addition, she wanted to develop her skills and capacities in technology, disseminate information to the community, and work in social service. Indira Gandhi was selected after an interview process and has held the position of Knowledge Worker at Embalam since November 2005.

In preparation for her position as a Knowledge Worker, Indira was trained in general management of the VKC, such as taking care of it and greeting or assisting users. She also had training in agricultural seed prospecting and cultivation (SRI), mushroom cultivation, eye defects screening, computer hardware, coding of user registers, and ornamental seashell making. As a Knowledge Worker, she is responsible for providing information regarding employment, fodder, agriculture, cultivation methods, micro-enterprises, maintenance of SHG accounts, education through CDs, and health. She receives information from the Mangalam Society regarding the Marriage Legal Act, and then disseminates this information to villagers. In addition, she downloads and distributes applications for employment and also helps in submission and contacts organizations for employment. Indira also manages the Community Newspaper and assists visitors of the VKC with whatever services or information is needed. In one instance, one person came in and she informed them of symptoms of cancer, and so the person visited the doctor and was cured. Indira's timely help saved someone's life. She works daily at the VKC from about 9:30 to 6:30 pm, and helps with the Microsoft Unlimited Potential Program at 7pm. For her time and efforts, she is given an honorarium of 800 rupees a month plus reimbursement for transportation costs.

She knew very little before becoming a Knowledge Worker, but Indira wanted to learn more about micro-enterprises and improve her computer skills. Payment was 500 rupees for micro-enterprise training, but at the time she could not afford it. She then received free training at the VKC, and is now earning money in soap and phenol production. Apart from the VKC, she also assists NGOs, the community society, and the government in implementing health camps and services. Her expertise is used in the distribution of polio drops, elephantiasis survey, and conducting population censuses. She works on community development and social services in the evenings as well.

Although being a Knowledge Worker is a major responsibility in Indira's life, she must balance work at the VKC with other obligations at home and with her family. Indira starts her day at 4 am to take care of the household chores such as cooking. Her husband maintains the cow in the morning, while she takes care of it over lunch. She has received cooperation and support from both her children and her husband, so balancing work at home and at the VKC has not been difficult or strained. Although she spends a lot of time at the VKC, her husband seems to continually encourage her to keep up the good work at the VKC, even when she has doubts. She sometimes has frustrations and wants to stop working

at the VKC because it is stressful, but her family provides support and encouragement, as they want her to learn and help at the VKC.

Indira has been recognized by society after joining the VKC and the villagers have given due respect to her position as Knowledge Worker. Her influence has even spread beyond Embalam, to seven other surrounding villages, where individuals are seeking her out for information since they know she is a credible source. Her assistance has caused the other villages to have interest in a VKC in their own area. Her experience is very useful, as she is able to train neighbors nearby. Whatever experience she has can be disseminated and delivered. Users say her deliberation is good. Her children are gaining computer knowledge as well and their education has benefitted greatly. She formed a self-help group (SHG) and is now president of a SHG. Along with gaining knowledge and training, Indira has formed linkages and gotten exposure to a variety of people and organizations.

Through the opportunities at the VKC, Indira is no longer financially dependent on her husband. Whatever experience she has acquired is “surely useful” to her in some way. Her children’s studies have benefitted, as she was recently able to receive a loan for up to Rs. 30,000 for their higher education. This was only possible through the SHG. Indira’s economic status has improved because of such connections, and now she is contributing to her family’s income. Her position as a Knowledge Worker has in turn affected her social standing in a positive light – she is a well-respected member of society and is aptly recognized for her contributions. She is very proud and has a high level of confidence; for now and in the future, Indira says, “I will stand on my own legs.”

Knowledge Worker Case Study Two – Malathy

Malathy is twenty-six years old and has completed the 12th standard. Presently she is a Knowledge Worker at the Embalam VKC, and this is her primary role. She has one daughter and one son. Initially, she found out about the VKC through an NVA Fellow and attended an interview to become a Knowledge Worker. Sundari (now an NVA Fellow) and she decided they wanted to work with and serve the community at a local level, delivering and assisting with information in the VKC. Prior to becoming a Knowledge Worker, Malathy was active in social work from 2000 onwards. Malathy worked in the health department and specialized in giving information for pregnant women, immunizations, polio drops, and iron tablets. She also worked closely with the government in creating awareness programs.

