

An Assessment of the Impact of COVID-19 on ASM Communities And The New Opportunities



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Summary

COVID-19 had significant impacts on the lives and livelihoods of the males and females involved in artisanal and small-scale mining (ASM) in KBK region in India.

The impact of prolonged lockdown during COVID-19 was felt in declining household income and consumption pattern, increasing household food stress, reduced access and affordability to health care provisions. Those disproportionately affected were the lactating and pregnant women and adolescent girls due to non-availability of critically needed health care provisions. The prolonged long down and confinement at home for over 7 months led to increasing incidences of unwanted pregnancy, rising gender based violence including incidences of domestic violence, incidences of forced labor, child marriages, incidences of sexual harassments, incidences of human trafficking.

ASM people encountered increasing vulnerability of the spread of the virus due to congested living space to maintain social distance inside households and in communities. These were further aggravated by loss of employment, livelihood and a complete disruption of supply chain to avail essential commodities.

In spite of the negativities, COVID-19 has given us greater capacity and capability to reset, reposition and even repurpose our health, education and livelihood activities and application of communication technology.

Declining Household Income and Consumption Pattern

Household Income from different sources calculated Prior to COVID-19 and during Lockdown Period

Average household income from different sources calculated prior to COVID-19 and during the lockdown period. Data from Table 11 shows that there is a drastic fall in the income of respondent households during the period of lockdown which continued for about 7 months. There was a 67.53 percent fall in income from different activities pursued by the miner households. During the lockdown period the number of people engaged in hunting of game animals and collection of Non-timber Forest Produce (NTFP) increased drastically. This happened to supplement their livelihood as supervision in forest areas was reduced during the lockdown period. (Table 1)

Household consumption Prior to COVID-19 and during the Lockdown Period

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Approximate value of household consumption prior to COVID-19 and during the lockdown period was estimated.

There was a drastic fall in consumption pattern which is about 66.69 percent. As the fall of income was 67.53 percent, miner households had little money at hand to spend. These households were more or less subsistence in nature and they were in need of relief measures from government and non-government sources to tie up with the crisis, particularly food stress. (Table: 2.1)

Impact of restrictive measures during COVID-19

High incidence of poverty in the ASM communities had pushed many miners to accept the health risks associated with COVID-19 and continue mining despite restrictive measures and disrupted supply chains. Such a situation allowed illicit traders, brokers and other middlemen to take advantage of the vulnerability of ASM miners and buy their stock at low price.

Supply chain disruptions resulted in loss of jobs, declined income sources, and reduced consumption pattern, constraining the livelihoods of ASM households.

Lockdown measures, curfews, fear, and physical distancing requirements restricted access of the miners to mining sites, markets and mobility which also severely affected pursuing alternative livelihood activities like farming and small businesses.

Media reports indicated an increase in distress selling of mineral products, illegal, and irresponsible mining and minerals trading activities as a result of the pandemic crisis.

COVID-19 effect on the food supplies in the local Markets:

Since COVID-19 started, a majority of 83.48 percent shared that food supplies in the local market/shops had decreased. 78.35 males and 88.60 percent female respondents said they were severely affected due to the decline of food supplies in the local market/shops. (Table 2.2)

Household Level Food Stress during COVID-19:

Food stress increased with loss of household incomes. Recalling about the last 7 months, 82.69 percent respondents replied that there was a time when they or others in their households ate less than they thought they should because of a lack of money or other resources. 76.81 percent males and 88.60 females shared their experience about food stress situation during COVID-19 lockdown leading to skipping their meals.

- 15.24 percent respondents did not experience this situation while 2.07 percent could not exactly recall.

