Feminist Approach to Technology (FAT)

Women, Girls, Science and Technology

A feasibility study to explore prospects of expanding and adapting FAT's programs in Jharkhand

September 2014

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We very much hope that this report accurately reflects the ideas and perspectives provided by the many key informants and groups that we met.

Acronyms

ANM – Auxiliary Nurse Midwife
ARSH – Adolescent Reproductive and Sexual Health
ASDP – Aajeevika Skill Development Programme
ASHA – Accredited Social Health Activist
AWC – Anganwadi Centre
AWH – Anganwadi Helper
AWW – Anganwadi Worker
BPL – Below Poverty Line
CEA – Central Electricity Authority
CSC – Common Service Centre
CTE – Colleges of Teacher Education
DITE – District Institutes of Teacher Education
DC – District Collector
DEO – District Education Officer
DWO – District Welfare Officer
EBB – Economically Backward Block
FAT – Feminist Approach to Technology
FGD – Focus Group Discussion
GoI – Government of India
GoJ – Government of Jharkhand
IASE – Institutes of Advanced Study in Education
ICDS – Integrated Child Development Services
ICT – Information and Communication Technology
IGMSY – Indira Gandhi Matritva Sahyog Yojana
IT – Information Technology
ITI – Industrial Training Institute
JAC – Jharkhand Academic Council
JAP-IT – Jharkhand Agency for Promotion of Information Technology
JEPC – Jharkhand Education Project Council
JMSS – Jharkhand Mahila Samakhya Society
JPSC – Jharkhand Public Service Commission
JSEPC – Jharkhand Secondary Education Project Council
JSLPS – Jharkhand State Livelihood Promotion Society
JWDS – Jharkhand Women Development Society
KGBV – Kasturba Gandhi Balika Vidyalaya
KSY – Kishori Shakti Yojana
MBC – Minority Backward Caste
MDMS – Mid-Day Meal Scheme
MKSP – Mahila Kisan Shashaktikaran Pariyojana
MSK – Mahila Shikshan Kendra
NCERT – National Council for Education Research and Training
NeGP – National e-Governance Plan
NGO – Non Governmental Organisations

NMEW – National Mission for Empowerment of Women
NPEGEL – National Programme for Education of Girls at Elementary Level
NREGA – National Rural Employment Guarantee Act
NRLM – National Rural Livelihood Mission
NSDC – National Skill Development Corporation
OBC – Other Backward Caste
PDS – Public Distribution System
PTG – Primitive Tribal Group
PPP – Public Private Partnership
RINPAS – Ranchi Institute of Neuro-Psychiatry & Allied Sciences
RMSA – Rashtriya Madhyamik Shiksha Abhiyan
RTE – Right to Education
S&T – Science & Technology
SBTE – State Board of Technical Education
SC – Scheduled Caste
SCA – Special Central Assistance
SCSP – Scheduled Caste Sub-Plan
SHG – Self Help Group
SMC – School Management Committee
SRCW – State Resource Centre for Women
SSA – Sarva Shiksha Abhiyan
ST – Scheduled Tribe
STEM – Science, Technology, Engineering, & Mathematics
TB - Tuberculousis
TSP – Tribal Sub-Plan
UGC – University Grants Commission
WIFS – Weekly Iron and Folic Acid Supplementation Programme for Adolescents
WWW – Workshops for Women by Women

Executive Summary

Background

Technology is an immutable part of life, and claims to offer everyone many options to make their lives better. However, it is a male dominated field with respect to its creation and use. In addition, economically marginalized communities also lack access to technology. Correcting the gender and class imbalances in the field of technology is seen as an important step towards achieving equality.

Feminist Approach to Technology (FAT) is a non-profit organisation started in 2008 that seeks to empower women by enhancing women's awareness, interest, and participation in technology using a rights-based framework. Through FAT's programs, it directly works with adolescent girls in Delhi and collaborates with other women's rights organisations.

FAT continues to grow and dialogue about the issue of women and science & technology (S&T), and has future aims to expand its work outside of Delhi. There is much potential to start its work in Jharkhand, as there is not much participation of girls and women. As a state facing many basic developmental issues such as health and hunger, there are many challenges to working in the state.

Study Process

In April 2014, FAT initiated feasibility study in Jharkhand whereby field level information was collected under four themes that correspond to its four program areas; school education, computer education, technical training for (women's) organisations, and women's participation in S&T. The focus was on marginalized adolescent girls' rights and leadership development in collaboration with others working on similar issues and possibly aligning with existing government schemes.

The feasibility of working in government schools[1], starting a computer centre, and doing technical trainings for women's organisation was assessed in the following districts; West Singhbhum, Sahibganj, Palamu, Giridih, and Simdega.

First, a recce was done by members of FAT in several districts of Jharkhand to get a sense of the state, to interact with various organisations, and understand issues faced by women and girls in the local contexts. Based on the recce and guidelines previously outlined, the above five districts were chosen for the study. Interview and Focus Group Discussion (FGD) schedules were prepared in Hindi for the following identified stakeholders; NGO heads/staff, school officials, government officials, local leaders, social activists, adolescent girls' groups including drop outs, school (6-10 class) students, college students, women's groups, teachers, and parents.

The feasibility study team spent 4-5 days in each study district to conduct interviews and FGDs. These were later transcribed and data was later compiled under the above

[1] Mission schools and one Kasturba Gandhi Balika Vidyalaya (KGBV) were also visited

mentioned thematic areas to produce findings for the specific district. After all field work was completed, regional level consultations were held in which these preliminary findings were presented and discussed.

Government Schemes

Information regarding relevant government schemes was also collected during interviews and secondary data searches. A list of these have been included in the feasibility study report, and where possible, their implementation status in Jharkhand. It must be kept in mind, that many government schemes exist only on paper as pointed on in many interviews, and that the ground reality is far from the policy. Mainstreaming women and technology with government schemes is a future possibility for FAT in Jharkhand.

Among the schemes relevant for women and girls and S&T in Jharkhand are Sarva Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan, Kishori Shakti Yojana, SABLA, Women Industrial Schools, Women Polytechnics, Women Industrial Training Institutes, and various scholarships and skill development schemes.

Findings on School Education

In government schools, poor quality of education is partially due to an enormous lack of teachers. Those who are there are occupied with administrative tasks rather than teaching. Students therefore do not receive good education, and due to financial problems and distance are forced to drop out. Girls mostly drop out due to marriage and safety reasons. Students who are first generation learners are also pulled between differing environments of their homes and schools.

Science and Maths teachers are lacking, and once used computers are lying in states of disrepair. Practicals and labs are also not common in government schools. In this regard, mission schools have much stronger science, maths, and computer education. Higher education is a distant dream for most girl students, and that too in science is even further due to the social and economic barriers along with a limited number of opportunities.

For starting work with schools in Jharkhand, it was recommended to interact with government officials about proposed ideas, support the role of teachers, and develop interesting teaching methods.

Findings on Computer Education

There were mixed responses regarding the importance of computer education for adolescent girls as some viewed it as essential and others as it having lower priority. The gender divide was noted, however in many areas boys and girls equally lack access to computer education. Overall, it was seen as a way to promote livelihood options in a state where many young rural girls migrate or get trafficked to large metro cities.

There are many infrastructural challenges to starting a tech centre in the study districts such as electricity supply, internet connectivity, and location. Also, initially gaining parental support will have to be seen, as well as logistics such as timings and trainers. The issue of

employability and placement will also be important for girls. Lastly, there were various responses on which girls would benefit most, weighing their educational, marital, and economic status as well as community background.

Findings on Use of Technology in (Women's) Organisation

Most organisations interviewed used mobiles and computers for communication and documentation purposes. Internet was less commonly used, as it is dependent on connectivity status. The structure of most organisations consists of office and field staff, with the later having more women who mostly use mobiles. Other uses included film screenings for education and awareness purposes and locally relevant technology such as those related to agriculture. The four women's organisations interviewed in the study districts had varying levels of technology use, from using only mobiles to editing photos using Photoshop.

When asked what technology skills were needed, organisations suggested various trainings related to research methods, camera and video documentation, laptop operation, and building websites. Mobile and camera repairing were also mentioned as livelihood options for women and girls.

Future Steps

The information obtained from interviews and FGDs, regional consultations, and secondary sources were used to write the feasibility study report. Based on this, an adaptation plan for FAT's future work in Jharkhand will be developed, which will include proposed partners, implementation ideas, and an action plan.

Background

The Issue of Women and Science and Technology (S&T)

Today, we are witnessing a tremendous penetration of technology into our lives. Information and Communication Technology (ICT) such as mobiles and computers is perhaps the most visible face of this, but other technologies are equally pervasive – be they reproductive, agricultural, health-related, or are simply time-saving devices. As production techniques and services get more automated, knowledge of technologies opens up new avenues of livelihoods. Also, the pervasive nature of technologies necessitates that those who control technology, have more power and an influence on decision-making inside the house and in society.

In spite of this, many young girls from underprivileged backgrounds do not get the opportunity to explore technologies or use them due to prevailing societal norms of femininity/masculinity, and gendered division of labour. This narrows down the range of livelihood options for them to low-paid unskilled work, while males from the same economic backgrounds can access better-paid skilled work. Further, excluding technology from their lives also puts them at a disadvantage in terms of influence in society.

About FAT

Feminist Approach to Technology (FAT) is a not-for-profit organization based in New Delhi, India, which believes that technology is a huge determinant of development and hence, equal participation of women in creating, using and decision making around technology is necessary to ensure equal participation of women in the development process. Formed in July 2008, FAT works to create awareness on the issue of women and technology and works directly with women and girls to increase their access to STEM (Science, Technology, Engineering and Mathematics) education.

FAT's mission is to empower women by enhancing women's awareness, interest, and participation in technology. By breaking societal stereotypes and attitudes, encouraging and enabling women to feel capable and comfortable in working with technology, and collaborating with other women's organizations, FAT works towards this goal.

FAT's larger goal is to enhance the existing human capital with relevant information about the impact of S&T on people, focusing on women's rights. Executing this process with the women and girls in the community delivers gender awareness, challenges status quo, as well as builds S&T awareness. Below are the four main programs through which FAT works.

- **Tech Centre Program**: FAT's "tech centre" is a free space where girls from underprivileged and disadvantaged backgrounds build their leadership using technology. They explore themselves and enhance their agency by making negotiations at home and within their community, so they can make choices regarding their own lives.

  Here, they are taught basic computer skills, Internet, camera and filmmaking skills. These classes are interspersed with workshops on women's rights, feminism,

sexuality, and various other issues. Thus, they not only get equipped with technical skills but also develop a spirit of activism.

- **School Intervention Program:** This program addresses the issue of self-elimination of girls from STEM subjects and fields at the school level. It aims to uncover and understand the various channels of negative feedback regarding school education that girls receive.

  The implementation of this program began in 2013 through qualitative and quantitative research in select government and private schools of South Delhi. Based on the findings of the research and custom designed curriculum, regular workshops are conducted in these schools on STEM topics with a larger feminist perspective. The curriculum is also available for distribution, replication, and adaptation.

- **Technical Training for Women:** FAT believes that effective technical training for women from all strands of life is essential to ensure that the gender gap in technology is bridged. Workshops for Women by Women (WWW) are short-term workshops for different groups of women that address different needs. These workshops are conducted in a friendly environment with women facilitators and trainers who not only share their technical skills but also their journey in their field and facilitate a discussion around the need for women to fight the stereotype that women can't be good in technology. Thus, the skill building workshops are carried out in an environment where the politics of patriarchal gendering of technical skills is also discussed and dissected.

- **Advocacy Initiative:** There is still a dearth of organizations and community groups working to promote, encourage, and document women's contribution to and voices in S&T. FAT is working towards ensuring a countrywide dialogue and consensus on the need to increase women's participation in technology-making and equal access to technology use. FAT's Advocacy Initiative aims to facilitate collective actions towards bridging the gap between women's rights and S&T.

  As a part of this initiative, FAT has previously organised and conducted consultations on "Women's Movement and Technology" in Delhi and Bombay and hopes to continue building and maintaining our advocacy programs through networking.

Rationale for Working in Jharkhand

In its 14 year history, Jharkhand is known more for its political happenings rather than developmental issues. People of the region have not been receiving the benefits of technological developments, whether in daily living or in terms of communication, expression, and reaching out to the global community. On the other hand, they have been affected greatly by the invasive strategies of big corporate giants like mining companies.

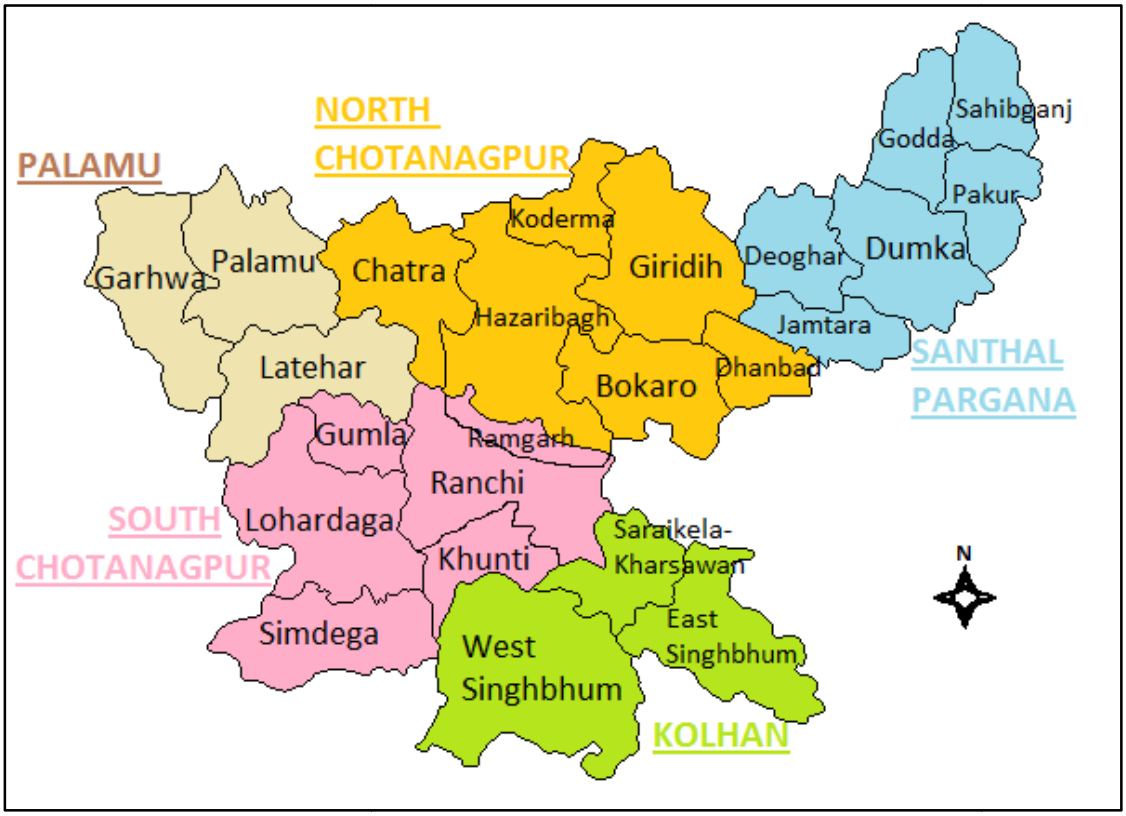
Jharkhand faces many developmental challenges as it continues to grow as a state. Food

security, education, health care, infrastructure, and livelihood are all areas where many individuals and organisations are focusing upon. Bringing in technical knowhow and awareness in a small way through girls and women will both work towards empowering and assisting them in their daily lives, and also help in expanding their knowledge base regarding how S&T can impact their lives. A successful implementation of FAT's programs will bring a positive impact toward gender equality, skills development, as well as community awareness on S&T.

About Jharkhand

The second youngest state in the country, Jharkhand was carved out of southern Bihar on 15 November 2000 after many decades of struggle for statehood. The challenge to establish a stable government has marked the past 14 years, as there have been 9 Chief Ministerial changes, and 3 terms under President's Rule. Currently, the state is divided in 5 divisions and 24 districts, bordering the states of Uttar Pradesh, Bihar, and West Bengal to the north and east, and Chhattisgarh and Orissa to the west and south. In addition to Hindi and various tribal languages, Bengali, Oriya, Bhojpuri, Chhattisgarhi are found more commonly in bordering districts.

It has a total of 5 major cities, along with 32,620 villages, 4,562 panchayats, and 260 blocks. A map showing the divisions and districts within the state is given below.



Known as the 'land of forests', Jharkhand has 32.48% of its area is covered by forests and trees. Much of the state lies in either the Santhal Pargana or Chota Nagpur Plateau regions,

and is famous for its rich variety of mineral resources and natural beauty of both flora and fauna. A statistical profile of the state is given below.

Indicator	Figure
% Population Female	48.7%
% Population Rural	76%
Sex Ratio (♀/1000 ♂)	948
Sex Ratio Rural	961
Sex Ratio Urban	910
Literacy Rate	66.4%
Literacy Rate Male	76.8%
Literacy Rate Female	55.4%
Literacy Rate Rural	61.1%
Literacy Rate Urban	82.3%
Source: Census 2011 website	

Jharkhand is home to many tribal groups. Thirty Scheduled Tribes (STs) including Primitive Tribal Groups (PTGs) comprise 26.3% of the total population. The largest tribe are Santhals, whereas others include Oraon, Munda, Ho, Kharia, Bhumji, Lohra, Kharwar, Chero, Bedia, Mal Pahariya, and Mahli groups. There are two prominent linguistic groups; Mundari (following their own scripts), which includes Santhal, Ho, and Munda; and Dravidian (following Devnagri script), which includes Oraon, Chero, and Gonds. STs have lower literacy rates and higher sex ratios compared to the rest of Jharkhand.

There are also 22 Scheduled Castes (SCs), comprising 11.8% of the total population. Chamars comprise 26.3% of the total SC population, and are mostly in Palamu, Giridih, Hazaribagh, and Garhwa districts. Compared with ST figures, SCs in Jharkhand have a lower sex ratio and literacy levels.

Agriculture is a main source of livelihood for the majority of rural communities, however, it is not very stable due to seasonal and erratic precipitation. About 90% of cropped areas are rain fed, as irrigation is precarious and water table levels are decreasing. Farming is characterized by low investment, low productivity, and mono-cropping of mostly paddy. Food security, hunger, and malnutrition are constant problems plaguing every district. As a result of this, there is much distress migration that is often seasonal and temporary, and mostly among males.