Malathy was trained as a Knowledge Worker and received general management of the VKC and communication training. This included how to receive and assist users at the VKC. In addition, she learned micro-enterprises, such as mushroom cultivation and soap or phenol oil production. Malathy thought this training was sufficient for her to be an effective and helpful Knowledge Worker. As a Knowledge Worker, Malathy is responsible for maintenance of the notice board, providing need-based information, conducting exposure visits, and mobilizing training programs. In addition, she maintains, documents, and codes six to seven registries monthly. Like Indira Gandhi, Malathy is learning soap, washing powder, and phenol oil production, but she has only completed the training. In the future, she would like to start micro-enterprises.

Before Malathy used the VKC, she was intimidated by computers, especially because it was all in English. Her communication skills were limited, and she was a simple housewife who was unsure who to approach for information. In essence, she was unaware of important information and rather shy. However, as a VKC Volunteer, she completed the MUPP course and learned computers in the local language of Tamil and conducts Tamil typing training programs. She is now computer literate and well-versed in MS Word, Excel, Access, and the Internet. Malathy is considered an expert in PowerPoint. Other skills she has developed include multimedia module development, downloading applications, distribution, and announcement of public exams. She receives Honorarium of 800 rupees per month for her work at the Embalam VKC, as well as local transport costs. Her verbal communication skills have also significantly improved, and she is more confident and sure of herself. She can access a databank of local knowledge. In one instance, she compared the symptoms of one lady visitor to the information in the databank and determined the visitor had early signs of cancer and recommended she see a doctor. She helps illiterate visitors and explains the information so they can recognize and understand it. There has been no difficulty for Malathy to balance work at the VKC with other obligations. However, her children are her first priority, and on holidays or during festivals, she brings them to the VKC.

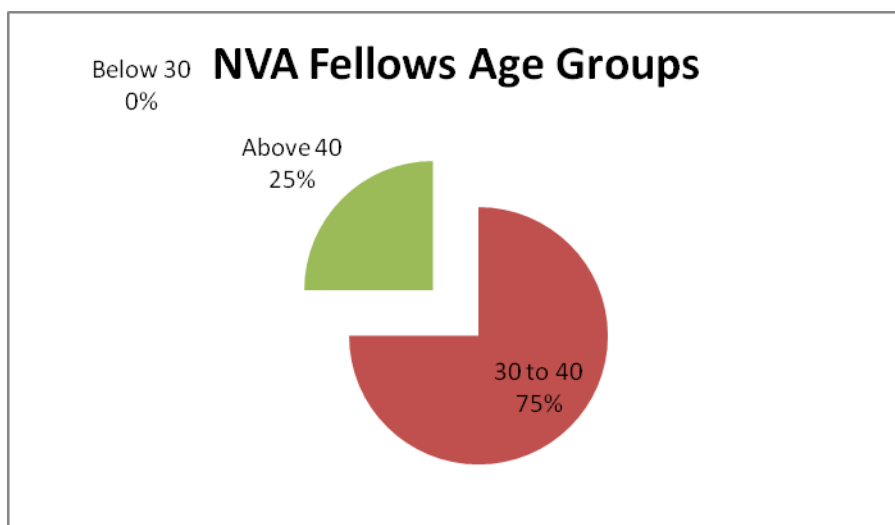
Malathy received special recognition from the government and gave her a first prize worth 250 rupees. Ten villages participated and she was selected for her work on malaria awareness. She has received recognition from her family and community for the work she is doing at the VKC. People contact her for information and thus she experiences

special status in the community. Malathy lives fairly far from the VKC, so she is spreading knowledge to her neighbors who would otherwise not have access to it. She is very happy to give the information needed, and her neighbors would like to receive employment news. There has been no negative impact, and the villagers are very happy to know her and be able to interact with her – Malathy is a valuable asset and member of the community. Her computer knowledge has greatly improved and she wants to own a computer. In the future, Malathy would even like to run her own computer center and start micro-enterprises.