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- In some cases, there were a time some or other members in households were hungry but did not eat because there was not enough money or other resources for food.
- Recalling about the last 7 months, 21.19 percent respondents replied that there was a time when they or others in their households were hungry but did not eat because there was not enough money or other resources for food. 14.95 percent males and 27.46 percent females shared their experience about a time when they or others in their households were hungry but did not eat because there was not enough money or other resources for food.
- 78.81 percent respondents did not experience this situation (Table 3 and Table 4)

Impact on the Female Miners:

Female miners were more negatively affected by COVID: beyond the health impacts of the virus, majority of women faced loss of livelihoods as a result of lockdowns, travel restrictions, and market disruptions, both from their role as miners as well as owners of small businesses.

There were rising incidences of gender based violence in communities during the spread of COVID-19. Primary data on knowledge about the incidences of gender based violence (GBV) indicated 60.02 percent miners and 54.90 percent of front line community health workers (FCHWs) had information about the incidences of domestic violence, 23.70 percent miners and 50 percent of the FCHWs said about incidences of sexual harassment, 12.62 percent of the miners and 47.06 percent of the FCHWs mentioned incidences of human trafficking in their areas, 35.88 percent miners and 96.08 percent FCHWs were aware about rising incidences of child marriages, 29.79 percent miners and 48.04 percent FCHWs shared their knowledge about incidences of forced labour. (Table-5)

The various sources of information of about occurrence of gender based violence during COVID-19 for participants were print media, television/radio, own observation in the communities, information from friends and relatives including neighborhood friends, information from community based organizations/NGOs, information from Law Enforcement Agencies (local police). (Table-6)

Higher prevalence of risk, vulnerability and infection

Shortage of Space to maintain Social Distance Norm:

Crowded communities and close-contact living space in ASM households and number of persons confined in closed spaces during prolonged lockdown due to closure of schools and work places were observed as a major constraint in maintaining social distance norm. Transmission occurred more easily in the “Three C’s”: Crowded places with many people nearby; close-contact settings, especially where people have conversations very near to each other; confined and enclosed spaces with poor ventilation. The risk of COVID-19 spreading was higher in places

where these “3Cs” overlap. The data below provides a glimpse of situation in ASM communities of KBK region.

9.30 percent respondents were staying alone in their residence who had at least 1.5 living rooms, 36.95 percent of respondents had 1-3 members where one living room was shared by more than one person, 39.18 percent respondent households had 4-6 members where one living room is shared by about four persons while 12.37 percent of them had 7 and above members in their households where one living room was shared by about 3 persons. All the ASM miners were vulnerable to COVID-19 as they were staying in communities where there was little scope to maintain social distance and there was little awareness about preventive measures in the initial stage of infection. (Table 7)

The respondents were invariably vulnerable to COVID-19 as they were staying in communities where there was little scope to maintain social distance and there was little awareness about preventive measures in the initial stage of infection. 26.94 percent female miners and 38.14 percent male miners reported suffering from one or more conditions of coronary artery disease, high blood pressure (hypertension) and diabetic condition. 9.33 of female miners and 11.86 male miners were tested positive prior to the survey.

Impact on Health

From a health point of view, ASM communities, which were in remote and difficult to access locations, faced non-availability of critical protective supplies including masks, sanitizers. As such areas were in remote locations, health facilities were either missing or ill equipped, further increasing the vulnerability faced by miners and their families.

Those with previous health problems impacted more than others:

Prior to the spread of COVID-19, 9.84 percent female and 17.01 percent male miners mostly from ASM gold sector were exposed to chemical hazards like mercury inhalation, 7.25 percent female miners and 11.86 male miners were suffering from neurological, kidney and autoimmune impairment.

8.29 percent females and 7.22 percent male miners were showing symptoms of neuropsychiatric symptoms such as fatigue, insomnia, anorexia, shyness, withdrawal, depression, nervousness, irritability and memory problems.

19.69 percent females and 17.01 male miners were suffering from waterborne and vector-borne diseases, 2.07 percent females and 9.28 percent male miners were suffering from some or other sexually transmitted infections or HIV/AIDs, 6.22 percent female and 7.73 percent male miners were suffering from musculo-skeletal disorder - chronic injury and fatigue from carrying heavy materials over long distances, and bending over in awkward positions.