Main industries include iron and steel in the cities of Jamshedpur and Bokaro; engineering in Ranchi; cement in Sindri and Kumhardhubi (Dhanbad), Khelari (Ranchi), and Japla (Palamu); aluminum in Muri (Ranchi); copper in Ghatshila (East Singhbhum), chemical fertilizer in Sindri, and bidi in East Singhbhum, Ranchi, Hazaribagh, Gumla, Giridih, and Dhanbad. Other popular livelihoods are based on local minerals and resources such as coal peddling, stone crushing, and selling forest produce. Children are also involved as labour in these activities and more.

As of 2008, 32.5% percent of households had both electricity and LPG connections. In looking at how effectively the demand for electricity has been met vis-à-vis its supply, Jharkhand has met almost 95% of the demand during 2008-9, according to Central Electricity Authority (CEA) figures. It has also been reported that Jharkhand has shown much better performance compared with other states, even the more developed ones.

In his Republic Day address of 2014, the Chief Minister of Jharkhand stated that as per the Rajiv Gandhi Rural Electrification Scheme, 17,647 villages have been electrified, of which 16,615 are receiving electricity; and that as per the Solar Charging Station Program, five naxal affected districts of Simdega, Palamu, Lohardaga, East Singhbhum, and West Singhbhum have started work on 50-50 solar charging stations.

Telephone connection data for 2008-9 shows Jharkhand to have landline and mobile connectivity rates of 4.1% and 2.7%, respectively, which is considerably lower than the national averages of 36.9% and 33.7%, respectively. There is a lack of strong data to assess ICT diffusion in Jharkhand, but as of 2001-2, 0.04% Internet connectivity was there with 0.025% of households having a computer. There is a large digital gap in Jharkhand, as it does not even meet one-sixth of the national average.

Study Process

Objectives

Feasibility studies are used most often in the field of business and enterprise to understand the factors and challenges involved in starting up a new venture. FAT had undertaken this feasibility study to understand how it can extend and adapt its programs in Delhi to 5 districts in Jharkhand based on partnership with local organisations. This study serves as a multipurpose document, as it will generate an adaptation plan for FAT's future work in Jharkhand and will also provide a review of women and girls' access to basic technology and education, as well as pointing out the socio-economic and local factors involved.

Methodology

The methodology for this feasibility study comprised mainly of interviews and Focus Group Discussions (FGDs) conducted at block and district levels, with a focus on understanding women and girls access, participation, and needs with respect to technology. Infrastructure, namely, internet connection and electricity supply, was also assessed through direct observation and during interviews. In addition, information regarding relevant government schemes regarding women, girls, and technology was collected through departments and their respective websites. Following the field work, regional consultations were held to get feedback on the findings, suggestions for FAT's future work, and assess potential partners.

Given below are detailed steps taken during the course of the 6 month feasibility study, which lasted from April – Sept 2014.

1. Identifying Thematic Areas and Stakeholders – April

   The thematic areas and relevant stakeholders under which the feasibility study would be based were first outlined with the Feasibility Study Advisor. The four areas that emerged were School Education, Computer Education, Use of Technology in (Women's) Organisations, and Women's Participation in S&T in Jharkhand.

   To collect information regarding the above mentioned thematic areas, the following stakeholders were identified. NGO heads/staff, school officials, government officials, local leaders, and social activists were identified as stakeholders to be individually interviewed. Adolescent girls' groups including drop outs, school (6-10 class) students, and college students; women's groups; teachers; and parents were identified as stakeholders with whom to conduct FGDs. Obviously, stakeholders could speak only to those aforementioned thematic areas relevant to their background.

2. FAT Team Recce – April

   As Jharkhand is an entirely new region for FAT, a 7-day recce to various districts was organised so as to familiarise the FAT team with the state, specifically focusing

on women's and girls' issues. Eight members of the FAT team, board, and local consultants had discussions with individuals, NGOs, women, and girls. During this time 8 districts were covered; Chatra, Giridih, Bokaro, Ranchi, Palamu, Dumka, East Singhbhum, and Khunti.

After this recce, the 4 member FAT Jharkhand feasibility study team discussed district selection based on areas having good infrastructure and NGO presence. However after internal discussions, it was decided that it would be best to have a range of study districts with varying levels of challenges. To do this, it would be necessary to do a second recce. This recce covered 8 additional districts including Simdega, Lohardaga, Latehar, Hazaribagh, Koderma, Godda, Pakur, and Sahibganj. Following this, a finalised recce report was prepared. In total, 16 districts were covered in all 5 divisions of the state.

3. District Selection – May

   The given guideline was that one district from each of the five divisions of Jharkhand was to be selected for the feasibility study. The team again weighed decisions based on infrastructure and NGO presence, this time with the aim of including a range of challenge. The following districts were selected:

   - Simdega (S. Chotanagpur) was selected as there is a higher incidence of adolescent tribal girls being trafficked and the fact that are also very few NGOs working in Simdega. In addition, there are infrastructure issues such as roads. This district would be a more challenging district as it is away from mainland Jharkhand, yet still relatively close to Ranchi (150 km).

   - Giridih (N. Chotanagpur) was selected as the issue of caste discrimination was brought up during interactions with Dalit girls in schools. Giridih would be less challenging district to work in, as there is a stronger NGO presence and the town is a mid-sized busy city having technical infrastructure.

   - Palamu (Palamu), specifically Daltonganj, is a center for education for the entire division including Latehar and Garhwa districts, and therefore was selected as there would be the potential to reach girls coming to study from all districts. Roads and electricity were in relatively good condition as well. The community here is mixed, with less number of tribals. As Palamu is a drought area, many organisations there are working on livelihoods.

   - West Singhbhum (Kolhan) is rich in minerals and forest, and therefore mining, displacement, and migration are some of the problems faced by the region. Many of the NGOs working there are focused on mining related issues. There is considerably less NGO presence and infrastructure in Chaibasa than Jamshedpur, and therefore this district was selected as a slightly more challenging option.

- Sahibganj (Santhal Pargana) was selected as it presents many infrastructural challenges given the hilly terrain, distance from Ranchi, and general remoteness from the state. There are mostly Santhals and Paharias in the rural areas, and only a few active NGOs. Sahibganj was chosen as the most challenging district out of our entire selection.

4. Designing and Piloting of Tools – May

   After the districts were selected, the feasibility study team along with the Study Advisor designed interview and FGD schedules for each stakeholder under relevant thematic areas. The questions were piloted with teachers, parents, and students at Karthik Oraon Kuduk School in Gumla district, and further refined. Following this, all questions were translated into Hindi.

5. Interviews and FGDs – June

   Based on the timeline for the project, 4-5 days were spent in each study district to conduct interviews and FGDs with available stakeholders who had been contacted beforehand. The aim was to cover a range of stakeholders, so as not to get repetitive information, and also to cover various blocks.

   Interviews and FGDs were conducted by 2 person teams with a local consultant in each of the teams, collectively completing at least 4 interviews per day (2 per team per day). Local consultants were responsible for asking the main questions, and program associates were responsible for documentation and recording. All interviews and FGDs were preceded with introductions of the interviewers including their names, about FAT, and the purpose of the interview. After this, verbal permission to record was sought.

	Number
Individual Interviews	46
FGDs with parents, teachers, and women's groups	9
FGDs with adolescent girls	13
No. of girls participated in FGDs	118

   Following this, interviewees introduced themselves and then the interview schedules were used as a guide to begin the interview. Notes and audio recordings were then typed and transcribed into the interview schedules for later analysis. After all transcripts were completed for a given district, a synthesis document was prepared for that district highlighting the findings from each thematic area.

6. Secondary Data – June/July

   With the help of a local consultant, secondary data from government departments regarding schemes relevant to women and girls and S&T was collected. This includes schools, colleges, polytechnics, and ITIs (Industrial Training Institutes). This would aid in assessing provisions made available by the government.

7. Regional Consultations – July

   Four regional level consultations covering the entire state were held after the field interviews and FGDs to introduce FAT and share findings from the study districts to regional organisations. A main goal was to get feedback and suggestions for FAT's future work and interact more with potential partners.

   These consultations aimed to cover all the districts of a particular division or divisions, and not only the study district. The following consultations were held:

   - 18 July, Daltonganj – Palamu Division
   - 21 July, Hazaribagh – North Chotanagpur Division
   - 26 July, Dumka – Santhal Pargana Division
   - 5 August, Chaibasa – Kolhan and South Chotanagpur Divisions

8. Data Analysis and Report Writing – August/September

   The synthesis documents prepared for each district were again compiled by commonalities within a given thematic area, and district specific details were noted to support a given point. Overall findings were then written based on this compiled document.

9. Adaptation Plan and State Level Consultation in Ranchi – September

   A one day meeting was held with the entire FAT team in Delhi to propose ideas for adaptation based on the findings. An adaptation plan was thereafter prepared by a FAT consultant.

   On 12 September, a state level consultation involving all Oak Foundation partner organisations and potential partner organisations for FAT in Jharkhand was held in Ranchi. The aim of this consultation was to introduce FAT and share the findings of the feasibility study to a state level audience, and furthermore to get specific feedback on the adaptation plan.

Limitations

Logistical Limitations

There were several limitations to the study. It was realized after the project period began, that Lok Sabha Elections would be held in Jharkhand during 10-27 April. This affected the timeline of the feasibility study, specifically in planning of the recce.

Also, because of this and other delays to the project, the field work period coincided with school holidays and thus there was limited access to government schools. As a major thematic area covered government school education, adjustments had to be made in scheduling interviews with school related stakeholders, specifically with girl students. Most FGDs conducted with girl students were not done in school premises.

Methodological Limitations

With qualitative interviews and FGDs, there is the risk of using self-reported data. However, since this is a feasibility study, the focus is more on using the information as a way to design programs for girls and women, and not for an in-depth sociological analysis.

Some interviews yielded only partial information for a variety of reasons. For example, government officials would not give full responses, or preferred not to respond to certain sections. Often times in FGDs with adolescent girls, they would give the same responses of their peers indicating the presence of a social desirability bias.

There is also a lack of availability of gender wise data noticed during secondary data collection, for example in assessing the number of males and females taking up STEM courses in higher education.

Limitations of Researchers

Generally, the study team was well connected and able to access various networks of NGOs, government agencies, and key individuals. However, some districts did not yield many contacts, especially during recce and consultations. This may be due to an actual lack of organisations in a particular area. Accessing secondary data was a limitation, as many departments either lacked the data or did not respond to requests.

During interviews, the interpretation of the word “technology” was discussed most often as ICT, as that is the primary technology that FAT works within its Tech Centre. Less focus was given to other types of technology, as the mandate was to focus on program feasibility. This perhaps was a limitation in imagining other directions for future work, even if it falls out of FAT’s current purview.

Government Schemes

This section contains information on various central and state government provisions and schemes collected through both government departments and websites. Most of these schemes were mentioned during interviews as they have relevancy to women, girls, education, and S&T.

A mapping of schemes enables an understanding of the existing government support. FAT can potentially look at possible entry points to demand/advocate for and collaborate with these schemes where it is pertinent. The schemes fall under the given departments at both the central and state level:

- Department of Welfare (GoJ)
- Department of Social Welfare, Women and Child Development (GoI, GoJ)
- Department of Rural Development (GoJ)
- Department of Human Resource Development (GoI, GoJ)
- Department of Science and Technology (GoJ)
- Department of Labour, Employment, and Training (GoI, GoJ)
- Department of Information and Technology (GoI, GoJ)

During interviews, a common theme regarding government schemes was that many of them have a questionable or non-existent implementation status. Policies are often only on paper. Further investigation of the ground reality of government schemes would be needed to understand the extent to which schemes are functioning properly and their status.

Department of Welfare

The Department of Welfare is mandated to look after the welfare of the most underprivileged sections of the society namely the Scheduled Tribes, Scheduled Castes, Backward classes and Minorities and to bring all around development of these sections.

Current Provisions in Jharkhand:

- Scholarship Scheme: There is a provision to give out Rs. 19325 Lakh to students from SC/ST, backward classes, and BPL (Below Poverty Line) in the financial year 2013-14. Similarly, for minority background students, provisions have been made for Rs. 2500 Lakh.

- Uniform Scheme: SC/ST students from class 5-10 are supplied two sets of clothes.

- University Polytechnic at BIT Mesra, Ranchi: This aims to benefit SC, ST, Backward castes, and PTGs and is currently being established.

Bicycle Distribution Scheme (GoI):

This is a state sponsored scheme for girls from SC, ST, Minorities, and BPL families to continue pursuing their studies. Initially the plan of providing bicycles free of cost

to girl students belonging to SC, ST, Minorities, and BPL studying in class 8-10 was started in 2002-3. Now, only girl students of class 8 of the particular groups are being targeted. In order to avail benefit of this scheme, the application must be sent through the concerned principal to the District Welfare Officer from where the bicycles are distributed.

In financial year 2013-14, Rs. 5,594 Lakh was allocated for this scheme, along with Rs. 1081 Lakh for minority students in Jharkhand. During interaction with DWOs in the study districts, bicycle distribution was being extended to general castes and also boys, due to the success of the scheme.

Department of Social Welfare, Women and Child Development

The following schemes are presently implemented by Jharkhand Women Development Society (JWDS), an autonomous body under this department which was established to ensure empowerment of women and their systematic development.

Integrated Child Development Services (ICDS):

ICDS was launched in 1975 and provides health and education services to children below 6 years of age, pregnant and lactating mothers, and women aged 15-45. Services include supplementary nutrition, immunization, health check-ups, referral services, pre-school education, and nutrition & health education in localized Anganwadi Centres (AWC). Women employed to provide these services are Anganwadi Workers (AWW), Anganwadi Helpers (AWH), and Auxiliary Nurse Midwives (ANM). In addition, there is a Sahiya (also known as Accredited Social Health Activists (ASHA) in other states), a woman selected by the community to support the service providers on health issues with focus on reproductive and child health needs.

Weekly Iron and Folic Acid Supplementation Programme for Adolescents (WIFS):

To combat anemia in adolescents, a supervised weekly supplementation of 100mg Iron and 500ug Folic Acid tablets is provided to school going adolescent girls and boys in class 6-12, out of school adolescent girls, married adolescent girls, and pregnant and lactating adolescent girls. This happens at Govt/Govt Aided Schools and AWCs in both rural and urban areas for about 30 lakh adolescents in the state.

In addition, there is biannual supplementation of de-worming tablets (Albendazole) as well as dietary counseling provided to inform them of the correct dietary practices for increasing iron intake and the significance of preventing worm infestation by encouraging adoption of correct hygiene practices.

Kishori Shakti Yojana (KSY):

KSY is aided by GoI, and aims to improve the nutritional and health status of girls in the age group of 11- 19 years, as well as train and equip the adolescent groups to improve/upgrade home based and vocational skills. It presently uses the ICDS infrastructure in the state and covers 17 districts, namely, Khunti, Simdega,

Lohardaga, Ramgarh, Chatra, Koderma, Dhanbad, Bokaro, East Singhbhum, Saraikela- Kharswan, Dumka, Jamtara, Godda, Pakur, Deoghar, Palamu and Latehar. There are 123 projects operational under 24,325 AWCs. For the financial year 2012-13 it has a budgetary provision of Rs. 2.2 crores.

Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (RGSEAG) – SABLA:

It is a centrally-sponsored scheme with aim of enabling the self-development and empowerment of adolescent girls aged 11-18 years, with a focus on those who are out-of-school. It aims to improve their nutrition and health status; spread awareness among them about health, hygiene, nutrition; Adolescent Reproductive and Sexual Health (ARSH) and family and child care; upgrade their home-based skills, life skills, and vocational skills; mainstream out-of-school adolescent girls into formal/non formal-education; and inform and guide them about existing public services, such as Primary Health Centres, Community Health Centres, Post Office, Bank, and Police Stations. Kishori Samoohs would meet regularly at AWCs for 6 hours per week. For the financial year 2012-13, there is a budgetary provision of Rs. 396 lakh for non-nutrition activities.

It was started as a pilot in 7 districts of Jharkhand, namely, Hazaribagh, West Singhbhum, Ranchi, Giridih, Sahibganj, Garhwa and Gumla, in 2010-11. In 2011-12, Rs. 1.49 crores under nutrition component was released to Jharkhand, of which Rs. 1.23 crores was utilized and 2,17,456 beneficiaries were covered. Budget for the nutrition components are shared equally by central and state, whereas budget provisioned for the non-nutritional components are 100% from GoI. For financial year 2012-13, this amounted to Rs 396 lakh.

National Mission for Empowerment of Women (NMEW):

This mission aims to achieve social, economic, political, and legal empowerment of women through the formation and activation of a State Resource Centre for Women (SRCW). It is implemented by JWDS fund with an allotted amount of Rs. 6,87,000 for 2012-13 financial year, but it has incurred no expenditure till date.

Adolescent Girls Helpline cum Counseling:

The basic idea of the helpline is to identify and stop the occurrence of suicide among adolescents through counseling by experienced counselors. It is implemented by JWDS fund with an allotted amount of Rs. 5,00,000 for 2012-13 financial year, but it has incurred no expenditure till date. Proposal for the setting up of an Adolescent Help Line cum Counseling Centre has been approved by the Department of Social Welfare, GoJ to be set up at Ranchi Institute of Neuro-Psychiatry & Allied Sciences (RINPAS).

Indira Gandhi Matritva Sahyog Yojana (IGMSY):

This is a centrally sponsored programme under Ministry of Women and Child Development, GoI. It aims to improve the health and nutrition status of pregnant

and lactating women and their young infants by promoting appropriate practices, care, and service utilization during pregnancy; safe delivery and lactation; encouraging women to follow (optimal) infant and young child feeding practices, including early and exclusive breastfeeding for the first six months; and contributing to better enabling environment by providing cash incentives for improved health and nutrition to pregnant and lactating women. It was begun as a pilot program in 2011 in East Singhbhum and Simdega districts.

Disabled Student Scholarship:

As per this scheme, students of class 1-8 receive Rs. 50 per month (including residential schools students who receive Rs. 100 per month), class 9 to graduate level receive Rs. 250 per month, and graduate level students are given Rs. 260 per month. For this scheme, the budget for financial year 2013-14 is Rs. 100 Lakhs.

Department of Rural Development

This department has established a separate body called Jharkhand State Livelihood Promotion Society (JSLPS), which works as the implementing agency for National Rural Livelihood Mission (NRLM) and livelihood promotion in the state.