It should be noted that both Indira Gandhi and Malathy are not only Knowledge Workers but also NVA Fellows. However, for the purpose of this study, they were interviewed solely as Knowledge Workers.

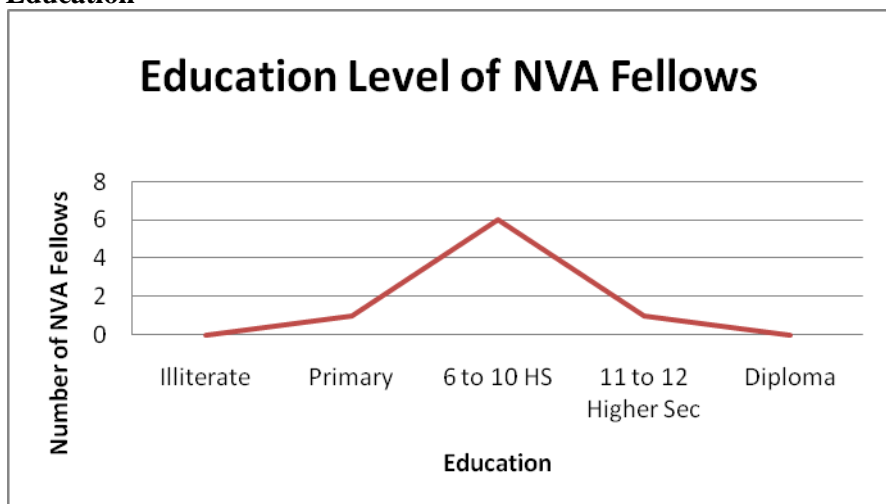
Profile of NVA Fellows

Age



Although there is no age limit or requirement to be a Fellow, six out of eight (75%) NVA Fellows from Embalam are between 30 and 40. There was discussion in interviews on how age should be a factor when selecting NVA Fellows. Fellows stated that mobility is necessary in the Fellowship. Fellows are active, contributing members of society, so a person’s physical condition should be taken into consideration for the NVA Fellowship. Only two Embalam Fellows, 25%, are above forty years of age.

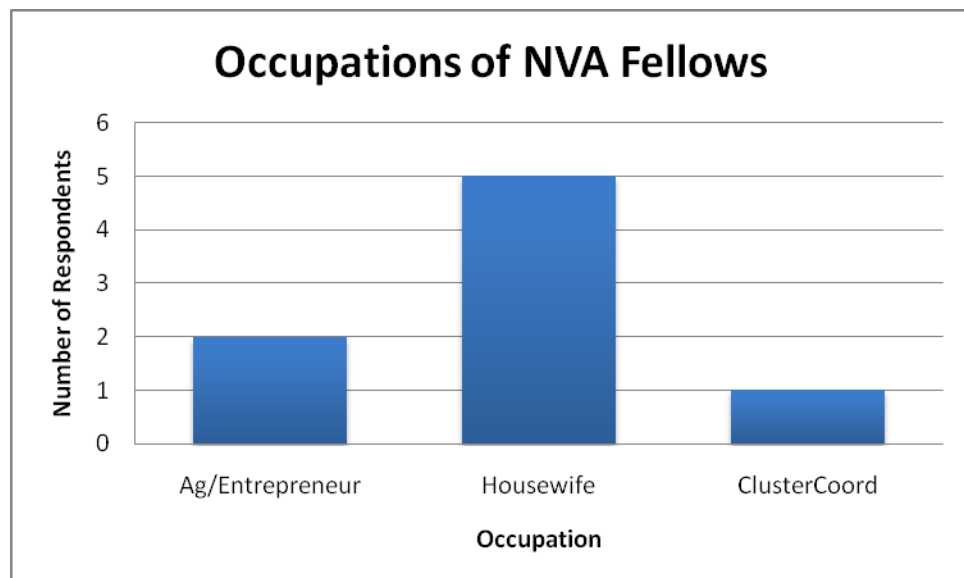
Education



There is no strict requirement on eligibility as an NVA Fellow based on education. The program aims to choose “grassroots academicians” from all walks of life, with different occupations, expertise, and education levels. 75% of

NVA Fellows interviewed at Embalam had completed the 9th or 10th standard, with one individual completing the 5th and 12th respectively. Though the NVA Fellows represented in this study have not pursued education beyond Higher Secondary School, they have other knowledge, specific and helpful in the dissemination process. These skills include Self-Help Group (SHG) formation, social work, micro-enterprise training, computer training, awareness programs, etc.

Occupation



The NVA Fellowship is not an occupation, but rather recognition for work done in the community as well as with the VKC. Whereas a Knowledge Worker is a position at the VKC, the Fellowship provides no formal income, but often times it provides linkages for Fellows to seek out other economic opportunities, such as taking surveys for the government. Five of the NVA Fellows (62.5%) are housewives, while one is a Cluster Coordinator in charge of 35 SHGs. One Fellow is an agricultural landowner and entrepreneur, while another runs micro-enterprises.

It should be noted that all NVA Fellows from the Embalam VKC are married and have children. 75% of Fellows interviewed had 2-3 children, while one Fellow had one son and another Fellow had four daughters. Interviews showed that the Fellows' kin were major beneficiaries of their Fellowship recognition, and thus were provided with more educational and financial opportunities.

Respondents - Observations, Analysis, Conclusions of NVA Fellows

Hypothesis: Fellows of the National Virtual Academy (NVA) act as change agents in transferring their existing expertise, thus empowering themselves and advancing their own village and others in the Knowledge Revolution.

I. Fellowship Details

The eight female NVA Fellows from Embalam, Pudhucherry were all nominated by MSSRF, Chennai. Two were selected in 2003, three in 2005, and three in 2006. Though the commitment to the NVA Fellowship is a minimum of only three years, most remain involved in their communities and maintain a leadership position for much longer. Five of the eight respondents (62.5%) had been nominated for their work as VKC Volunteers, now called Knowledge Workers. Most Fellows were selected in recognition for their efforts in more than one expertise, such as social work, computer or enterprise training, family counseling, community newspaper (CNP), dissemination and collection of information, etc. One respondent, G. Sumathi, was nominated for her work as President of a SHG which she had formed. It is evident that the NVA Fellows are all very deserving of such an honor, and are dedicated to serving their communities.

II. Expertise: Before & After

Prior to becoming NVA Fellows, many women were Knowledge Workers at the VKC. Their expertise greatly varies, but it is clear that they were committed to serving the community both before and after the NVA Fellow recognition. Some Fellows, like Amirtham and Usharani, were involved in social work, while others, like Sundari,

conducted micro-enterprise training programs for SHGs. These women had accomplished much before becoming NVA Fellows. However, G. Sumathi, B. Kasthuri, and Selvarani said they were too shy to expose feelings and opinions and lacked the confidence to go anywhere alone, unaccompanied by their husbands. In addition, they felt that their potential wasn't developed to full capacity, but as B Kasthuri said, now her "inherent talent has been tapped."

Seven out of the eight respondents (87.5%) interviewed cited they had increased their capacity with technology after the Fellowship. Five stated they received software or computer training, which ranged from the MUPP course to SHG account management. In addition, a few learned Tamil typing, while others became proficient at module development and PowerPoint presentations. Whatever training the Fellows have is beneficial, and many are able to pass on their skills to other villagers. Along with this horizontal transfer of knowledge, NVA Fellows are able to expand their own capacities. T. Rukmani said she became associated with the VRC and familiar with NetMeeting, wireless communication, Tamil typing, public address system (PAS), and the notice board.

III. Usage of Expertise

NVA Fellows work as "Torch-Bearers" of the Knowledge Revolution and three Fellows have used their expertise in forming Self-Help Groups (SHGs). One Fellow formed 25 SHGs, and through this helped fourteen people receive loans for cow purchasing. In addition, Fellows perform family counseling, where they work with a married couple to solve conflicts. B. Kasthuri has used her expertise during school holidays where students are educated in areas such as vermicompost and she motivates and encourages them to pursue higher studies.