Sanjeevani:

This project aims to empower women of poor families through SHGs to ensure sustainable livelihood as well as increase their reach for their entitlements and participation in decision making processes. It has been initiated in 29 blocks of 13 districts including Ranchi, Hazaribagh, Bokaro, Lohardaga, Gumla, Dumka, Latehar, Giridih, Chatra, East Singhbhum, Ramgarh, West Singhbhum, and Saraikela-Kharswan.

Mahila Kisan Shashaktikaran Pariyojana (MKSP):

The primary objective of the MKSP is to empower women in agriculture by enhancing their participation and productivity, as well as enable them to gain better access to other public services. It is a sub-component of the NRLM and in 2010-11, GoI had decided to provide support of Rs 100 crores to this scheme.

Aajeevika Skill Development Programme (ASDP):

The ASDP is a sub-mission under NRLM aiming to cater to the occupational aspirations of the rural youth and to diversify incomes of the rural poor. It provides a minimum 624 hours of customized residential and non-residential training, with modules on trade specific skills, IT, and soft skills. The table below shows the operational status of the schemes in 2014 for the 5 study districts.

District	**Agency**	**Project**	**Number of Youth Trained**
Giridih	AROH Foundation	ASDP	500
	Institute of Computer	Project I East	50

	Accounts (ICA)		
	Raj Buildcon Construction Ltd.	Aajeevika SGSY	720
	Bvg Pvt. Ltd.	SGSY (NIRD)	200
Simdega	CAP Foundation	SGSY (NIRD)	186
	Manthan	SGSY	1290
	RSMIT	RSMIT ONE	120
Palamu	IL & FS	SEAM XI	669
		SESS West	1100
	Tally Solutions Pvt. Ltd.	East 2011	75
West Singhbhum	Future Corporate Resources Ltd.	Project II	25
	IL & FS	SEAM XI	25
		Score I	30
		SESS EAST	18
	Institute of Computer Accounts (ICA)	Project I EAST	50
	RSMIT	RSMIT ONE	120
			Source: JSLPS website

Department of Human Resource Development (Department of School Education & Literacy)

Elementary Education

The Jharkhand Education Project Council (JEPC) is an autonomous body and functions as the implementing agency for the following elementary education schemes under Sarva Shiksha Abhiyan.

- Mid-Day Meal Scheme (MDMS):

All government schools, government-aided schools, including minority institutions, will provide students from class 1-8 a hot, cooked mid-day meal. The aims of this scheme are to prevent children from malnutrition and also to increase primary student enrollment, retention, and attendance.

- Sarva Shiksha Abhiyan (SSA):

SSA was established in 2005 by the central government in efforts to universalise elementary education. The aim is to provide useful and relevant elementary education for children aged 6-14. Salient features include community ownership and monitoring; giving priority to girls; bridging all gender and social category gaps, focusing on SC/ST, minorities, and urban deprived people; setting up of Block and Cluster Resource Centres; and supporting the role of teachers.

Educationally Backward Blocks (EBBs) are blocks targeted by schemes under SSA. EBBs

are determined by rural female literacy less than the national average and the literacy gender gap above the national average. Using 2001 Census figures, 201 out of the then 212 blocks in Jharkhand were classified as EBBs. In 2012-13 there were no new schools set up/sanctioned under SSA in the state.

- Kasturba Gandhi Balika Vidyalaya (KGBV):

KGBVs are residential upper primary schools for girls from SC, ST, OBC and Muslim communities. They are set up in EBBs where there are challenges of low female literacy, large number of girls out of school, or areas having scattered habitations. As of March 2013, the 203 sanctioned KGBVs in state of Jharkhand were all functional.

In November 2013, GoI commissioned the Second National Evaluation of the Programme across the country, which included Dumka and Sahibganj districts of Jharkhand. The following points were noted in the evaluation report with respect to the state:

- The new buildings in Jharkhand are also large, spacious and equipped to accommodate 300 girls. They also have spacious staff quarters in a separate building.
- Jharkhand has upgraded all the KGBVs to class 12 with their own funds and with help from Rashtriya Madhyamik Shiksha Abhiyan (RMSA) funds. The fund flow from RMSA is also smooth and regular.
- As of 30 June 2013, KGBV girls are 18% SC, 40.6% ST, 26.6% OBC, 6% Muslim, and 8.9% BPL.
- KGBVs are recognised by the Jharkhand Academic Council (JAC), the body responsible for holding and conducting examinations.
- The state government has upgraded the KGBVs, by mustering funds from all sources. They have built linkages with RMSA, the Welfare Department and the Department of Secondary Education. It seems they can sustain the schools if needed. According to them it is their prized program and the CM wants to have one more KGBV per block with state funds!

- National Programme for Education of Girls at Elementary Level (NPEGEL)

NPEGEL is expected to work in tandem with KGBV, implemented in EBBs, and addresses the needs of girls who are both in and out of school. NPEGEL also reaches out to girls who are enrolled in school, but do not regularly. It was initiated in Jharkhand in September 2003 with a total of 2975 functional model cluster schools at present, covering 24 districts of Jharkhand.

- Mahila Samakhya:

This programme was launched in 1988 and recognised that education can be an effective tool for women's empowerment, the parameters of which are enhancing self-

esteem and self-confidence of women; building a positive image of women by recognizing their contribution to the society, polity and the economy; developing ability to think critically; fostering decision making and action through collective processes; enabling women to make informed choices in areas like education, employment and health (especially reproductive health); ensuring equal participation in developmental processes; providing information, knowledge and skill for economic independence; enhancing access to legal literacy and information relating to their rights and entitlements in society with a view to enhance their participation on an equal footing in all areas.

An innovative initiative in the area of girls/ women's education has been the Mahila Shikshan Kendras (MSK). These are residential courses, aimed at developing a pool of aware, trained and literate women at the village level.

The curricula followed is diverse ranging from material developed in partnership with the learners and imparting life skills and skill development, to enabling the learners to join the mainstream education system. The MSK has been able to draw in girls and young adults, who for a variety of reasons do not benefit from the mainstream schools.

Jharkhand Mahila Samakhya Society (JMSS) currently works in over 4,000 villages of 76 blocks in 11 districts of Jharkhand including Ranchi, Khunti, East Singhbhum, West Singhbhum, Saraikela-Kharswan, Garhwa, Giridih, Pakur, Godda, and Sahibganj. Areas of work are chosen based on low levels of female literacy and their general condition in society. It is currently registered under Society Registration Act 1860, and has been working as an independent unit since 2007.

Secondary Education:

The implementing body in Jharkhand for secondary education is the Jharkhand Secondary Education Project Council (JSEPC).

- Rashtriya Madhyamik Shiksha Abhiyan (RMSA):

This is a centrally sponsored scheme that aims to raise the minimum level of education to class 10 and universalize access to secondary education; ensure good-quality secondary education with focus on Science, Mathematics, and English, and reduce the gender, social, and regional gaps in enrollments and improving retention.

The interventions supported under RMSA included upgrading of upper primary schools to secondary schools; strengthening of existing secondary schools; providing additional classrooms, science laboratories, libraries, computer rooms, art/craft/culture rooms, toilet blocks and water facilities in school; providing in-service training to teachers; and providing for major repairs of school buildings and residential quarters for teachers.

In 2012-13 there were no new schools set up or sanctioned under RMSA in Jharkhand.

- Information and Communications Technology (ICT) in Schools Scheme:

This scheme was launched in December 2004 to provide opportunities to secondary students to build their capacity of ICT skills and make them learn through computer-aided learning process. The scheme provides support to States/Union Territories to establish enabling ICT infrastructure in government and government aided secondary and higher secondary schools. It also aims to set up Smart schools in Kendriya Vidyalayas and Navodaya Vidyalayas, pace setting institutions of GoI to act as "Technology Demonstrators" and lead in propagating ICT skills among students of neighbourhood schools.

- Scheme for Construction and Running of Girls' Hostel for Students of Secondary and Higher Secondary Schools:

This is a new centrally sponsored scheme launched in 2008-9 to set up a 100-bedded Girls' Hostel in each of 3,479 EBBs in the country. Previously assistance was provided to NGOs for the running of this scheme.

As of 2011-12, when there were 203 EBBs in Jharkhand, the state government has proposed construction of hostels in 81 of them. However, building design was to be revised as it was not per the scheme norms.

- Model School Scheme:

This scheme aims to provide quality education to talented rural children through setting up of 6,000 model schools as the benchmark of excellence at the block level. Objective are to have at least one model senior secondary school per block; to have a pace setting role; to try out innovative curriculum and pedagogy; and to contain model infrastructure, curriculum, evaluation, and school governance. It is targeted to operate in 3,500 EBBs through State Governments, and 2,500 schools set up under Public-Private Partnership (PPP) that are not in EBBs.

Currently there are 89 functional model schools in Jharkhand, covering the EBBs in Latehar, Chatra, Hazaribagh, Giridih, Sahibganj, Pakur, Dumka, Dhanbad, Khunti, Lohardaga, Simdega, West Singhbhum, Saraikela-Kharswan, East Singhbhum, Godda, Gumla, Koderma, Ranchi, and Simdega districts. For 2014-15, there have been 75 more model schools have been approved into Bokaro, Chatra, Deoghar, Dhanbad, Dumka, Garhwa, Giridih, Hazaribagh, Jamtara, Khunti, Koderma, Pakur, Palamu, West Singhbhum, East Singhbhum, Ramgarh, Ranchi, and Sahibganj. The recurring funds release for the state is Rs. 4.1848 crores.

- National Means Cum-Merit Scholarship Scheme:

This is a scholarship scheme for meritorious students from economically weaker sections and meant to halt drop outs at class 7. Yearly scholarship of Rs. 6,000/- per

student is awarded to selected students every year for those in classes 9-12. Students' parental income cannot exceed Rs. 1,50,000 and they must take a state government administered examination to be eligible.

For the 2013-14 Examination in Jharkhand, 264 students got a passing result. Of these students, 98 are female. In addition, 90 are ST, 30 are SC, 35 are general castes, 88 OBC, and 21 MBC, and are from the following districts; Ranchi (26), Gumla (9), Simdega (4), Lohardaga (8), East Singhbhum (10), West Singhbhum (8), Saraikela-Kharswan (5), Latehar (1), Palamu (7), Garhwa (3), Hazaribagh (14), Chatra (5), Koderma (7), Giridih (30), Bokaro (28), Dhanbad (10), Dumka (14), Godda (7), Deoghar (26), Jamtara (12), Pakur (2), Sahibganj (7), Khunti (16), Ramgarh (5).

Quality Improvements in Schools:

During the 10th Five Year Plan, this was introduced as a composite centrally sponsored scheme having the following components; National Population Education Project, Environmental Orientation to School Education, Improvement of Science Education in Schools, Introduction of Yoga in Schools, and International Science Olympiads:

The component of Improvement of Science Education in Schools was transferred to states, and the remaining four components were transferred to National Council of Educational Research and Training (NCERT).

In his Republic Day address in 2014, the Chief Minister of Jharkhand stated that in order to reduce the shortage of teachers, selection procedure of 14,000 teachers has started which is expected to finish by February end. For class 6-8, selection of around 8,000 teachers will begin. In addition, Minority Middle Schools and Madarsas have been sanctioned funds and the process of appointing Urdu teachers has also begun.

Strengthening of Teacher's Training Institutes:

The government has initiated steps to revise the existing centrally sponsored scheme of Restructuring and Reorganisation of Teacher Education. District Institutes of Teacher Education (DITEs), Colleges of Teacher Education (CTEs) and Institutes of Advanced Study in Education (IASEs) were established for professional preparation of teachers.

Para-teachers, who differ from regular/government teachers, are teachers appointed on a contract basis under varying service conditions in terms of salary and qualification requirements. The School Management Committee (SMC) does recruitment of para-teachers and it has been observed that most of the para-teachers recruited are either untrained or purely raw in the field of teaching. Thirty day induction trainings for all new para-teachers are included as they form an important segment in government education.

Department of Human Resource Development (Department of Higher Education)

The University Grants Commission (UGC) is a statutory organization established by an Act of Parliament in 1956 for the coordination, determination, and maintenance of standards of university education. Apart from providing grants to eligible universities and colleges, the Commission also advises the Central and State Governments on the measures which are necessary for the development of Higher Education. The following universities in Jharkhand are recognised by the UGC with enrollment data as given by the same:

Type	Name	Location	Total Enrollment	♀ Enrollment (%)
State	Birsa Agricultural University	Kanke, Ranchi	625	110 (18)
	Kolhan University	Chaibasa	38339	13354 (35)
	National University of Study & Research in Law	BIT Mesra, Ranchi	159	71 (45)
	Nilamber-Pitamber University	Daltonganj, Palamu	49748	17390 (35)
	Ranchi University	Ranchi	59948	30677 (51)
	Sido Kanhu University	Dumka	19270	4718 (24)
	Vinoba Bhave University	Hazaribagh	39750	13289 (33)
Central	Central University of Jharkhand	Ranchi	255	N/A
Deemed	Indian School of Mines	Dhanbad	N/A	N/A
	Birla Institute of Technology	Mesra, Ranchi	3929	N/A
Private	The Institute of Chartered Financial Analysts of India University	Ranchi	N/A	N/A
	Jharkhand Rai University	Ranchi	N/A	N/A
	Sri Nath University	Ranchi	N/A	N/A
Source: UGC website				

Department of Science and Technology

The State Board of Technical Education (SBTE) is under the administrative control of this department. Since its formation, SBTE is striving continuously for betterment of academic standard of Polytechnics and Women Industrial Schools (WIS) of this state. The board has introduced the semester system from the session 2009-10, and updated the

The CM in his address also stated that a new engineering college has been started in Chaibasa and Ramgarh; Dumka Engineering College will also commence with its courses in the next session; and engineering colleges such as Manipal and Amity have been invited.

curricula in all the Polytechnics.

Polytechnics:

There are a total of 19 Government and Private Polytechnics located in Ranchi, Dhanbad, Khunti, Koderma, Latehar, Dumka, East Singhbhum, Saraikela-Kharswan, and Bokaro. Of these, 13 are Government Engineering Polytechnics of which 3 are Government Women Polytechnics. The following enrollment data was obtained from Government Polytechnics in Ranchi and Dhanbad for the last three academic sessions:

Government Polytechnic, Ranchi				
Students Enrolled in Civil, Electrical, Mechanical, Electronics Communication, and Computer Engineering Courses				
Session	**Total Students**	**Total Female (%)**	**ST (%)**	**SC (%)**
2011-14	290	0	74 (25.5)	35 (12.1)
2012-15	319	3 (.9)	84 (26.3)	44 (13.8)
2013-16	312	6 (1.9)	75 (24)	35 (11.2)
Source: Government Polytechnic, Ranchi				

Govt Polytechnic, Bhaga, Dhanbad		
Students Enrolled in Mining and Computer Engineering Courses		
Session	**Total Students**	**Total Female (%)**
2011-12	28	0
2012-13	22	0
2013-14	26	3 (11.5)
Source: Government Polytechnic, Bhaga, Dhanbad		

Government Women's Polytechnics are located in Ranchi, Jamshedpur, and Bokaro. These three institutes have course in Electronics and Communications Engineering, Computer Science and Engineering, Electrical Engineering, Information Technology, Mechanical Engineering, Architecture Assistant, and Computer Engineering. Course availability depends on location.

Data obtained from Government Women's Polytechnic, Tharpakhna, Ranchi shows that there are currently 64 enrolled in Electrical, 62 in Computer, and 62 in Communication. There are currently 12 part time teachers, 3 of which are women.

Women's Industrial Schools (WIS):

WIS are located in Ranchi, Daltonganj, Hazaribagh, Bokaro, and Jamtara. They are specially established for self employment and development of entrepreneurial skills among the women section. Courses offered are listed below:

Location	Course	Duration	Seats
Ranchi, Daltonganj, Bokaro	Cutting & Tailoring	1 year	60
	Hand Knitting	6 months	60
	Machine Embroidery		60
	Doll & Toys Making		60
	Hand Embroidery		60
	Machine Knitting		60
Bokaro, Jamtara	Cutting & Tailoring	1 year	20
	Food Processing		20
	Computer Operation & Typing		20
	Radio & TV		20
	Beautician	6 months	20
Source: SBTE website			

As seen in the table above, most of the courses available are those stereotypically thought of as appropriate for women, with the exception of a computer and radio/TV course in Bokaro and Jamtara. WIS differ from Polytechnics and Women Polytechnics as the latter have longer courses which are focused on engineering subjects.

Department of Labor, Employment and Training

Industrial Training Institutes (ITIs):

Both Government and Private ITIs are listed to run 1 or 2 year courses in the following trades; Fitter, Turner, Machinist, Machinist Grinder, Electrician, Wireman, Motor Vehicle Mechanic, Surveyor, Draftsman Civil, Electroplater, Refrigeration and Air Conditioning Mechanic, Building Construction, Refactorimetion, Instrument Mechanic, General Electronics Mechanic, Radio and TV Mechanic, Information Technology, Computer Hardware Mechanic, Consumer Electronics Mechanic, Industrial Electronics Mechanic, Production and Manufacturing, Carpenter, Plumber, Diesel Mechanic, Welder, Molder, Sheet Metal Worker, Hindi/English Stenographer, Driver cum Mechanic, Auto Electrician cum Electronics, Computer Operator cum Programming Assistant, Hair and Skin Care, Tractor Mechanic. Course availability depends on location.

They are listed to be operable in the following districts; Dumka, Sahibganj, Ranchi, Hazaribagh, Dhanbad, West Singhbhum, Bokaro, Daltonganj, East Singhbhum, Giridih, Garhwa, Saraikela-Kharswan, Pakur, Deoghar, Chatra, Lohardaga, Jamtara, Gumla, Ramgarh, Koderma, and Simdega.

Women Industrial Training Institutes (ITIs):

These are only for women, are listed to operable in Ranchi, Dumka, West Singhbhum, Hazaribagh, East Singhbhum, and Latehar. One and two year courses in the following trades are listed to be available; Radio and TV Mechanic, General Electronics Mechanic, Hindi/English Stenographer, Cutting & Tailoring, Embroidery and Needle Work, Computer Operator cum Programming Assistant. Course availability depends on location. The following data was obtained from Department of Labour, Employment, and Training which

reflects course and seat availability for women seeking opportunities in Women ITIs in Jharkhand for 2013-15.