A few government and non-governmental organizations (NGOs), such as the Mangalam Society and the Women Development Cooperation, have released publications containing profiles of NVA Fellows and presenting them as role models for future generations. In addition, these organizations approach NVA Fellows and ask for their assistance in awareness programs on eye defects, polio drops, and elephantiasis. Often times the NVA Fellows are asked by organizations, like PONLAIT, the Water Board, or NABARD, to conduct surveys on loan repayment, cow subsidies, or water consumption. The government relies on the help of the NVA Fellows to implement schemes throughout the village. Through MSSRF, Amirtham completed a case study in one village on the origin of its name as well as traditional medicinal methods. Two Fellows, Sundari and Amirtham, mentioned they completed, analyzed, and submitted surveys to PONLAIT and received compensation for their work.

IV. Recognition Received

Prior to several Fellows' recognition and reception of the NVA Fellowship, some husbands and family members thought the women were wasting their time going to the VKC, as it was unnecessary. In one instance, Dhanalakshmi, 31, faced problems with her husband who didn't want her to go to the VKC. Now, however, the Fellows' families have realized the women's full potentials and encourage them in their efforts. Most respondents state their families are "very happy" to have them take part in social work. Community members constantly look to the NVA Fellows for advice and are trusted sources of information. B. Kasthuri remarked that she is called a resource person and role model by the community. The community has encouraged her as an NVA Fellow and her communication skills have improved. G. Sumathi was very excited to interact and receive her Fellowship award from the then- President of India Dr. APJ Abdul Kalam and everyone, both in and outside the village, recognized the significance of the award. Villagers were excited to ask her questions regarding the prize, and both she and her family were proud of such a prestigious accomplishment.

A few government non-governmental organizations (NGOs), namely the Mangalam Society and the Women Development Cooperation, have released publications containing profiles of NVA Fellows and presenting them as role models for future generations. In addition, these organizations approach NVA Fellows and ask for their assistance in awareness programs on eye defects, polio drops, and elephantiasis. Although the Fellows do appreciate the recognition and praise for their hard work, they realize the impact of such recognition should not be confined to the certificate presentation. Most importantly, the NVA Fellows program provides the inspiration, linkages, and support needed for Fellows' continued social work in their communities.

V. Change in Roles

Participation in the NVA Fellows program requires dedication and much responsibility within the family and community. No longer are Fellows expected to be solely housewives or SHG members, but also active and contributing members of society. As Dhanalakshmi stated, she spends the "whole day for community," and likewise several other

Fellows have pursued interests related to serving the villages. Sundari was elected as a ward member for her village, while Selvarani strives to be a role model and lead by example as president of the milk society. Currently G. Sumathi is taking responsibility for fixing the stagnant water close to her house, which is causing a mosquito problem. In any case, Fellows are taking the initiative and embracing their multiple roles as housewives, NVA Fellows, social workers, and leaders.

VI. Benefits

The NVA Fellowship provides many linkages and opportunities for Fellows to gain extra income for themselves and their families. Those Fellows who have conducted surveys for the government or NGOs often receive extra income. Dhanalakshmi received Rs. 25 per application through PONLAIT, while Usharani now has a monthly income of Rs. 3,000 because of her work with Hand in Hand, an NGO. As editor and distributor of the Community Newspaper (CNP), T. Rukmani earns Rs. 800 per month.

In addition to providing income, the Fellowship also paves the way for attaining loans. Acknowledged by banks, B. Kasthuri was able to receive a donation for 3 lakhs for continuing her daughter's engineering education, and only had to pay 50,500 rupees in recognition of her Fellowship. G. Sumathi asked a bank for a loan as well. She had applied for it for prior to her NVA Fellowship award in January, 2006, and the bank wanted her to come and meet them for more information, but the date conflicted with the Fellowship award presentation in Hyderabad. As she was out of town, the bank refused to give her the loan until she showed proof by presenting her certificate and picture. Thus, her loan for two lakhs was sanctioned, made possible only through her status as an NVA Fellow.