Location	# Courses Offered	Seat Reservations per Course				Total Seats per Course	Total Seats overall
		General	ST	SC	Others		
Dumka	3	8	7	1	2	18	54
Hazaribagh	2	8	1	3	6	18	36
Chaibasa	2	8	7	1	4	20	40
Jamshedpur	5	8	4	1	5	18	90
Latehar	5	8	5	3	2	18	90
Ranchi	3	8	6	1	3	18	122
	2	16	12	2	4	34	
Jharkhand	22	64	42	12	26	144	432
Source: Dept of Labour, Employment and Training website							

A simple review of the courses listed as available in ITIs and Women ITIs reveals how technical education is biased towards men. A total of 33 courses are available in ITIs, 4 of which are also available in Women ITIs, namely Radio and TV Mechanic, General Electronics Mechanic, Hindi/English Stenographer, and Computer Operator cum Programming Assistant. Aside from these 4 courses, 28 technical courses are available only in ITIs and not in Women ITIs.

Department of Information and Technology

Jharkhand Agency for Promotion of Information Technology (JAP-IT) is the implementing agency for the policies of the state government in the area of IT. It aims to provide IT inputs to government departments and agencies and assist with their computerization and networking and to coordinate with investors and industry, trade organisations, and financial institutions.

Service Facilitation through National e-Governance Plan (NeGP):

To make easier the procurement of government services in Jharkhand, the following projects are going on; Jharnet, Pragya Kendras, E- Citizen, video conferencing, court sentencing trials, land registration, and treasury computerization. Work is ongoing on e-registration, return filing, e-Kalyan, CCTV, Pension Management System, e-Panchayat, and OASYS.

Pragya Kendra/Common Service Centre (CSC) Scheme:

Jharkhand is the first state in the country to adopt this scheme. Along with JAP-IT, the service centre agencies appointed by the state are Zoom Developers, Alternatives for India Development (AID), and United Telecoms Ltd (UTL) for setting up CSCs in each panchayat, totaling 4562 CSCs. Currently, there are 4013 operational CSCs.

The five certificate issuing services available are for caste, income, residence, birth, and death. Other experiments that have been piloted include online land records, online grievance redressal, convergence with postal service, NREGA muster roll entries, video-conferencing for jail inmates with their families/friends (currently in 16 jails), creation of 691 panchayat banks, releasing scholarships, eye screenings for school children, and resource centres for farmers.

E-District Scheme:

For Ranchi district, all blocks would provide caste certificate, birth and death certificate, residence certificate and income certificate to the public. So far, 2.08 lakh certificates have been issued.

Others

Tribal Sub Plan (TSP) and Schedule Caste Sub Plan (SCSP):

Since 1974, TSP aims to ensure adequate flow of plan resources for the development of Scheduled Tribes. It envisages integrated development of tribal areas wherein all programs irrespective of source of funding operate in unison to achieve the goal of bringing tribals at par with rest of the state and improve their quality of life. It is geared towards family oriented income generating schemes, elimination of exploitation, and human resource development through education & training and infrastructure development. Similarly, the strategy of Scheduled Caste Sub Plan (SCSP) has been in force since 1979-80, to ensure proportionate flow of plan resources for the development of Scheduled Castes.

For SCSP, Ministries/Departments earmarking more than 15% of Plan outlays are those in the primary sector, skill development, implementing poverty alleviation, and social sector programmes. This includes Ministries of Labour and Employment, Panchayati Raj, Housing and Urban Poverty Alleviation; Woman and Child Development; Social Justice & Empowerment; and Departments of Agriculture & Cooperation; Animal Husbandry, Dairying and Fisheries; Health and Family Welfare; Higher Education; Land Resources; Youth Affairs and Sports; School Education & Literacy, Rural Development, and Drinking Water Supply. At present 27 States/UTs having sizeable SC populations are implementing SCSP.

For TSP, Ministries/Departments earmarking more than 7.5% of Plan outlays include Ministries of Panchayati Raj; Micro, Small and Medium Enterprises; Coal; Labour and Employment; Women and Child Development; Tribal Affairs; and Departments of Health and Family Welfare; Higher Education; Land Resources; Youth Affairs and Sports; School Education & Literacy, Rural Development, and Drinking Water Supply.

Special Central Assistance:

Special Central Assistance (SCA) is a central scheme under which 100% grant is given to the States/UTs as an additive to their SCSP and TSP. Jharkhand has been allocated Rs. 12,187 lakh for the financial year 2013-14.

National Skill Development Corporation (NSDC):

NSDC is a PPP set up the Ministry of Finance to facilitate the development and upgrading of the skills of the growing Indian workforce through skill training programs. A large part of the organisation's efforts are directed at the private sector and towards developing the skills in the unorganized sector.

For financial year 2013-14, NSDC had supported 3,509 trainings in 10 districts in Jharkhand, namely, Dhanbad, Dumka, East Singhbhum, Giridih, Hazaribagh, Jamshedpur, Lohardaga, Ranchi, Sahibganj, and West Singhbhum with a total of 7 partners and 26 centres. Partners include All India Society for Electronics and Computer Technology (AISECT), B-ABLE, Don Bosco Tech Society, IIJT Computer Education Pvt. Ltd., IL&FS Skills Development Corporation Ltd., PANIIT Alumni Reach for India (PARFI), and Rooman Technologies.

Sectors include agriculture, IT, IT enabled service, electronics & IT Hardware, banking, financial services, insurance, education and skill development, retail, construction, tourism , hospitality, food processing, engineering, medical, healthcare, apparel, manufacturing, textile, leather and leather products, automotive/auto components and logistics.

About the Study Districts

PALAMU

Palamu is a perpetual drought zone that borders Aurangabad district of Bihar, and Garhwa and Latehar districts which also fall under Palamu division. It has a mixed Bihari and tribal culture compared to other areas in Jharkhand. Tribal groups in Palamu include Chero, Oraon, and some PTGs. It is also a naxal affected district.

Male dominance is reported to be very strong, and of our 5 study districts, it has the lowest percentage of female population of 48.2% and female sex ratio of 929 (females/1000 men), both of which are lower than the state averages of 48.6% and 948, respectively.

There is widespread unemployment here, and most people are labourers, with men migrating regularly to places like Delhi and Bombay. Women and children have also started to do seasonal labour migration such as working in brick kilns and crop harvesting. Child labour is also very common, whereas there are not many cases of adolescent girls' trafficking as is in other districts. There is poor implementation of government schemes such as ICDS and PDS, as well as many TB, hunger, and malnutrition cases.

Blocks Covered: Daltonganj, Lesliganj, Chainpur

SAHIBGANJ

Sahibganj is a mostly hilly region of Santhal Pargana division, bordering the river Ganga near Bihar and West Bengal. It has a rich history, and well known for the 1855 Santhal Rebellion of brothers Sido and Kanhu. It is home to Santhali, Paharia, and Mal Paharia tribes, with other marginalised groups including Dalits and Muslims. Three blocks of Sahibganj have a predominately Muslim population.

The forest is diminishing and many mining operations are going on. Even though it is a 5th Scheduled Area (meaning non-tribals cannot buy tribal land), there is non-tribal mafia control of many natural resources including the

hills which are being heavily mined. Tribals farm, sell timber, bamboo, fruits such as mangoes, but are unable to do so in many places now.

It has the second highest population density (719 persons/km^2) after Dhanbad and both the second lowest overall literacy rate (53.7%) and female literacy rate (44.3%) after Pakur.

Blocks Covered: Sahibganj, Rajmahal, Borio, Taljhari, Baraharwa

SIMDEGA

Simdega is located in South Chotanagpur division, bordering Orissa and Chhattisgarh, and Gumla, Khunti, and West Singhbhum districts in Jharkhand. It is home to mixed tribal groups such as Munda, Oraon, and Kharia, which comprise 70.2% of the population, making it the highest tribal populated district in the state. Rain-fed agriculture is the biggest source of employment, and some people are also dependent on forest produce.

However, farming is under-developed and does not sustain people, and therefore migration is viewed as the only option for livelihood. Seasonal migration is common, as is the migration/trafficking of young girls to metro cities in the country. It is also a naxal affected district.

The national highway that runs from Ranchi through Simdega town and onto Rourkela is in poor condition. Out of all the districts in Jharkhand, it has the lowest population density (160 persons/km^2), but also the second highest child sex ratio (975 females/1000 males) and the lowest literacy gender gap (16.5%). Of our 5 study districts, it has the lowest population and decadal population growth, but the highest overall and female literacy rate.

Block Covered: Simdega

GIRIDIH

Giridih is located in North Chotanagpur division in the coal belt of Jharkhand, bordering Bihar to the north. Coal and mica are the main natural resources and center much economic activity. It is a mixed population, with only a few blocks having a large ST population.

As with most of the state, there is rain-fed agriculture here, and there are decreasing ground water levels. Most boys migrate for factory based work in places like Surat and Bombay, for a period of 9-10 months. There is also child labour going on, for example in the CCL (Central Coalfields Limited) area or in mica picking activities. Naxalism and casteism are also present here as well.

Giridih has the highest literacy gender gap (28.8%) and the largest child population in the state. Of our 5 study districts, it has the highest population, decadal population growth, and lowest child sex ratio (934).

Blocks Covered: Giridih, Bengabad, Teesri, Jamua, Gawa

WEST SINGHBHUM

West Singhbhum is the largest district of Jharkhand, with Chaibasa as the district headquarters. It is located in Kolhan division, bordering Orissa to the south. It is home to one of the densest Sal forests in Asia and rich in minerals such as iron ore used for steel production. It is home to mostly tribals such as Ho and Munda, having less of a Dalit population.

Due to lack of employment there is increased migration, even though NREGA has stopped migration considerably. Males go on 1-2 year contracts for construction related work in Bombay, Nagpur, Allahabad, and also in Gujarat. Child labour and naxalism is also present here.

West Singhbhum has the highest proportion of female population (50.1%), highest sex ratio (1004 females/1000 males), and highest child sex ratio (980 females/1000 males) of all districts in the state.

Blocks Covered: Chakradharpur, Noamundi, Chaibasa, Jhinkpani

Overall Findings

Issues Affecting Women and Girls

The following information covers the socio-economic background of women and girls of the districts covered during the feasibility study. The issues that emerged include work, trafficking, health, governance, marriage, and gender inequality.

Work

Women and girls have many work responsibilities from agriculture, labour, and household work. In situations of landlessness, many women and girls work as domestic workers or agricultural labourers. They also rely on selling forest produce such as wood, leaves, and fruits. However, as rains are unreliable and irrigation precarious, women have started migrating to various places to make ends meet. For example, in Palamu, previously it was only men who seasonally migrated, but women and even girls have started migrating as well. They go for a few months' time to do work such as seeding and harvesting of rice and wheat in Bihar and/or work in brick kilns and rice mills. In addition to facing harassment and eve teasing while migrating, they are paid less wages compared to males, and often their wages are withheld.

Juhi SHG, Village Teesri, Giridih:

The women reported that a majority of their husbands are labourers, 1 is a carpenter, and another is sick. They each have 1-6 children, many of whom are studying, not studying, married, or very young. Before joining the group, they did labour work and were indebted to the local Mahajan. They had to put up mortgages to pay off the loans, but through the SHG they are in a better situation. Water and employment are seen as the biggest problems.

Trafficking

Champaba Samiti, Village Purulia, Sahibganj:

Farming yields only 1 crop of rice, some vegetables, and animal husbandry. They send all their girls to school, and said that age of marriage has increased from 12-13 years to 18 years. There are drinking water issues, as there are high levels of arsenic in the water. They know that many women and girls migrate for domestic work, but because they are all aware of the drawbacks, no one from their village migrates for outside domestic work. People from nearby villages go to work in the stone crushers.

In many districts of Jharkhand, tribal adolescent girls are voluntarily migrating or being trafficked to work in metro cities across the country as domestic workers. Of the districts covered in this study, West Singhbhum, Sahibganj, Giridih, and Simdega had a high rate of girls' trafficking. Girls go to cities like Delhi starting from age 12-13 up to 20, through linked local brokers who also facilitate sending girls' remittances to their families. In Sahibganj, there were not many cases of trafficking a decade back, but now villages are filled with girls

who have gone and returned from Delhi. In Sahibganj and Simdega, it was reported that many girls want to migrate as they see their peers doing so. Sometimes their families send them, and are happy to see them earning money. However, girls do face violence and exploitation in their workplaces, as many recent cases have even made national headlines.

Health

Hunger and malnutrition is very prevalent amongst women. PTG women in areas like Palamu, are strongly afflicted with this.

Governance

Though women have greater social duties, they are not given equal voice in governance whether in Gram Sabha meetings or Panchayat elections. Even though men and women may be having equally low literacy, women come to meetings only to give their attendance, not their participation or voice, even if there is discussion on women's issues. Women do not have land rights, and are not found in many local leadership positions. Even though many women have won seats in the current election, they aren't able to use their position effectively, unless they are particularly empowered.

Marriage

Early marriage for girls is a normative tradition as people are not aware of the problems related to it. For tribal girls, the most reported situation was that of love marriage, where teenagers often choose their partners after meeting them in local melas. Parents don't discipline or guide their adolescents, and therefore they end up deciding whom they want to marry around ages 14-18. In West Singhbhum, an NGO head told the study team that girls say that if they don't follow the whims of boys, then they fear that they would not be able to get married.

In Sahibganj, Santhali women have the freedom to leave their husbands, though they fear that their husbands would leave them. Many husbands take on multiple wives. Here, both Muslim and Tribal women are abandoned by their husbands and not given any maintenance. In Giridih, there were cases where young girls were married off to elder men from Haryana.

Gender-based Violence

All of the issues described above reflect the persistence of gender inequality. Of the 5 districts covered, Palamu stood out for male dominance over women, however, women's lack of decision making power was reported overall.

In Palamu, Sahibganj, and West Singhbhum, there are many cases of witch hunting, indicating the strong presence of superstition. Women are directly targeted as social criminals, and face violence as a result. This usually happens when a land issue arises. In order to suppress her and maintain property control, she is portrayed as a witch. When cases are brought to the police stations, they are often not registered as witch hunting cases, even though there is a specific law under which cases are to be filed.

School Education

One of FAT's core programs recently initiated focuses on STEM education of adolescent girls in class 6-9. Therefore, when exploring the feasibility of expanding FAT's work in Jharkhand, it was important to focus on the condition of government schools, what the challenges would be to work with and in them, and where support could be sought. There are an innumerable amount of problems and challenges faced by the government schooling system, which are interconnected to peoples' socio-economic condition. In addition, the study team explored KGBVs and Mission Schools in various districts both during recce and field interviews.

This section will highlight the information gathered regarding the condition of schools; science, maths, and computer subjects; drop outs; further education; and the challenges of working government schools. Suggestions to improve education, specifically science and maths, as put forth by our interviewees are given in the Challenges and Suggestions part of the repot.

Condition of Government Schools

The first thing remarked upon was the poor quality of education. Many people across the five study districts noted that students were not up to speed with their curriculum, for example, middle school students not being able to do basic maths or recongise alphabets. It is common knowledge that MDM is the main program of most schools, and within that scheme there are many on-going challenges.

Teachers of Government High School, Biru, Simdega

These teachers teach in Government High School in Biru, located along the national highway 8 km outside of Simdega town. They come from 4-28 km away and have been at this school ranging from 3 to 20 years. There are 131 regularly attending students in class 9 and 10 coming from 6-10km, and about 40% girl students.

Their parents are dependent of farming, have less land, and therefore face a lot of financial problems. Students are not at the level that they should be at. Parents cannot afford tuitions for them, and often come back from work in the night.

The implementation of the Right to Education (RTE) Act, 2009 is far from being implemented in many states, and Jharkhand is no different. According to AK Singh, the director of LEADS, an NGO working on education in Jharkhand, not even 5% of the schools comply with the RTE guidelines. A main point of debate with respect to RTE is that although it mandates free and compulsory education to all children aged 6-14 (covering class 1-8), students cannot be failed. In order to address any curricular difficulties, teachers are required to hold remedial classes to assist those students in need. However, these classes don't happen. Therefore this rule alone has negatively impacted students' motivation (and perhaps those of teachers as well). This is especially true for girls, who for a variety of reasons, tend to leave school more often.

Teachers

One cannot discuss the condition in government schools without understanding the situation of teachers in government schools. Teachers are of two types- regular or para-teachers, having differing salaries and duties. Regular teachers tend to have lack of interest and motivation towards their teaching duties and are not qualified, trained, or knowledgeable enough about the subjects they teach. Many do not even come to school. In most schools, it is para-teachers who may take interest and are keeping some semblance of the school together.

The biggest problem in Jharkhand regarding teachers is the lack of them in government schools. Single teacher schools, multi grade, and multi subject teaching is very common across the state. According to AK Singh, there is presently a 46:1 student teacher ratio, and it would take the appointment of 66,000 new teachers to bring the ratio to the 40:1 standard as per the RTE. At the various schools visited during the course of this feasibility study, student teacher ratios of 30:1, 42:1 and 70:1 were found in Simdega, West Singhbhum, and Palamu, respectively. DEO West Singhbhum has told that in 66 upgrade high schools, there has only been one round of teacher appointments since 2005-6.

Teachers face many challenges in the present government school system. The main being that the teachers are responsible for various administrative tasks outside of their classroom duties such as filling up MDM registers, maintaining voter lists, and doing various registrations. Since staff shortage is the norm, there becomes a race between administrative tasks and completing the curriculum. Because of this, schools are periodically closed for students.

DEOs of Sahibganj, Palamu, and West Singhbhum affirmed that district and state level teachers' trainings are on-going.

Teachers of Fr. Anthony Murmu Memorial School (non-government), Village Sabaiyya, Sahibganj

The teachers are all Santhali and come to school from up to 8 km, mostly coming by cycle. They have been teachers at Fr. Anthony Murmu School for as little as 3 months to 21 years. There are total of 562 students of classes 1-6 who come from up to 12 kms. away by foot, cycle, and bus. There are 43% girl students here.

Most of the students are 1st generation learners with much financial problems in their homes. As they are from rural backgrounds, their parents sell wood as ends do not meet with a single crop of rice a year or the rabi vegetables. Much is dependent on the weather.

The teachers say that students, both boys and girls, don't get the studying environment in their villages to study subjects like science. At home they must also tend to household work. They bring children's' magazines from the market, give repeated practice in Maths, and do fun activities using local materials. They start by teaching in Santhali to the primary classes so that they pick up Hindi faster and in addition to Hindi, Maths, and English.

Students

Students attending government schools generally come from marginalized communities and economic classes as paying private school fees is a burden for these families. Parents are aware of the poor condition of education in government schools, and definitely prefer private schools if given the choice. Those students that are 1st generation school goers face the divide between the environment and expectations of their school and home. For example, students may not get so much parental guidance with respect to their school subjects, or may not have access to books or magazines in their homes.

Because of the poor quality of education, school does not yield good livelihood options for students. Students become stuck, both without job options and skills or interest in farming. With respect of SC/ST, it was stated in both Palamu and Sahibganj, that because these communities are seen as a labour class, there is not any priority of effort made to improve their education.

The number of girls in government schools from various communities has increased over the past few years, though the ratio is still skewed towards boys. Schemes such as stipends, scholarships, and cycle distribution are reported to have contributed to this increase. In tribal areas such as in Sahibganj, there was reported to be an equal number of Santhali boys and girls studying, especially due to girls'

Mothers group, Simdega

3 of them are doing farming or household work and unemployed, 1 is unemployed, 1 does household work, and 1 is learning skills. They had a total of 16 children altogether, 11 girls and 5 boys, 15 of whom are currently studying, and 1 who is matric pass. There have small tracts of land close to the urban area where they clash with others whose animals ruin their crops, and also face irrigation problem, especially those whose lands were flooded due to the Kelabari dam. Unemployment is their main problem.

The Church decrees age of marriage at 18, so as Christian tribals, there is no marriage happening before this age in their community.

Most of the mothers sent their children to private or mission schools. Teacher retention rate is really low in private schools, because of which students have to adjust to new teachers. Quality of teaching is low because the number of students has increased, teachers are not properly trained, and there may not be separate subject teachers.

There is no (functional) technical institute in Simdega and it is difficult to send their children to Ranchi because of financial reasons. They place education on a high priority for both their boys and girls. 3 of mothers' daughters are taking commerce.

2 said they want her to get a good education, 2 said they want her to get a good job/income, 1 said she wants her to live in a good place with enough food to eat, 1 said she wants her to get banking, 1 said teaching, and 1 said she wants her young daughter to get English medium education.

hostel and mission schools.

Interests and Results

As discussed above, due to poor quality of education and diminishing motivation, students tend to have weaker educational foundations. In this situation, it becomes difficult to ascertain their interest. The maths teacher at Biru High School, Simdega discussed that interest is determined by the strength of the foundations, and with weak foundations come low interest. Given the right environment, however, girls will become interested.

Teachers at the same school try to explain things using simple methods. One noticed that even though girls may be interested during class, it does not translate to a good result.

Science/Maths

As discussed above, Jharkhand government schools face a shortage of teachers. Specifically there is a shortage of subject teachers. According of DEO West Singhbhum, only 30% of science and maths teacher positions have been filled in the district. An anecdote from Palamu reveals this as well; the science toppers last year was found to be a student of a school having no science teacher, who learned the subject only though attending tuitions.

Maths and science are taught by rote methods in government schools. Science experiments and practicals do not happen frequently, and labs and science materials are either non-existent of non-functioning. However, there are some schools and colleges were practicals do happen and labs are there as well, as was told was the case in Biru High School, Simdega and Government Girls +2 High School, Daltonganj by the respective principals. These schools, and also Government Girls High School, Chaibasa also reported that students are selected to participate in district and state level science exhibitions. The high school principal in Daltonganj said that many girls are not given permission by their parents to participate at the state level even though it is free of cost for them.

According to activists in Palamu and Giridih, there is great potential in girls learning science. They first get attracted to the fun aspect of science, which to them is like magic. If they understand the process, and begin to adopt scientific thinking, then they would be

Class 8-9 School girls, Rajmahal, Sahibganj

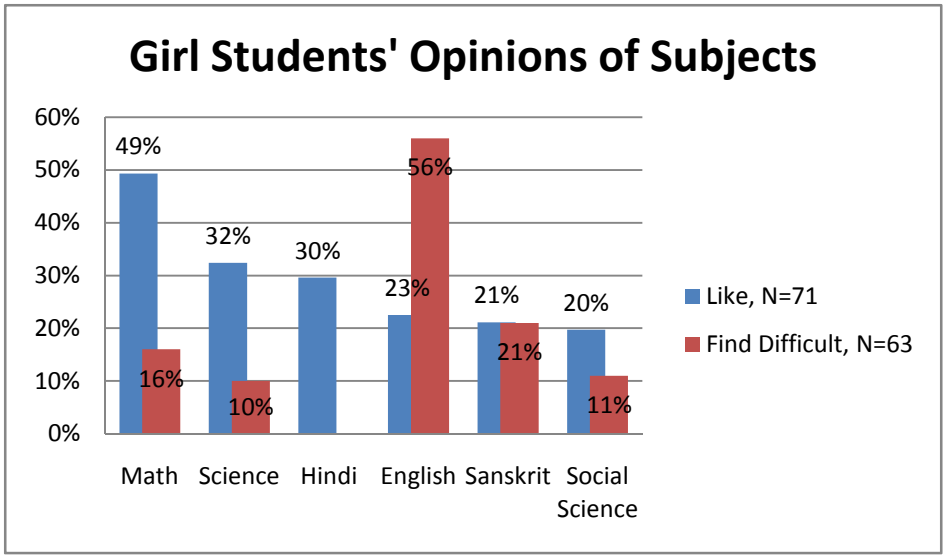
These are Muslim girls coming from households ranging from 4-10 people. Their brothers are working in shops or outside, 1 is a construction worker, 1 is a contractor, and 1 studies whereas their fathers are contractors, drive thelas, 1 owns a paan shop, and 1 is a tailor. They do not get permission to play outside and instead watch TV serials in addition to household work like sweeping, washing, fetching water, cooking, and mopping.

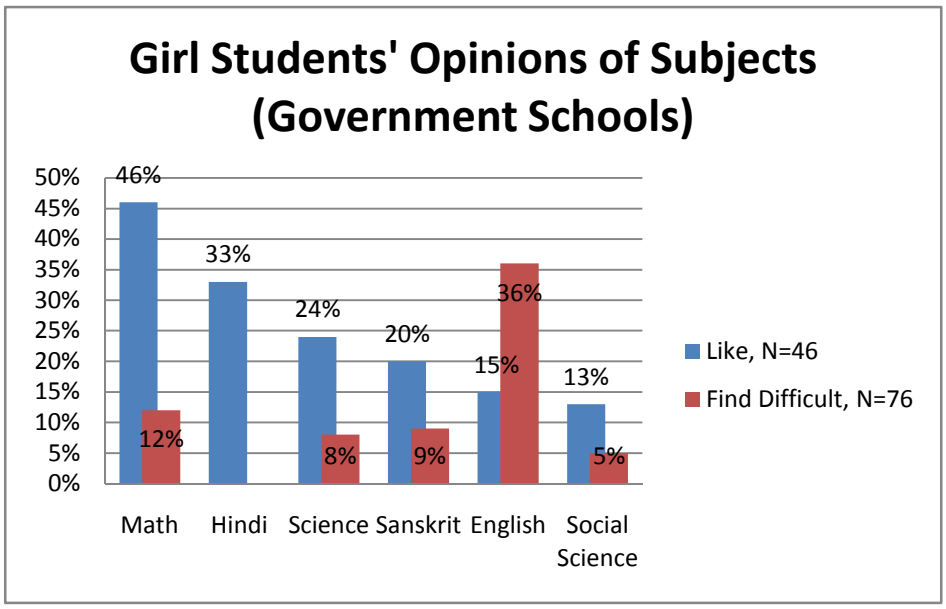
They said that those girls that sit in the front row only get to understand, and that they are not focused upon. They haven't seen anyone taking up maths in higher education. They don't do practicals nor are taught computers. Only one girl had seen a computer café. Everyone wants to become a teacher.

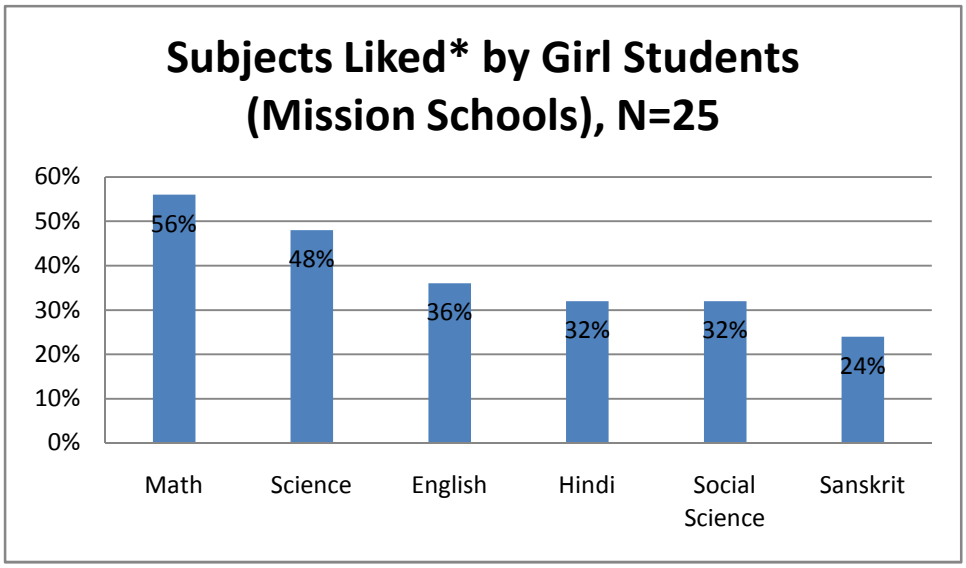
better able to fight superstitious beliefs such as witch hunting that prevail in their communities. They would be equipped to raise issues related to their own rights.

Girls' Opinions of School Subjects

Given in figures below are the responses of girls to subjects they liked and found difficult. District-wise composition of all girls with whom FGDs were conducted, including government school students and mission schools students, can be found in Annexure 3.







***Subjects found difficult not included due to low number of responses**

"Liking a subject" and "Finding a subject difficult" questions are not necessary mutually exclusive as each girl gave multiple responses, some of which were overlapping. Overall, girls reported to like math and science. English was very strongly regarded as a difficult subject, along with Sanskrit. There were not many differences between Government and Mission School girls in subject liked, with the exception of Science, which was more liked by Mission School girls.

'Subjects found difficult' are not possibly to compare with girls of the different education systems due to low number of responses in mission schools. It must be also re-emphasized that this data is subject to limitations as it may be affected by memory, interpretation of 'liking' and 'finding difficult', and social desirability bias toward responding to 'Maths' and 'Science' as those subjects were the focus of the interview.

Class 7-10 School girls, Gawa, Giridih

These girls live in household ranging from 2 to 9 people. Most of their siblings are studying (56%), whereas some of their brothers are working outside, 1 works in a shop and another as a carpenter. Their sisters are either studying or housewives. Their fathers are farmers or work in shops, 1 is a doctor and another work as a driver in Jamshedpur. Most of their mothers are housewives, 1 works in a shop, another works for Mahila Samakhya, and another does stitching work. 7 of the girls get free time to play in addition to doing housework, whereas 1 gets no free time because of household responsibilities, and 2 do not have household responsibilities.

They have 6 teachers in their school and see that sometimes they do not teach and simply sit and chat, so therefore girls need to take coachings. When their math teacher comes, he does class properly. It is the same issue with their science teacher. They have never participated in science exhibitions. There is also no bathroom in their school causing them a lot of problems.

Computers

Computer education in government schools of Jharkhand is a neglected area. In the government schools visited during this study, there was no computer education going on at the time. Data obtained from block officers in Hazaribagh show that in the 2-12 high schools in each block, 1-6 of them are having computers (not necessarily having electricity).

In Palamu, it was reported that computer education in government schools was going on in 2004-5, but since then there has been lack of maintenance, updating of budgets, and lack of trained teachers needed to sustain the program. In addition, many schools themselves do not have electricity, even if they are located in a electrified area.

Such was also the case in Government Girls +2 High School, Daltonganj where the principal told of the 15 computers there were in a state of disrepair. They also faced a generator problem, as the budget for it was not updated and that there were no teachers. Because of lack of training, computers were kept in the teacher's house, as was a case reported in Manatu block of Palamu. The teachers at Biru High School, Simdega had been to a district level training on computers, but do not have any electricity in their school as the wires had been stolen. Even though a transformer is there in Bingtopang Middle School, Jhinkpani, the government has stalled the erection of poles needed for the electricity set to be complete.

According to DEO West Singhbhum, computer education is going on in high schools. This includes trained teachers, fee collection from students, and generator arrangements. DWO Sahibganj has said computers are there in residential schools, whereas DEO of the same district has said computers are not there in high schools. DWO Simdega has said computer education is happening in the *Adivasi Janjati Vidyalaya* and *Anusuchit Janjati Madhya*

Class 9-10 Mission School girls, Palamu

These girls live in Daltonganj ranging from 1-7 kms. away from their school. They come from 4-8 person households, with majority of their brothers and sisters studying (75%), having jobs, or other. 5 of their fathers work in or own a shop, with the remaining 4 as ironing clothes, working in railways, a driver, and a teacher. All of their mothers are housewives, with one who also does stitching work. All of them remark that their family situation is not good, but are encouraged by their families to study.

Most of them do not have free time as they are either studying or responsible for household duties. 3 girls mentioned watching TV and painting in their spare time.

They are taught science from class 5 and find physics harder than biology. They have labs in their school, have participated in state level exhibitions, and have seen their seniors take up science. They noted that because of family's economic condition, many had to take commerce instead.

They are taught computer in class 7-9 learning basics such as painting, word, excel, and notepad. They said that most jobs require computer and therefore it is important to know about it. There are cafes but they have never used one. Three of the girls have computers in their homes.

Vidyalaya. Currently, there is no government effort to make a special scheme regarding computer education in school.

Generally, successful computer education is most likely to be found in mission schools and colleges. Problems of maintenance, electricity, trained teachers, and funds are the biggest obstacles for computer education.

Drop outs

Despite the increase in girls' presence in schools, there is also a rapid attrition of them as well. They happen at all levels of school education, and for various social, economic, and structural reasons. One reason is distance to school, which tends to increase after class 5 as there are a less numbers of middle schools. Though the bicycle distribution scheme has alleviated this to a certain extent, girls still face problems such as harassment.

Government data is highly inaccurate with respect to drop outs, as many students' names will continue to be enrolled as certain benefits such as MDM are still be availed. According to DEO West Singhbhum, to address the issue of drop outs, there is a survey done to identify dropouts, who are then given a 9-month bridge course in order to mainstream them back into government schools.

Early/child marriage is one reason that girls around class 8-9 tend to drop out. Some parents do not want to send because of eve teasing or safety issues or do not see the value in educating girls. In Sahibganj, it was reported that in many Muslim families, it is a common thought that class 8-9 education is enough for a girl. However, according to AK Singh, there is higher dropout amongst tribal girls compared to any other community.

Along with these social reasons, the economic condition of the family is a main determinant of whether a student will drop out. For large households having little or no

Dropout/Never studied girls, Mahila Shikshan Kendra, Giridih

These are Adivasi girls who have had some or no schooling in their villages. They are mostly from various blocks and currently enrolled in MSK's 11 month residential bridge course after they and their parents were motivated by Sahyogini didi. They come from 6-10 person households, with 1 girl having no family. All of their parents are farmers, relying on labour to make ends meet. Some of their brothers are working outside, and some of their siblings are studying. At home, they do household work and pick leaves from the jungle. One girl had previously worked for 3 years in Delhi, helping her family to pay for to build their house.

Girls get married around 15-16 years old. In their villages, 6 of them reported that their families don't have enough to eat, having only 1 meal a day. Two girls said that due to parental injury or death their families have had to sell their land/animals and are in debt. Drinking and mental health are problems amongst men in their family.

At MSK, they said that they learn to write their name, names of fruits, counting, multiplication tables, English, Hindi letters, Hindi speaking, Dance, Songs, Poems, Football, Cricket, and Kabbadi.

land, parents require more help and girls are responsible for house and care related work. As it is most girls, regardless of being in a government or mission school, they are responsible for both household and school work.

It may be more a priority for the family that their daughter work, such as in Giridih where families go to pick mica together. Voluntary migration or trafficking of tribal girls to metro cities of the country for domestic work also causes girls to drop out. These would be all cases of child labour.

Further Education

Very few students are able to complete matric and the majority cannot access higher education. The reasons for this are very similar to reasons for drop out as listed above, especially for girls. Most girls that do continue on with education take arts or commerce, and usually there is no aim for these studies.

Science is seen as something they would both not be able to learn nor afford. In fact, very few boys take up science, which illustrates that is it even less accessible for girls. There is less family support to take up science and girls that do take up science often don't have good results.

The case would be different depending on the family's financial situation. It was reported in Chaibasa, that many girls whose families can afford it send them to places like Kota and Vishakhapatnam to study engineering. In Sahibganj, those that continue studies may go to Ranchi, Patna, and Bhagalpur for inter and college. Most tribals girls want to become teachers, as very few would take up medical or engineering. Girls also pick up clerk, supervisor, gram sevika, and nursing jobs.

Class 9, KGBV School girls, Simdega

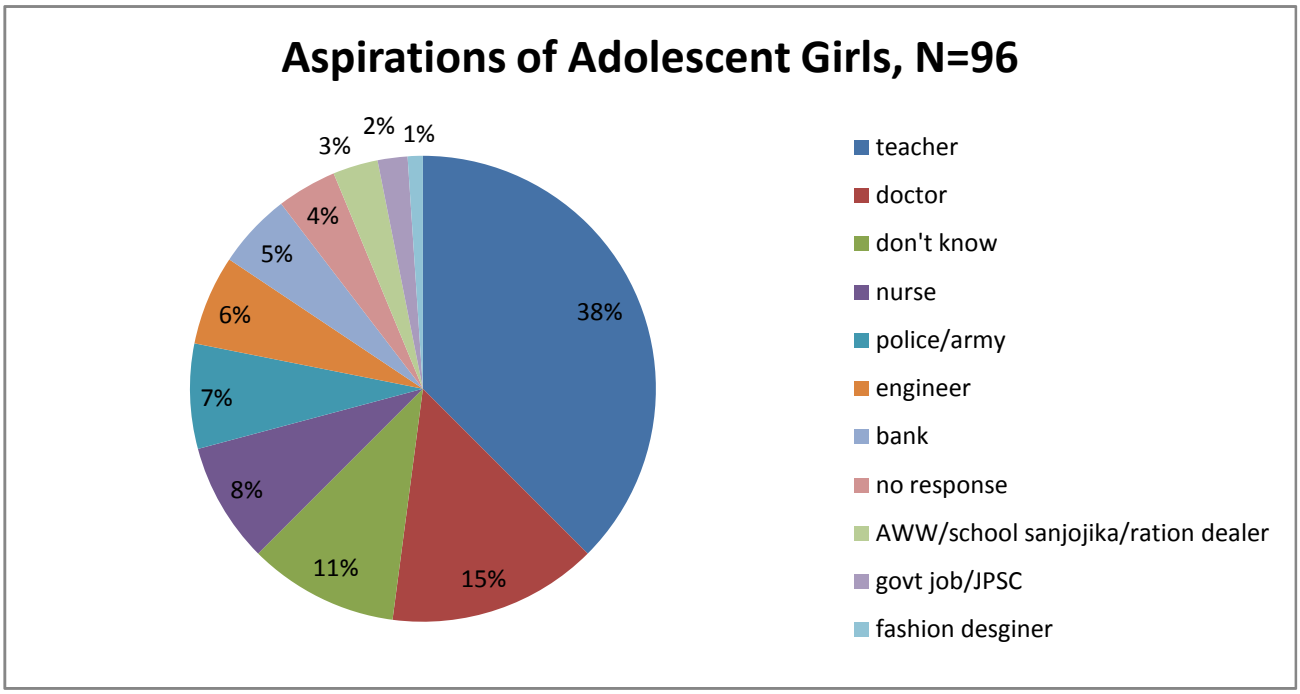
Girls are coming from 4-6 person household. 5 of the girls said their fathers were farmers, 1 works outside of Simdega, and 1 is a manager. 3 girls' didn't remark about their mothers, 2 said their mothers' work at home, 1 said her mother didn't do anything, and 2 are in working as a Sahiya and the KGBV cook. Most of their brothers are studying.