NVA Fellows are proud of their position and are praised and respected by their families and communities. The changes are evident when observing the NVA Fellows' disposition, as they are happily willing to talk openly about their accomplishments and the positive impacts of the program. Many noted that before the Fellowship, they lacked self-confidence and rarely went anywhere on their own. The fellowship has instilled confidence and self-assurance, which prepares Fellows for any type of work. Sundari was on her way to get a loan on behalf of the Pondicherry VRC when she gave an impromptu interview for All India Radio. She attributed her poise and confidence in this pressure situation to the NVA Fellows program. Amirtham says she is now an "information transformer," and this title is fitting for all NVA Fellows.

Fellows aren't the only beneficiaries of their status and knowledge, since the NVA Fellows program is aimed at encouraging individuals to serve the wider community. This is evident. Although Fellows usually receive compensation from training programs, such as micro-enterprises, it is important to consider the invaluable information and skills passed on to others. In one example, Amirtham trained a graduate student who had approached her and wanted to learn production of washing powder. The student proceeded to open his own profitable shop and now employs 100 people. Fellows are much sought after and considered valuable sources of information.

VII. Contribution to VKC and Vice Versa

Four women NVA Fellows from Embalam are credited with establishing the Embalam VKC – Sundari, T. Rukmani, Usharani, and Dhanalakshmi. Through a National Bank for Agriculture and Rural Development (NABARD) meeting organized at Ariyur, where the staff of MSSRF (namely Mr. Rajasekarapandi), explained the concept of a VKC. The four women, all members of SHGs, provoked and inquired about the possibility of a VKC in Embalam, and with the help of the local Panchayat approached MSSRF. Through their persistence they succeeded in forming the Embalam VKC in 1999.

Four Fellows have conducted performance appraisals of other VKCs and VRCs, while others work in developing content. Additionally, Fellows often act as the intermediates between the government and VKC. Of course, the contributions the VKC has provided to the NVA Fellows are innumerable, and it is noteworthy that the training and capacity building have had a profound impact on their lives. As discussed extensively in *VI. Benefits*, the Fellowship bolsters the confidence and status of its participants and supplies various linkages with government and NGOs.

VIII. Suggestions

Several Fellows shared insights on ways the NVA Fellowship can be more influential and effective, and offered suggestions that can be useful for future reference and consideration by MSSRF. G. Sumathi voiced the need for an

increase in the number of NVA Fellows, while Usharani believes more need-based interaction between villagers and Fellows should improve. As mentioned before in *Profile of NVA Fellows – Age*, there is no minimum or maximum age to be considered for NVA Fellow recognition. However, B. Kasthuri suggests that only those between 18-45 years be selected, as they would be able to carry out the Fellowship with enthusiasm and mobility. In addition to an age restriction, Selvarani thinks the Fellowship should provide a formal monthly income for their efforts. Although at present there is no stipend, often times Fellows receive linkages to government or NGOs where they are compensated for their assistance. Therefore, an income provided through MSSRF or the National Virtual Academy seems to be unrealistic at this time.

Dhanalakshmi feels that there needs to be more diversity and range in the Fellowship, and that SHG members should be given more of a chance. Currently, only people in agriculture are identified as Fellows, and the SHG members' potential still needs to be identified. Sundari thinks more awareness in the community on the NVA Fellowship program is needed. It seems some villagers are misinformed and believe only those working at VKC or VRC are eligible for the Fellowship, when in fact, any community member can be recognized as an NVA Fellow. Amirtham thinks a follow-up assessment of NVA Fellowship would ensure that their work is effective, and in turn this would be recognized through various prizes and certificates, a reward for continuous participation and work. She also reiterated/echoed Sundari's suggestion that more awareness should be spread to those people capable of doing social work. The capacity and potential for computer knowledge and social work remains relatively untapped for those who do not live in close proximity to the VKC or VRC hub. Amirtham feels partiality when nominating Fellows is still an issue, as not every caste is represented equally among the NVA Fellowship. This discrimination should be avoided to increase effectiveness of the NVA Fellows program.