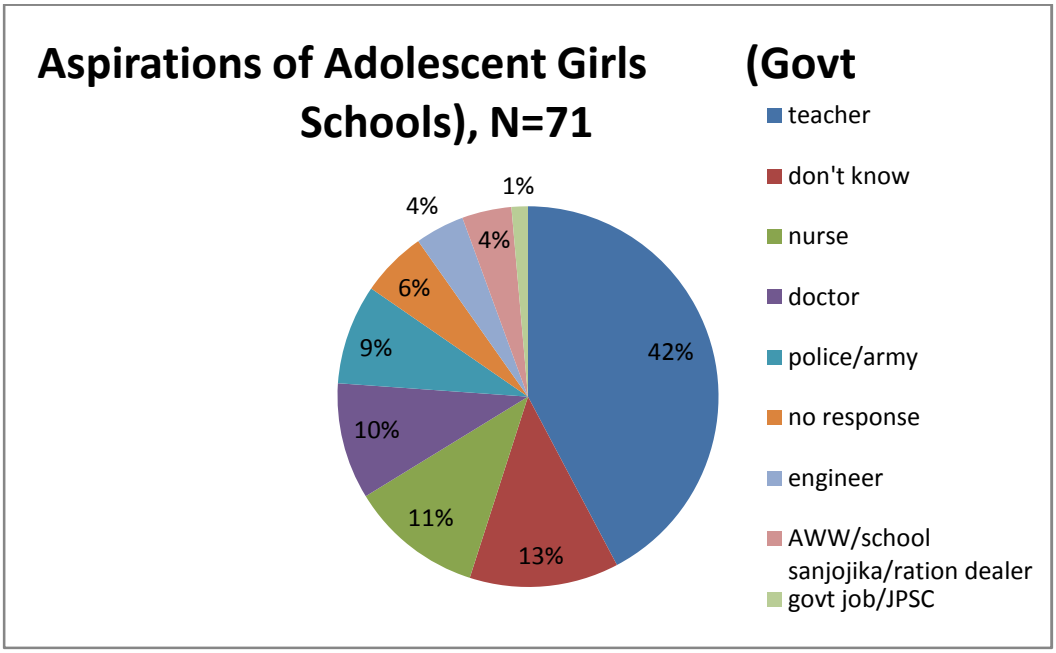
As KGBV is residential, girls only go home during holidays. They do household work including collecting wood from the jungle.

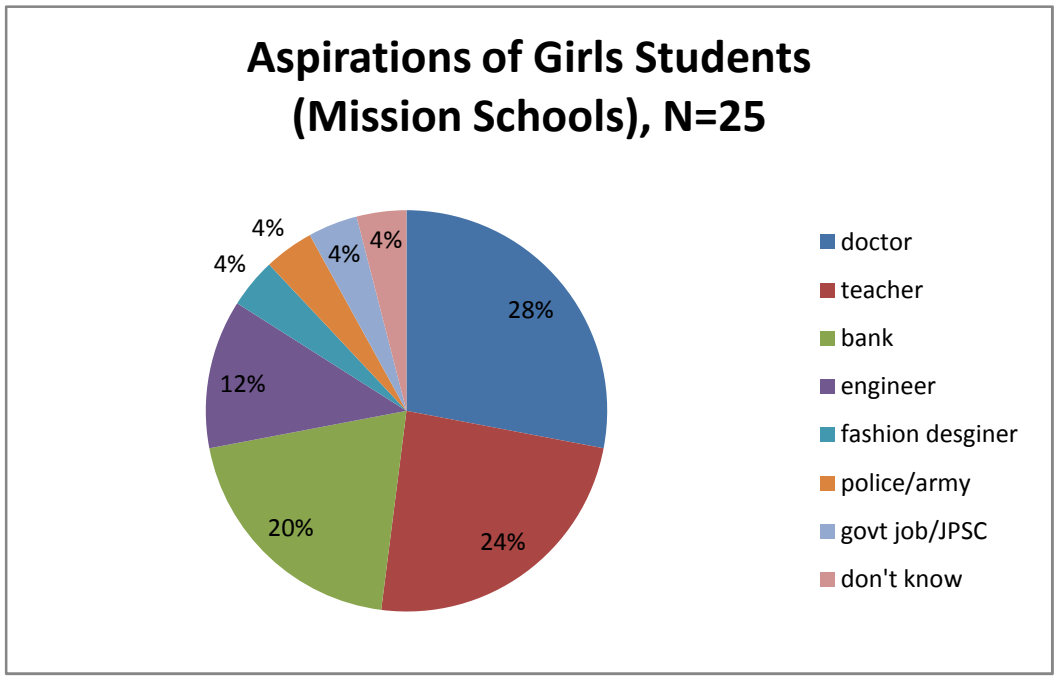
They have been studying math since class 1 and use formulas in solving sums, finding bigger sums more difficult. They have been studying science since 6th class, and currently do not have a science teacher. Previously the English teacher was teaching science, but she has since left. Some of them had participated in another school's science exhibition.

Girls' Future Aspirations

Based on FGD data, becoming a teacher was the most common response for girls' future aspirations, followed by doctor, nurse, and police/army. When asked why they wanted to be a nurse, many girls said they wanted to be in service of others, whereas when asked about police/army, many said to be of service to the nation. Also, many did not know what they wanted to do in the future as well.







Mission school girls' most common aspiration were to be doctors, teachers, working in banks, and engineers, whereas government school girls' mostly wanted to be teachers, and some nurses and doctors. Also, only government school girls mentioned wanting to become Anganwadi Workers, School Sanjojikas, and Ration Shop Dealers, which are all village-based government positions. Again, small sample size of mission school girls does not allow for very accurate comparison, but the above data do show that aspirations may vary by the type of schooling system.

Computer Education

FAT's mainstay for a number of years in Delhi has been the Tech Centre Program, focused on their leadership and participation in technology. When exploring the possibility of extending this program in the of Jharkhand, the status of computer education in schools, NGOs working on computer training, and the need and possibility of opening a tech centre were focused upon. In this section we highlight the findings from these three areas.

Importance of Computer

"Without knowledge of computers, one's education is incomplete." This was a common response when interviewees were asked what the importance of computers for girls was. It is in fact important for everyone, however girls have limited access compared to boys (controlling for class). In

Class 7-10 girls, St. Mary's Ursuline Convent School, Simdega

There are 20-25 computers in our school which are taught from 6th class. We sit in groups of 2-3 per computer where we learn typing, drawing, and programming. The importance of learning computers lies in being able to get information, getting results, learning about different places, chatting with far away people, and writing and publishing online. All of them heard of computer cafés, and 1 girl has gone with her brother.

promoting girls' usage, girls who learn computers will inspire other girls to also do. Furthermore, for those going towards higher education, there are important forms and information related to exams and jobs that are nowadays only found online. Students without computer knowledge have a dependency of computer cafes, which generally tend to be male dominated public spaces.

Many also saw computer skills as a way for girls' empowerment, whether it is awareness of safety issues, learning to file cases, filling up forms, or other work to support women. In this way, girls would challenge the notion of women's dependency on men. An activist from Palamu had said, "Girls generally get left behind, but if they take up technology, it will allow women's issues to be raised. When men learn science and technology, women's issues don't get raised as it may not enter their mind. If women develop their own understanding, then she will pick up her own issues." In this way, it is also important as a step toward gender equality and also a way to spread awareness in society.

There was generally a positive response toward the idea of imparting computer and technology skills to girls, especially as a way to generate livelihood. Though FAT does not directly focus on livelihood, it is an important aspect of computer education to address. A few individuals saw computers as a 'safe' way that girls could earn money without having to 'go outside' and also appropriate means of work as it is not labour-intensive. Though these realities enforce the situation of girls' restricted access outside her home and stereotypes of girls as physically weak, from the perspective of peoples' dire need of livelihood, it would be an important aspect to keep in mind, especially in garnering familial support or even preventing migration/trafficking of girls.

Mothers' group, Palamu

"Our girls will get respect if they are educated. Yes, we would give permission to learn computers as it is job oriented."

Most of the parents said they would decide what their daughters would do in the future.

A point of debate emerged when it was discussed whom computer education is important for in the context of Jharkhand. A girl is best suited to receive computer education once she has received a certain level of education- some basic alphabet recognition, for example. Again, speaking from the perspective of livelihood need, an activist from Sahibganj conveyed that computer education would not benefit rural girls as they are less likely to get jobs, even if she would want to learn, and therefore hardware assembly training would be better suited as an employment option. An activist from West Singhbhum stated that the question of where to place computer education amidst bigger challenges in agriculture and employment will have to be thought about.

Class 7-10 School girls, Gawa, Giridih

They are not taught computers in school. Most of them hadn't heard of computers, and those that did heard it from others who had taken computer classes. They want to learn and say that their parents would allow them. Evening would be the best time for them.

Use of Technology in (Women's) Organisations

FAT began to take shape in its early days through conducting workshops for women, by women, on various kinds of technical training- website building, blog and social media use, video, and hardware trainings, for example. Providing technical training to women in organisations and women's organisations is seen as an important piece in linking technology with women's rights. Therefore, in exploring the feasibility for FAT to work on technical training in Jharkhand, questions of current technological use and needs were assessed from some of the organisations that were interviewed.

Current Usage and Purpose

Most of the technology that all NGOs use consist of mobile phones, computers, cameras, including video, and projectors. In addition, laptops, internet (email, facebook, and blogs), films (documentary), PowerPoint presentations, and video conferencing are there.

Aside from facilitating processes and communication purposes, organisations use most of these technologies for documentation purposes. For example, Mahila Samakhya organizes trainings for its women to learn how to use photo and video to document cases of violence and rape that happen in their respective areas, which would be added to their database.

In addition, technology is used for awareness and education. Omon Mahila Sangathan shows films to make people aware about displacement, or on how malaria is transmitted whereas other organisations such as Vikas Sahayog Kendra support documentary films covering the corruption in government schemes. Abhivyakti Foundation noticed that when showing videos on a laptop to people about how to use alternative agricultural technologies, it was much more readily understood and accepted than when the same message was verbally communicated.

Other technological uses depend on the nature of the organisations, for example, Ekjut, an organisation working on maternal health, conducts research using mobile-based data collection technology, whereas Abhivyakti Foundation develops alternative agricultural technology, and Mahila Samakhya conducts hand-pump repair trainings.

Who uses technology?

There were not many women run organisations amongst our interviewees, with the exception of Omon Mahila Sangathan (West Singhbhum), Saheli Adhyayan Kendra (Sahibganj), Anjor Mahila Sangathan/Adivasi Women's Network (Simdega), and Mahila Samakhya (Giridih, West Singhbhum, and Sahibganj). The general structure of most organisations interviewed consists of board members, office staff and program managers, and field workers.

In comparing the latter two, it was seen that there are more women working as field workers who mostly use mobiles. One interviewee expressed that they cannot provide technological resources such as laptops to all their staffs, whereas another said that there is a lack of educated women.

Women and Girls' Participation in/Access to ICT and S&T

In exploring how FAT's work can be adapted to the context of Jharkhand, the feasibility study also looked at women's access and participation in ICT and S&T. Again, ICT are specific technologies that include mobiles, computers, and internet, whereas S&T refers to specific fields related to STEM. As these areas include a severe gender disparity in general, the situation of women in Jharkhand was of interest.

In this section the following will be discussed; opportunities and careers availed by and available to women, women's use of ICT, and the need to work on increasing women's access and participation in this area.

Opportunities

There are various private and government institutes that impart technical and STEM education. Through the Department of Labour, Employment, and Training, ITIs are in some districts and offer various technical courses such as welding, fitting, and electrical work. Seats and quotas are limited in the ITIs and not many women take them up. SBTE also runs Women's Polytechnics and Women Industrial Schools.

There is no overt sanction against women taking courses in ITIs. However, as seen in the mission of the ITI (Welfare), Ranchi, this field is not open to women, even if there is no gender requirement specified under eligibility criteria.

"These skilled trained boys coming out from these Institutes after completing either one year courses or two year courses mostly go for another one years or two year apprentice courses in industries for their respective trades or faculties. These boys get themselves engaged in industries, public sectors, and government departments and they are mostly known as backbone of the factories since they own and operate all types of machines."

Specifically for women, this department offers Women's ITIs, which primarily offer tailoring courses. During field interviews in Giridih and Simdega, ITIs were reported to be non-existent or non-functioning.

In Chaibasa, the Kolhan Community College offers many technical courses such as automotive repair, computers, and tailoring. In addition to vocational institutes, other short term opportunities are available. In Giridih, the Nagar Parishad runs a computer education schemes as part of creating self-employment for girls and women in urban areas.

For higher education in STEM fields such as engineering and medicine, opportunities within Jharkhand are located in Ranchi and Jamshedpur. In all of our study districts, a lack of colleges and opportunities in STEM fields was reported. In some district headquarter towns, the presence of a women's college has opened up opportunities for girls from various economic backgrounds to access higher education, including those in science, albeit in a limited capacity. There is no women's college in Daltonganj and Sahibganj, whereas it is there in West Singhbhum, Simdega, and Giridih.

Career

As mentioned in the earlier discussion of school education, most girls are unable to access higher education, with even less taking up a STEM field. Even if a girl has taken science in matric, it does not get linked to her career. However, as more and more girls are school, there are also more women attending ITIs and taking up STEM fields such as engineering.

Here, the question arises of which group of women are participating in this field. Despite their low participation, the women in these fields are from those groups having more resources and privileges, specifically those living in cities, those from the upper castes, such as Rajputs, Brahmins, and upper class tribals. Thus, whereas the gender divide in STEM amongst these communities has reduced significantly, the participation of tribals, Dalits, OBCs, and Muslims from lower and rural class backgrounds in STEM fields is very weak. Again, as previously discussed, women posses few future options aside from marriage.

Use of ICT

As noted above, there is very little participation of women in technical and STEM fields, however the usage of certain technologies amongst women as definitely increased. In the pasts, local language radio programmes common, whereas now mobiles are popular including with women and girls. Although not all women will use all mobile features such as sending text messages, most school girls are well accustomed to them. Carrying and using a mobile is a marker of modernity and style for many young women, however repair work is still the domain of men. Interest in computers has also risen amongst school going girls, as seen with the presence of many private computer institutes and cafés.

An interesting point was raised in Sahibganj, whereby the use of technology for women's issue came into question. Issues in Sahibganj don't usually get raised, as it a small town in a remote part of the whole state. For example, when a case of gang rape occurred there, women did not use technology, for instance, social media, to raise protest against it. Women help-line numbers made available to the public are not being used. This lack of awareness and use amongst women can be applied to many contexts where access and participation are low.

Need to Increase Women's Access and Participation

There is indeed a need to work on increasing women's participation in technology as pointed out by everyone interviewed during the course of the study. However, there are a few points to put forth with respect to questions of women's needs. Several organisations expressed that linking traditional technology with modern ones, for example in agriculture, would be more of a need for women, or even working with women on a technology is related to her daily life. Although FAT mainly focuses on adolescent girls, these were important points in understand what was deemed to be women's technological needs.

There is a need for this as it could be both a source empowerment and employment. The idea that technology is something difficult and therefore not suitable for women is a false image, and girls should be supported so that their interests develop. Also, women cannot pay for this, and there are many communities not connected with technology. There is a

need for job opportunities, training programs, and motivation, and some feel that linking women with technology will cause faster development in the region.

Potential Challenges and Suggestions for FAT's Programs in Jharkhand

In assessing feasibility of starting FAT's three main programs, Tech Centre Program, School Intervention Program, and Technical Training for Women, in Jharkhand, it was important to get a sense of what challenges would be there. The points given below emerged during interviews with various stakeholders and also at the regional consultations. Many of the issues raised are already a part of FAT's ideas and practice, however some provided new insights, all of which are very relevant for a feasibility discussion.

Tech Centre Program

- *Mobilising Girls*:

  For the reasons mentioned in the discussion related to why girls drop out of school, it is seen that many restrictions are placed on girls' movement, but more so is that fact that she is needed at home for work purposes. Also, girls tend to be commented upon when they go outside and mobilising girls to attend the centre would be a challenge as they are used to staying at home.

- *Gaining Parental Support*:

  There is the issue of parental support which would vary with each family. Girls who are currently studying are more likely to get their parent's permission, however, the traditional mentality is widespread and therefore even school girls' parents may need convincing of why computers are important for her. It is seen as a foreign influence, but on the other hand many families see benefit in their daughters and daughter-in-laws getting training and know the importance of having technical skills. Financial problems may prevent parents from allowing their girls to attend, for they may even support her, but it is likely that they would give priority to their household duties.

- *Employability*:

  Another challenge is again the issue of employability. When the girls use their skills to get a job, she would need a qualification or certificate. Employing them after they finish the course would be difficult.

- *Electricity & Internet*:

  Electricity and internet are two prerequisites for the running of a tech centre. During the course of the feasibility study, interviews were conducted at village, block, and district levels. Obviously more urban areas have better electricity supply, and according the interviews it was seen that electrified villages get 3-5 hours per day, block headquarter towns get 8-16 hours per day, and district headquarter

towns got 15-20 hours per day. It is often erratic and dependent on season, with worst supply in summer months. Villages also face the common problem of electricity theft.

Any tech centre would require a back-up system consisting of an inverter, stabiliser, batteries, and a generator. Solar power had also been suggested as an alternative power source to run computers, for which solar batteries and panels would be required. Panels require less maintenance, and batteries need to be changed every 2 years. With solar power, fuel costs of 1 liter per hour of running a generator would be saved.

3G Internet has more of a presence at the district headquarter towns. During the feasibility study, 3G Airtel was functioning well in Daltonganj, Giridih, and Simdega, with slower speed in Chaibasa. An internet café was used in Sahibganj which had decent speed as well. Internet is not steady as a general rule, and coverage will disappear from time to time. BSNL is a perfect example of this, as many interviewees reported its lack of reliability for broadband connection. In addition to Airtel, there are Reliance, Tata Indicom, and Uninor companies providing service.

- *Location & Logistics*:

  With regard to location of the tech centre, many had suggested working at the block level or even targeting Panchayat offices, where there is the possibility of a room being made available with the support of Panchayat leaders. However, there may be bureaucratic and logistical problems as it is a government and shared space. Another space that could be explored is Adivasi girls' hostels, especially as a place to run courses/workshops such as mobile repairing.

  Other issues related to location include distance and transportation for girls, even though many girls and women commute freely by cycles. In addition, security of the computers was raised, as an organisation working on computer education in Giridih district, found in their field area that 2 of their 7 computers had been stolen.

  FAT can make computers, laptops, and solar power available. The girls should not have to travel distance of more than 2-3 kilometers. There should be separate lab and theory rooms, the spaces should be well lit, and having toilets. There should be two trainers, who are local, have strong facilitation skills, and preferably women. In addition, there should be a caretaker. There was debate regarding cost of attending the tech centre. Some thought keeping a small nominal fee like 100 Rs/month to ensure that girls are committed, versus taking a free service for granted. Others were concerned that some may not be able to afford this.

  Ideally, FAT should work with what is available, not opening a separate centre. FAT can also support NGOs who already to do computer programs along with Pragya Kendras at the Panchayat level. Another suggestion is to work with a group of

organisations and try a pilot in each of their field areas or explore the option in KGBVs or middle schools. Another suggestion was to have a mobile computer unit.

- *Timings*:

  Timings are another concern which may be better decided in the future. Agricultural peak months are June- August, November, and December, and timings would be more flexible in the summer months. Timings would also be determined by which group of girls are being focused upon. For example, school going girls may not be able to come daily and their school timings change according to season, whereas girls working at home or elsewhere, timings would depend on their work schedule. Multi Art Association, an organisation working on media and computer education in Palamu, runs classes in 2 batches, thereby allowing different groups of girls to attend.

- *Curriculum*:

  Every girl should get enough time on the computer, with about 60-90 minute classes. The curriculum should last from 6 months to 1 year, during which time she would understand her future. The centre should impart livelihood skills to include are typing, videography, and photography. Creative writing, film screenings, and social media should also be there. Audio recording/editing and community radio can be explored as videography may not be available everywhere. Mobile phones can be used to make short films and shown in a film festival. The same curriculum used in Delhi can be used here because gender issues are similar everywhere. ICT material should be in Hindi and should be visual. Other needs like mobile repair training are there and can be included. Nothing should be forced and therefore girls' real interests and what she wants to learn must be understood.

- *Beneficiaries*:

  As mentioned earlier, there was a question over who would be best suited to attend a tech centre. It was said that there may be problems in learning, especially those from rural backgrounds. There was debate that village girls should be given priority over city girls as there is less support for the former, whereas the latter, having more access to education, may receive more benefit.

  Many held the opinion that girls should have some level of education as they would be easier to teach. Matric or inter pass outs who are not working, drop outs who are not working, college students, and middle school students including married students were all suggested. The focus should be on Tribal, Muslim, and Dalit girls.

  Economically weak and disempowered girls should be given priority, however, they should have food security in their homes. Also mentioned were former trafficked girls and women abandoned by their husbands. This question of which beneficiaries

cannot be binding, however, as specific needs would have to be assessed and prioritized. As it is, there is a very low probability that girls would be able to learn computers, but there is a lot of scope and potential for work here.

- *Suggested Costs:*
    - Trained Teacher = 3,000 - 10,000 Rs/month (will vary)
    - Generator= 75,000 Rs + 45,000 Rs/year
    - 1000V Inverter (to run 3-4 computers) = 7-8,000 Rs.
    - 6 Batteries = 15,000 Rs.
    - Solar Panel = 15-18,000 Rs.
    - Solar Battery = 12,000 Rs.

School Intervention Program

- *Interaction with Government:*

  As per Supreme Court guidelines, any transaction inside the classroom that is not a part of the school curriculum requires prior permission. DEO West Singhbhum welcomed NGO collaboration in government and informed that first a proposal be submitted, followed by which a meeting would determine confirmation for the project. Many NGOs have good relationships with government officials who are interested in doing work, as was described in Giridih.

  Others expressed that it may not be so easy to get permission, and therefore may be better to do parallel work rather than work in schools where there may be too many challenges such as garnering the interest and cooperation of the teachers. Therefore trainers will be needed for implementation. Premises or a room may be made available, and as mentioned before there may not be electricity in the schools.

  NGOs can work in collaboration with the government/DC to advocate for the issue, especially in making sure that class 8 girls reach matric. A pilot program can be started, as well as preparing a model program to present to the department. They can also help to make computers available.

- *Teachers*:

  In addressing improvements to be made to science and maths education for girls, teacher recruitment and retention should be made stronger. In both West Singhbhum and Palamu, an interesting method was adopted to combat the teacher gaps whereby the educated youth of the village took turns in volunteering to teach in their school. There should also be more female teachers, especially in girls' residential schools. In addition equipments and resource people along with the engagement of SMCs, parents, teachers, and students would be needed.

- *Teaching & Curriculum:*

  Interesting teaching methodologies such as the use of films, practicals and demonstrations, participation in science exhibitions and competitions, visits to science parks, and connections to real life were all mentioned. In addition, primary education needs to be strengthened.

  In working with adolescent girls, the focus should be to increase their curiosity and interest. Providing girls with good mentoring and opportunities will be important to her success. Examples and stories of women who've achieved well in science should be shared with students as a way to inspire and motivate. Workshops can be started with middle school students who are proficient in the basics. Trainers should be either local, from the district, or the neighboring district.

Technical Training for Women

- *Technical Needs of NGOs:*

  Technological and technical needs depend on the nature of the organisations. Trainings on statistical software and case study methods were responses for those organisations focusing on research, whereas others were interested in learning camera and video for reporting, documentation, and communication purposes. Laptop training, building websites, and mobile and camera repairing were also mentioned as needs for organisations and women.

- *Locally Relevant Technology:*

  Other suggestions were to promote agricultural technology connected to livelihood such as dairy production, or some technology that is related to work women are already doing. For example, hand pump repair training would be very useful for Jal Sahiyas (women selected from the community and paid an honorarium to work on water and sanitation). Promoting indigenous knowledge and technology was also a suggestion, as mainstream technology in Jharkhand tends to destroy the environment and peoples' livelihood.

Annexures

Annexure 1: Interviewees and FGD Participants

The following list of stakeholders includes NGOs, Government Agencies, Local Leaders, School Officials, Government Officials, Social Activists/Workers, Women's Groups, Adolescent Girls, Parents, and Teachers with whom interviews or FGDs were done in the 5 study districts.

Non-Government Organisations:

1. Bidhan Baha Lagu, Anjor Mahila Sangathan/Adivasi Women's Network, Simdega
2. Fr. Anuranjan Purty, AROUSE, Simdega
3. Nirmala Nayar, Rajkumar, Amit Kumar of Ekjut, Chakradharpur, West Singhbhum
4. Ajitha George of Omon Mahila Sangathan. Health, Noamundi, West Singhbhum
5. Rajesh Pati of Asra, Chaibasa, West Singhbhum
6. Veersingh of BIRSA, Chaibasa, West Singhbhum
7. Baidyanath, Secretary; Jaago Foundation, Giridih
8. Amit Kumar Pandey; Ritesh, Founder Member; Rupam Roy, Founder Member; Abhivyakti Foundation, Giridih
9. Mithilesh Kumar, Secretary; Multi Art Association, Daltonganj, Palamu
10. Dibya Prakash, District Coordinator; Alternative for India Development, Lesliganj, Palamu
11. Swarnlata Ranjan, Programme Manager; Gram Swaraj Kalyan Vikas Mission, Daltonganj, Palamu
12. Jawahar Mehta, Founder Member; Vikas Sahayog Kendra, Daltonganj, Palamu
13. Subhash Chandra, Founder & Director; Human Resource and Enviornment Development Society, Sahibganj
14. Abduss Subhan, Secretary; Abhiyaan, Sahibganj
15. Priyasheela Besra, Co-Founder: Saheli Adhyayan Kendra, Sahibganj
16. Dr. Ram Raj Sharma, Secretary; SEWA Sansthan, Rajmahal, Sahibganj
17. Sujit Kumar Nayak, Programme Coordinator; EFICOR, Sahibganj
18. AK Singh, Director, Life Education and Development Support, Ranchi

Government Agencies/Organisations:

19. Anita Kerketta, District Program Manager, Jharkhand State Livelihood Promotion Society, Simdega
20. Jeevani Pushpa of Mahila Samakhya, Chaibasa, West Singhbhum
21. Prabha Thakur, District Programme Coordinator; Mahila Samakhya, Giridih
22. Renoma Lakra, State Resource Person; Nilesh Kumar Jain, Associate Programme Coordinator; Jharkhand Mahila Samakhya State Resource Centre, Daltonganj, Palamu
23. Bubli Kumari Sinha, District Programme Coordinator; Deeptibala Kumari, District Resource Person; Jharkhand Mahila Samakhya, Sahibganj

Local Leaders:

24. Bela Jairai, Ward Person, Chaibasa, West Singhbhum
25. Sudhir Chandra Biruly, Pradhan, Jhinkpani, West Singhbhum
26. Anita Devi, Mukhiya; Bijalibathaan village, Bengabad, Giridih
27. Walton Rodroy, Mukhiya, Navadih Gram Panchayat, Chainpur, Palamu
28. Reeta Rani Hembrom, Jila Parishad; Borio, Sahibganj

School Officials:

29. Shyam Nandan Shashi, Headmaster, Rajkiyakrat Ucch Vidyalaya, Biru, Simdega
30. Biranchi Kbankit, School Management Committee Head, Bingtopang Middle School, Jhinkpani, West Singhbhum
31. Meena Kumari Roy, Principal, Rajkiya Balika +2 Ucch Vidyalaya, Daltonganj, Palamu

Government Officials:

32. Rameshwar Chowdhary, District Welfare Officer, Simdega
33. Kartik Kumar Prabhat, Subdivisional Officer, Simdega
34. Bhalerian Tirkey, District Education Officer, Chaibasa, West Singhbhum
35. Isidor Soren, District Welfare Officer, Chaibasa, West Singhbhum
36. KK Sharma, District Welfare Officer, Giridih
37. Bijendra Baski, Deputy Director Welfare, Daltonganj, Palamu
38. Prabhat Kumar Bordia, District Welfare Officer, Daltonganj, Palamu
39. Ratan Kumar Mahawar, District Education Officer, Daltonganj, Palamu
40. Lalita Minj, District Welfare Officer, Sahibganj
41. Dr. Aruna Nath, District Education Officer, Sahibganj

Individuals:

42. Baijnath Prasad Sharma, Social Worker; Bijalibathaan village, Bengabad, Giridih
43. Vinita Asar, Journalist, Daltonganj, Palamu
44. Sister Lawerence, Social Worker, Daltonganj, Palamu
45. Father Tom Kavala, Co-Founder; Sona Santhal Samaj Samiti, Kodma village, Sahibganj
46. Manju Lata Hembrom, National Commission for Women; Sahibganj

Women's Groups:

47. 9 women of Juhi SHG; Mahila Samakhya, Teesri village, Teesri, Giridih
48. 10 Women of Champaba Mahila Samakhya Samiti, Purulia village, Taljhari, Sahibganj

Adolescent Girls:

49. 8 Inter college girls, St. John's Intermediate School, Simdega
50. 8 School girls – 9th class, KGBV, Simdega

51. 8 School girls – 2 students each from 7th to 10th class, St. Mary's Ursuline School, Simdega
52. 8 Former drop out girls, Rajanka village, Jhinkpani, West Singhbhum
53. 13 School going girls from class 7-9, Bingtopang Middle School, Jhinkpani
54. 8 School going girls from class 6-10, Birhabad village, Jamua, Giridih
55. 14 School going girls from class 7-9, Chotki Karadiya village, Bengabad, Giridih
56. 10 School going girls from class 7-10, Chahudiya village, Gawa, Giridih
57. 10 Drop out girls, Mahila Shikshan Kendra, Giridih
58. 9 School going girls from class 9-10, BCC Mission School, Daltonganj, Palamu
59. 8 School going girls from class 7-8, BCC Mission School, Daltonganj, Palamu
60. 8 School girls of class 6, Dulumpur village, Baraharwa, Sahibganj
61. 6 School girls of class 8-9, Rajmahal, Sahibganj

Parents:

62. 6 Mothers, Adivasi Women's Network, Simdega
63. 7 Mothers, Chaibasa, West Singhbhum
64. 8 Mothers/Fathers, Bingtopang village, Jhinkpani, West Singhbhum
65. 7 mothers, Bijalibathaan village, Bengabad, West Singhbhum
66. 9 Mothers, Lesliganj, Palamu

Teachers:

67. 4 teachers of Rajkiyakrat Ucch Vidyalaya, Biru, Simdega
68. 8 Teachers of Fr. Anthony Murmu Memorial School, Sabaiyya village, Sahibganj

Annexure 2: References Used in Various Sections

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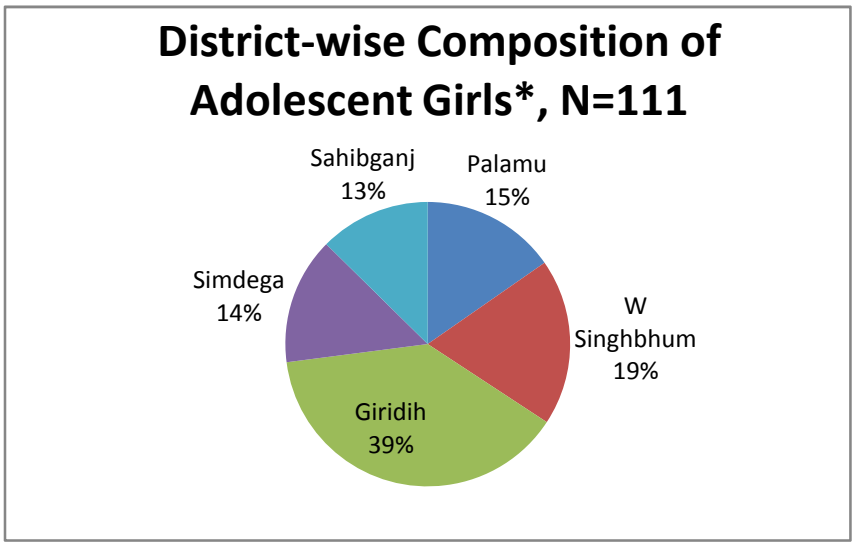
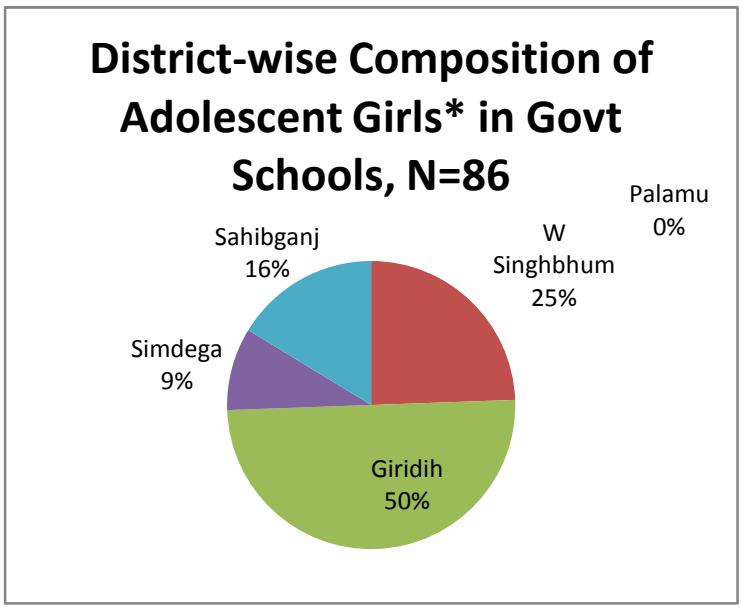
Annexure 3. District-wise Composition of FGD Data

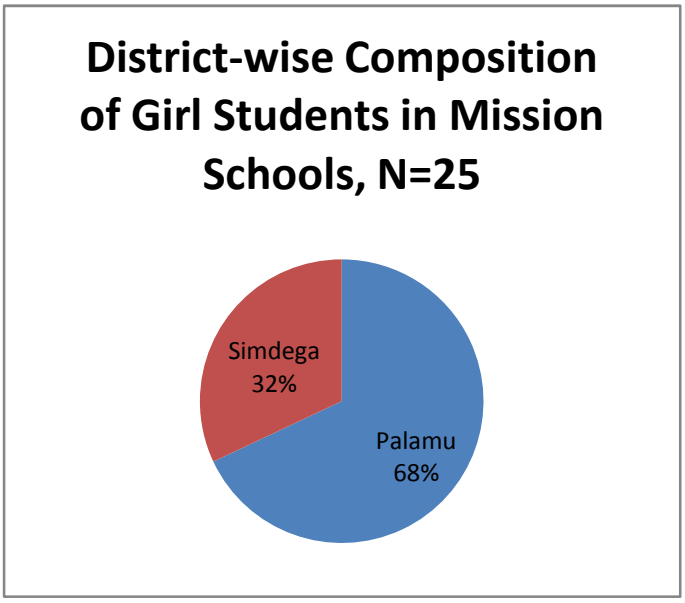
The following figures reflect the district-wise composition of the adolescent girls within whom FGDs were conducted. In addition, separate district-wise composition is there for those in government and mission schools. Also, 10 drop out/never studied girls were

included in government school girls as they were in a government bridge course preparing them for government school.