IX. Perspective from Knowledge Workers

Indira and Malathy, Embalam Knowledge Workers, were both asked about their perceptions of the eight female NVA Fellows from Embalam. These Fellows are well known for their social commitment, and can intervene and solve social conflicts or family problems. Whatever expertise they have is transferred horizontally to other districts and communities. According to Indira, Fellows have helped in performing various surveys for PONLAIT and other organizations on population, loan repayment, and 50% subsidy, and have assisted the community in a number of other ways. They have also conducted surveys for the government on whether members have been repaid with the Loan Repayment Act. Malathy remarked the Fellows have good linkages with the government, and one Fellow manages 53 SHGs, so this is quite a huge responsibility. Another has become empowered through the Fellowship and decided to open and run her own shop. The Fellows are all experts in maintenance of the Embalam VKC; if new VKCs are to be established in Pondicherry, they are the individuals sought out for advice and training. Knowledge Workers also receive advice from the NVA Fellows. Fellows are considered Trainers of Training (TOT) when training the new Knowledge Workers to serve the community at the VKC. They have mobility and their influence spreads far into other districts. Through the eyes of the Embalam Knowledge Workers, it is easy to conclude the eight NVA Fellows have done a "tremendous job" as change agents in the Embalam VKC, the community, and beyond.

Embalam VKC and Food Security

My research project focused on poverty not only in income, but in a deprivation of information and services, training and capacities. Deprivation of information and knowledge, health services, training programs, are all forms of poverty not solely related to income. In turn, this deprivation, as discussed earlier, causes a negative impact on the livelihoods of villagers. When individuals and families in the rural setting do not have access to crop information, agriculture technology, or market prices, their food security is in jeopardy. Thus, when the Embalam VKC is able to fulfill these local needs, more people can afford and access food. In one example, during my visit to Embalam a nutritional information program was being conducted through the VKC, where women listened attentively to a local sharing his expertise on proper nutrition. My study was small in scope and not without error; due to time and resource constraints, it is determined further probing is necessary. Probing should be carried out periodically so as to ensure the informational needs of the village and surrounding areas are met by the VKC.

The Rearview Mirror: Looking Back

In the weeks leading up to my departure for the M.S. Swaminathan Research Foundation (MSSRF), Chennai, India, I constantly daydreamed of the journey ahead and speculated of the research I would be conducting. How would I communicate in a country where English is not the first language? How would I manage living by myself for eight weeks? What type of food and other "cultural differences" would I encounter? These questions, looking back, seem rather trivial, and I find myself overwhelmingly naive in thinking another country, though a continent away, would be so drastically different. Although I did my best to rid my mind of stereotypes and inaccurate notions regarding India, I still held many false beliefs about her people and culture. True, the world's largest democratic society, with more than one billion inhabitants, is a developing country that is rapidly expanding in its urban and technological sectors. Yes, the food was very spicy, sometimes to the point where it felt as though my lips were on fire. I bathed using buckets, and sometimes grew frustrated with the intermittent power outages. But more than anything else, I found through my travels that people, regardless of background, are more alike than different, and that we all have similar needs, hopes, and desires. It is the essence of the human spirit that is present in every person. This common bond transcends political views, socio-economic status, and spiritual practices.

The first two weeks of my internship I was homesick and felt very weak physically. However, through the wonderful Indian hospitality provided by Professor P.C. and Amiya Kesavan, I was able to regain strength over a long weekend, and returned to MSSRF with newfound energy and eagerness to learn about my research. Such kindness from the Kesavans was just one example of the generosity and care I experienced during my internship. After the rejuvenating weekend, I no longer dwelled on my loneliness, and instead opted to make friends in the microbiology and molecular biology labs. Although I did not know much about lab techniques, I stepped out of my comfort zone and interacted with many scientists. In the U.S., I was a very picky eater and rarely strayed from the typical. My taste buds were challenged and I grew to love the spicy south Indian food, especially my favorite, chappathi, a type of flat bread dipped into a variety of chutneys. From the perfect cup of tea to a supportive shoulder to a pick-up game of cricket, everywhere I looked I felt happiness, kindness, and love unparalleled to anything else. There was something very tranquil and relaxing about working in the lush, green environment of MSSRF, so stark in contrast to the loud city of Chennai, with its endless traffic and millions of anonymous faces. I was fascinated with the eco-friendly practices of MSSRF that includes rainwater harvesting, solar panels, and an overall conscientiousness of energy use. It is a workplace where people all focused on a common cause – to alleviate the plight of the rural Indian farmer.