There is a significant over-representation of Giridih in overall girls and government school girls, and an absence of girls from Sahibganj, West Singhbhum, Simdega, and Giridih districts in mission schools. In addition, the sample size is much larger for government school girls (N=86) over mission school girls (N=25). However, since this is a qualitative study with a focus on girls in government schools it is a useful analysis nonetheless.







* Includes 10 drop-out/never studied girls interviewed in Giridih as they are currently enrolled in a Govt bridge course

Annexure 4. FGD and Interview Schedules

The following interview and FGD schedules were used during the course of the study. The broad headings under which they were organised are Tech Centre, School, Women's Groups, and Women in S&T in Jharkhand based on the pre-defined thematic areas corresponding to FAT's programs. Stakeholders were asked only regarding themes relevant to their experience.

Separate individual interview schedules were there for NGO/Government Agency heads or staff, Government Officials, Local Leaders, Social Activists and Reporters, School Officials, whereas FGD schedules were there for Teachers, Drop Out Girls, School Going Girls, Women's Groups, Parents, and College Going Girls.

Individual Interview Schedules:

NGOs/Government Agencies

A. General
    1. What issues does your NGO cover? What are your programs? Where do you work- geographic area covered?
    2. What is the background of women and girls? (economic status, community, age, geographic areas, issues/challenges, livelihood/employment, migration)

B. Tech Centre
    1. Does/Did your NGO do any science & technology related programs?
        i. If yes, please describe in detail.
        ii. What aspect of that programme was women focused?
    2. What is the importance of girls' computer education?
    3. What challenges would you foresee in starting a computer course for girls in this area?
        i. If girls were interested would parents allow girls to attend?
            i. If yes, what would be the appropriate timings so they could attend classes comfortably?
            ii. If not, why?
        ii. What is the electricity supply in this area?
        iii. What is the internet speed in this area?
        iv. Which group of girls would receive the most benefit from a computer center? (Drop out, trafficked, early marriage)
            i. Where there is more need and have no other support?

C. School
    1. What is the status of education in government schools?
    2. What are the challenges one faces when working with schools?
        i. What kind of support can one get from schools?
    3. What is the status of maths and science education?
        i. Are practicals done?
        ii. Are there science labs?

4. Are they taught about computers?
    i. Are their computers in the schools?
5. Are girls interested in Science and Technology?
6. How can science education for girls be improved in schools?
7. What is the situation of girls' school education?
    i. What are the main challenges that school girls have to face? (Distance, marriage, migration, child labour, household responsibilities)
8. In which class do most girls drop out of school?
    i. And what is the reason for this?
9. What is the education level of girls in this area?
    i. Percentage of girls matric pass
10. Do girls take up Science, Maths, or Computer in higher education (inter/college)?
    i. If they take up, then what do they do in the future?

D. Women's Groups
1. What kind of technology do you use in your work? (mobile, computer, projector, camera, blog, website, etc.)
2. What benefit do you get from its use?
3. Do you use internet or mobile to link with other like-minded regional/national organisations?
    i. Do you participate in online campaigns?
4. Who in the organization uses this technology?
    ii. Do men and women use technology equally?
    iii. How many staff here? How many women staff?
5. Have you ever received any kind of technical training for your work?
6. Do you feel the need for any kind of technical training?
    iv. If yes, what kind of training?
7. If a training was organised in your nearby town, would you be able attend? In Ranchi?
    v. If the training was 2-3 days residential training, would you be able to attend?
    vi. If not, why not?

E. Women in S&T in Jharkhand
1. Do women participate in S&T in Jharkhand? Why or why not?
    i. Which communities of women participate in S&T?
    ii. What changes have there been in last 10 years?
2. Is there a need to work on women and tech in Jharkhand?
    i. If yes, why do you think so?
3. What government schemes are there that support women and S&T?
    i. Are they intended to support any particular community?
    ii. What is the implementation status of these schemes?
    iii. What have been the problems?
4. What opportunities are available for women to pursue S&T?
    i. Are there enough institutes for women to pursue S&T?
    ii. Who are role models of women in S&T in Jharkhand?

iii. What else can be done to enhance the participation of women in S&T?

GOVERNMENT OFFICIALS

A. General
   1. What issues do girls in Jharkhand/district face?

B. Tech Centre
   1. What is the situation regarding IT centers in Jharkhand?
   2. What are the government schemes regarding computer education?
      i. Are girls able to avail this?
   3. What are the government schemes regarding adolescent girls' empowerment?
      i. Are they intended to support any particular community?
      ii. What is the status of these schemes?
   4. What are existing schemes related to child marriage and drop outs?
      i. Are they intended to support any particular community?
      ii. What is the status of these schemes?

C. School (6^{th} to 9^{th})
   1. As per provisions in RTE for 6^{th} – 8^{th} class, are there separate teachers designated for maths/science, social studies, and languages? Are there sufficient number of science and maths teachers? (1 teacher: 35 students)
      i. What kind of teachers' trainings have been organised by the government?
      ii. Have they been specifically on science and tech?
      iii. Do they happen at district level, state level, or both?
      iv. How many have happened in the last year (2013-14)?
   2. What are the government schemes supporting science and tech education for girls?
      i. Are they intended to support any particular community?
      ii. What is the status of these schemes?
   3. Are there any scholarship schemes to promote girls' science education in schools?
      i. Are they intended to support any particular community?
      ii. What about at high school and intermediate level?
      iii. What is the status of these schemes?
   4. What is the availability of computers in government schools?
      i. If not available, then why not?
   5. What infrastructure is available in schools to support science education?

D. Women in S&T in Jharkhand
   1. What impact does technology have on women, society, and Jharkhand?
   2. Do women participate in S&T in Jharkhand? Why or why not?
      i. Which communities of women participate in S&T?
   3. Is there a need to work on women and tech in Jharkhand?
      i. If yes, why do you think so?
   4. Are there any government schemes that support women and S&T?

i. Are they intended to support any particular community?
ii. What is the implementation status of these schemes?
iii. Are there any problems?

5. What opportunities are available for women to pursue S&T?
   i. Are there enough institutes for women to pursue S&T?
   ii. Who are role models of women in S&T in Jharkhand?

LOCAL LEADERS

A. General
   1. What do people do for work here?
      i. Do they have to migrate for work? If so, where? For how long?
      ii. Does this affect students' studies?
   2. What problems are present in this area?

B. School
   1. How many schools having 6^{th} – 9^{th} are in the nearby area?
   2. What is the status of education in government schools?
   3. What is the status of maths and science education?
      i. Are practicals done?
      ii. Are there science labs?
   4. Are they taught about computers?
      i. Are their computers in schools?
   5. Are girls interested in Science and Technology?
   6. How can science education for girls be improved in schools?

C. On Girls
   1. What is the situation of girls' school education?
   2. What are the main challenges that school girls have to face? (Distance, marriage, migration, child labour, household responsibilities)
   3. In which class do most girls drop out of school?
      i. What is the reason for this?
   4. What is the education level of girls in this area?
      i. Percentage of girls matric pass?
   5. Do girls take up Science, Maths, or Computer in higher education (inter/college)?
      i. If they take up, then what do they do in the future?

D. Tech Centre
   1. What is the importance of girls' computer education?
   2. What challenges would be there in starting a computer course for girls in this area?
      i. If girls were interested would parents allow?
      ii. If yes, what would be the appropriate timings so they could attend classes comfortably?
      iii. If not, why?
   3. What is the electricity supply in this area?

4. What is the internet speed in this area?
5. Which group of girls would receive the most benefit from a computer center?

E. For Women Leaders Only
   1. What kind of technology do you use in your work? (mobile, computer, presentation, camera, blog, website, etc.)
   2. What benefit do you get from its use?
   3. Do you feel the need of any of technical training?
   4. If a training was organised in your nearby town, would you be able attend? In Ranchi?
      i. If the training was 2-3 days residential training, would you be able to attend?
      ii. If no, why not?

F. Women in S&T in Jharkhand
   1. Do women participate in S&T in Jharkhand? Why or why not?
      i. Which communities of women participate in S&T?
   2. Is there a need to work on women and tech in Jharkhand?
      i. If yes, why do you think so?
   3. What opportunities are available for women to pursue S&T?
      i. Are there enough institutes for women to pursue S&T?
      ii. Who are role models of women in S&T in Jharkhand?
      iii. What else can be done to enhance the participation of women in S&T?

SOCIAL ACTIVIST/REPORTERS

A. General
   1. How did you become an activist in Jharkhand? (in short)
   2. What issues do you work on?
   3. What are the important issues for women and girls in district /Jharkhand?
      i. Which communities are most affected and in which areas?
   4. What work has been done with respect to girls and women?
      i. What has been the role of the government and other agencies in mitigating these problems?
      ii. What are the gaps in these intervention measures?

B. School
   1. What is the status of education in government schools?
   2. What are the challenges one faces when working with schools?
      i. What kind of support can one get from schools?
   3. What is the status of math and science education?
   4. Are practicals done? Are there science labs?
   5. Are they taught about computers? Are their computers in schools?
   6. Are girls interested in Science and Technology?
   7. What is the status of girls' school education?
      i. What challenges do girls' have to face? (distance, marriage, child labour, household responsibilities, etc.)

8. In which class do most girls drop out? And what is the reason for this?
9. What is the level of education of girls in this area? What is the percentage of matrics?
10. Do girls take up Science, Maths, or Computer in higher education (inter/college)?
    i. If they take up, then what do they do in the future?
11. What do you think can be improved in schools?

C. Tech Centre
    1. What is the importance of girls' computer education?
    2. What challenges would be there in starting a computer course for girls in this area?
        a. If girls were interested would parents allow?
    3. What is the electricity supply in this area?
        a. What is the internet speed in this area?
        b. Which group of girls would receive the most benefit from a computer center?

D. Women's Groups
    1. How can technology be used to further women's rights?
    2. Has there been any work done with respect to women and technology?
        a. If yes, please describe.
        b. If no, what do you think can be done?
    3. What kind of technology do you use in your work (mobile, computer, email, internet, projectors)?
        a. How do you use it?
        b. What benefit do you get from it?
        c. Do you use it yourself or with someone's help?
    4. How many women that you work with?
        a. Do they use technology?
        b. Do they use it on their own or with someone's help?
    5. Are you linked with other activists, organisations, and campaigns through mobiles or internet?
        a. Can you give an example?

E. Women in S&T in Jharkhand
    5. What impact does technology have on women, society, and Jharkhand?
    6. Do women participate in S&T in Jharkhand? Why or why not?
        a. Which communities of women participate in S&T?
    7. Is there a need to work on women and tech in Jharkhand?
        a. If yes, why do you think so?
    8. Are there any government schemes that support women and S&T?
        a. Are they intended to support any particular community?
        b. What is the implementation status of these schemes?
        c. Are there any problems?
    9. What opportunities are available for women to pursue S&T?

a. Are there enough institutes for women to pursue S&T?
b. Who are role models of women in S&T in Jharkhand?
c. What else can be done to enhance the participation of women in S&T?

SCHOOL OFFICIALS

A. General
   1. Which classes are in the school? How many students in your school? What is the ratio of girls to boys?
      a. If there are less girls, why?
      b. How far away do students come from?
   2. What is their background?
      a. Economic, social, which community
   3. What's the admission procedure?
   4. How many teachers are here? Full-time/para-teachers?

B. Subjects
   1. What subjects are taught here?
      a. Do you have science, math, computer subjects?
      b. Do students do practicals? Are their science labs?
   2. What is girls' interest level in science? In maths?
      a. If interest is low, then what are the reasons behind it?
      b. What methods do you use to increase their interest?
   3. How are girls' results in science and maths?
   4. What is the difference in result between girls and boys?
   5. Does your school participate in regional or national olympiads, competitions, or exhibitions related to maths or science?
   6. How strong are the students' English?

C. Computers
   1. Are computers taught in your school? What is taught?
   2. Do you have computers?
   3. What is the importance of learning computers?
   4. Do you feel there is a need for computer education in this area?
   5. What do people think about computer education in this area?

D. Future
   1. Where do students go for higher education?
   2. Do girls take up Science and Maths in higher classes?
      a. If they take up, then what are their results?
      b. If they don't, then why not?
   3. What can be done to inspire them?
   4. What do other children do (in this area)?
   5. If there is drop out, why do girls drop out?

E. Other General

1. What are the fees for students?
2. What are the facilities in your school?
3. How many schools having 6^{th} – 9^{th} are in the nearby area?
4. Are there government schemes promoting/supporting science and math education at the school level?
5. How can STEM education be promoted for girls Jharkhand/district?

FGD Schedules

TEACHERS

A. Students
   1. How many students in your school? What is the ratio of girls to boys?
      i. If there are less girls, why?
   2. How far away do they come from?
   3. What is their background?
      i. Economic, social, which community
   4. Which language to do you teach science and maths subjects?
   5. What is girls' interest level in science? In maths? (ask this question to relevant subject teacher)
      i. If interest is low, then what are the reasons behind it?
      ii. What methods do you use to increase their interest?
   6. How are girls' result in science and maths?
      i. What is the difference in result between girls and boys?
   7. Do you do practicals? Are their labs?
   8. How strong are the students' English?

B. Computers
   1. Are computers taught in your school? What is taught?
   2. What is the importance of learning computers?
   3. Do you feel there is a need for computer education in this area?
   4. What do people think about computer education in this area?

C. Teaching (any subject)
   1. What problems do you face with teaching students coming from villages?
   2. What ways do you use to help students understand something difficult?
   3. How do you ensure equality between girls and boys in the classroom?

D. How can science, maths, computer education be promoted for girls in Jharkhand?

DROP OUT GIRLS

A. Family Background
   1. Who is in your family?

2. What do your parents do?
3. How many brothers do you have? What do they do?
4. What work do you do in your home?
    i. What do you do in your free time/for fun?

B. Academic Background
    1. If you have attended school, until class have you studied?
    2. Why did you leave school?
    3. What subjects did you study? Which ones did you like?
    4. How strong is your English?
    5. How much support do you receive from your family regarding studies?

C. Computer
    1. Have you ever heard of/seen a computer?
        i. If yes, then where? What does a computer do?
        ii. If not, would you want to learn?
        iii. Have you heard of the Internet?
    2. What is the benefit of learning computers?
    3. If there was a computer center in your area, would you be interested in coming?
        i. What would you want to learn?
        ii. Would you be able to come? If not, then why?

D. Future
    1. At what age do girls get married here?
    2. What are your problems here?
    3. Do you want to study in the future?

SCHOOL GOING GIRLS

A. Family Background
    1. Who is in your family?
    2. What do your parents do?
    3. How many brothers do you have? What do they do?
    4. What work do you do in your home?
        i. What do you do in your free time/for fun?
B. Subjects
    1. What subjects do you study?
        i. Of these, which ones do you like? Why? Do you find them easy?
        ii. What subjects do you find difficult? Why?
        iii. From which class are you studying maths? Science?

    2. Math
        i. How do you like maths?
            i. If you find it difficult, what do you find difficult?

        ii. If you find it easy, what do you find easy?
    i. How is your maths teacher?
    ii. How are you taught maths? Can you give example?
    iii. Do you ask questions?
    iv. What topic have you studied?
    v. Do girls take maths in higher classes?
        i. Do you want to take maths?
    vi. What can one become if one takes maths?

3. Science
    i. How do you like science?
        i. If you find it difficult, what do you find difficult?
        ii. If you find it easy, what do you find easy?
    ii. How is your science teacher?
    iii. Do you do practicals? Do you have labs?
    iv. Do girls take science is higher classes?
        i. Do you want to take science?
    v. What can one become if one takes science?
    vi. Have you ever participated in school, region, or national olympiads, competitions, or exhibitions related to maths or science?

4. Computer
    i. Are computers taught in your school?
        i. What is taught?
        ii. Since which class is it taught?
    ii. What is the importance of learning computers?
    iii. Have you heard of the Internet?
        i. If so, what does it do?
    iv. Have you seen computer cafes? Have you used them?
    v. If there was a computer center in your area, would you be interested in coming?
        i. What would you want to learn?
        ii. Would you be able to come? If not, then why?

5. What do you aspire to be? And why?

WOMEN'S GROUPS

1. How did you get associated with the group?
2. What work are you doing through the group?
3. How do you use technology in your work? (see if any link can be made with technology based on previous question)
4. What kind of technology do you use in your work?
5. What benefit do you get from its use?
6. Do you use it yourself or with someone's help?
7. Why you have not learned to use?

8. Do you use mobile, computer, email, internet, projectors in your work?
9. Are you linked with other organisation through mobiles or internet?
10. Have you ever received any kind of technical training for your work?
11. Do you feel the need of any of technical training?
    i. If yes, then what kind?
12. If a training was organised in your nearby town, would you be able attend? In Ranchi?
    i. If the training was 2-3 days residential training, would you be able to attend?
        1. If no, why not?

PARENTS

A. General
    1. Do you send your daughters to school? Which type of school?
    2. Are you satisfied with the education there? What do you like there? What can be improved there?
    3. Aside from studying, what work do they at home? How do they help out at home?
    4. What is the importance of girls' education?
    5. At what age do girls get married? Do you decide or could they decide for themselves.

B. Tech Centre
    1. Are you aware of computers?
    2. Would you want your girls to learn computers? What is the importance of learning computer?
    3. Is there a computer center here?
    4. If someone would start a computer course for girls, would you like to send your girls to a computer course?
    5. Would your girls be interested in going?
    6. What timings would be suitable for your girls and you to attend a computer center?

C. Schools
    1. Do your daughters take science subject in after 10th or not?
    2. If they take science subject, then what can they become?

D. Future
    1. What dreams to you have for your girls?

COLLEGE GOING GIRLS

A. Background
    1. Since which class have you been interested in science and maths?
    2. How did this interest develop in you?

3. In school, did you find science and maths easy or difficult?
    i. If you found it difficult, how did you overcome it?
4. Why have you chosen your current subject?
5. What kind of opportunities do you see in your chosen subject?
6. What do you want to become after completing your course?
7. Where would you like to work? (City, State, Country)
8. What do you parents do?
9. How much support did you receive from home for your studies?
10. What were the challenges from home?

B. Co-ed Institution
    1. What is the %age of girls and boys here?
    2. What courses do girls take mostly? Is there a preference for a particular course?
    3. Have you faced problems in studying with boys?

C. Any
    1. What is the %age of Adivasi students here? Adivasi girls are coming from which tribes?
    2. What facilities are available here?
    3. Are you satisfied with them?
    4. Where have girls who have studied here been placed?
    5. How is the placement record for girls?
    6. How can science, maths, computer education be promoted for girls in Jharkhand?