Among the many cultural exchanges, one of the most memorable was through traditional Indian dance lessons, called Branayatham. I have been dancing for ten years, so it is no wonder, then, that I was so entranced by this articulate and complex Indian art form. After realizing a few coworkers had their daughters enrolled in dance classes, I opted to observe, and after just one rehearsal, I was hooked. For several weeks I trekked to the other side of Chennai, practicing after office hours two or three times a week. In what culminated at a cultural talent show in celebration of Foundation Day (Professor Swaminathan's birthday) I experienced arguably my most embarrassing, and most gratifying moment. Halfway through the five minutes of choreography, I froze. Blanked out. Almost in tears, I shrugged and informed the audience of a few hundred that I had simply forgotten what came next. After being consoled and encouraged, I somehow mustered the courage to perform – again. Although I was very nervous, I also felt the urge to convey to my coworkers and friends how much the country of India and her people have changed me. Countless people, even strangers, had offered so much to me, so it was only fair to show them how much I appreciated their culture. I wanted to express my deep respect, and growing love, for their fascinating traditions. Following the performance, many of my coworkers shook my hand, grinned, and patted me on the back, saying a job well done. At that moment I realized how much they had done for me and I felt that I should have been the one bowing and saying *nandri* to these people whose infinite kindness had encouraged me throughout the summer.

Perhaps the most eye-opening and meaningful part of my internship was the excursion to a rural village called Embalam. It is there where I saw the true Indian landscape, one of rural life. The pace was much slower, and things were altogether simpler. Spending time in the area and interacting with farmers and villagers finally gave a face to a statistic, one where 70% of India's population relies on agriculture for survival. I finally understood the importance of a farmer's land, and how crucial the monsoon rains are in the success (or failure) of a crop. Conducting interviews with women scarcely a few years older than me was very humbling, changing my perspective of the seemingly stressful teenage years. My problems are insignificant in comparison to these women, some of whom are primary caregivers who must ensure the overall well-being of their families. In addition, I witnessed firsthand how knowledge can and is utilized as a powerful

tool for women and disadvantaged members of society. Basic information, such as crop rotation and planting, produces positive effects that impact a villager at the most fundamental level – the dinner table.

The hunger pangs – whether in the stomach of a four-year old child on the streets of India, a rural subsistence farmer in Ethiopia, or a single mother struggling to make ends meet – are the same. I found that hunger is a universal problem; it knows no religious, racial, ethnic, or geographic barrier. Through my experiences in India as a Borlaug-Ruan Intern, I am determined to contribute my part in the global fight against hunger, as it is a vital cause with vast implications for billions of people. Now, I am more aware of events occurring around the world, and have a new, broader perspective on food security and poverty. I cannot separate myself from the deep ties our nation has to other countries; what happens at one end of the globe creates a ripple effect sure to affect my life, as well as others. It is only a matter of time.

Before this summer, I was one of many who would feel uncomfortable when a 30-second commercial flashed across the television screen, claiming that *only* 19 cents a day would feed a hungry child in Guatemala. I cannot shy away from the faces of hunger. Not anymore. I now understand that as a citizen of the world, I have the responsibility of being my neighbor's keeper, even if that neighbor is 8,000 miles away. The feeble sense of guilt I felt at the Youth Institute Hunger Banquet has been replaced by a powerful sense of moral and social responsibility. I long to dedicate my life's work to the issues of hunger, food security, and poverty. As a global community, we are responsible for the most urgent problem of the 21st-century – global hunger and food security. It is because of my experiences as a Borlaug-Ruan Intern that I can confidently begin to address these issues and remain hopeful in the fate of an ever-growing, and always hungry, planet.

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