7.25 percent female and 28.87 male miners were under drug and alcohol abuse, 16.58 percent female 5.67 percent male miners were victims of violence either at the family or at the mining sites.

19.70 percent female and 27.84 percent male miners were found having nutritional deficit disorder, 6.74 female and 21.13 percent male miners were suffering from respiratory diseases such as silicosis, chronic bronchitis or tuberculosis,

4.15 percent ASM gold female miners who were pregnant were also exposed to mercury.

Co-morbid conditions like higher incidences of coronary artery disease and high blood pressure (hypertension), diabetic conditions, respiratory diseases, substance abuse had made the miners vulnerable to get severely ill from COVID-19. (Table 8)

Increased Risk for Pregnant and Lactating Women

12.66 percent females from ASM respondent households were either pregnant/recently pregnant or lactating as reported by the respondents. As majority of the pregnant women or recently pregnant women were older, overweight, and had pre-existing medical conditions such as hypertension and diabetes seemed to have an increased risk of developing severe COVID-19. Such women were in need of more prevention education care in the absence of access to adequate health care provisions and care facilities for treatment than non-pregnant women of reproductive age.(Table 10)

Due to changes in their bodies and immune systems, pregnant ASM females were vulnerable to respiratory infections as well. It was therefore important to aware them through community health care workers to take precautions to protect themselves against COVID-19, and to report possible symptoms (including fever, cough or difficulty in breathing) to their healthcare provider.

Reduced access to Health Care and Health Care System during COVID-19:

When asked about the healthcare services they had accessed in the last 1 year prior to COVID-19, district hospital was accessed by 19.12 percent respondents, 27.91 percent accessed to Community Health Centre –CHC for treatment, 28.68 percent were accessed to Primary Health Centre –PHC, 26.87 percent were accessed to community level sub-centres and about 1.87 percent were accessed Private Health Clinics (private Health care providers).

During the Covid-19 lock-down period, 88.11 percent respondents reported their household members (all adults and children) needed medical attention or been ill. 17.31 percent were reported suffering from fever, 32.56 percent were diagnosed of incidences of coronary artery disease/ high blood pressure/ diabetic condition, 13.95 were having respiratory diseases, 22.74 percent had pregnancy related illness, 2.84 percent had child birth related illness, 25. 32

percent suffered from headaches, 3.62 percent suffered injuries, 5.68 percent had other illness including HIV, TB and 10.59 percent tested COVID-19 positive.

33.89 percent of those ill did not avail any treatment, 17.94 percent availed self-medication, and 19.60 percent received treatment from on the counter medicine store Assistant, 14.29 percent especially the COVID-19 cases approached modern doctors in public health facilities and 14.28 received treatment from traditional healers.

14.29 percent of respondents those were ill during lockdown accessed to government health facilities for treatment. 11.94 percent of those ill consulted front line health workers (ASHA, ANM, Any other) for treatment during COVID-19 lockdown (Table 11 to Table 14)

Opportunities:

The COVID-19 is going to give us greater capacity and capability to reset, reposition and even repurpose our health, education and livelihood activities and application of communication technology.

Increasing need of ICT for ASM males and females:

- Information and communication technology use needs special focus as the COVID-19 pandemic has made it clear that communications technology has to be well developed in day today life. Therefore, investment in ICT training for small holder ASM producers will enhance their coping capacity in pandemic situation: benefit in term of accessing to information for awareness building, prior preparedness, managing online supply chain, communicating health care providers and suppliers of essential health care, hygiene, household necessities and seeking legal help as a protection against gender based violence. Harnessing the Transformative Potential of ICT as an opportunity to bridge social distance, restrictive mobility and disrupted supply chain– the Case of Pandemic Resilient Online small businesses run by ASM beneficiaries (Agri-Input and Grocery supply unit run by a SHG)
- During pandemic lock down when health facilities shifted their focus and resources for COVID-19 care, female community health care providers were the only care givers accessible to ASM people’s health care needs for different other health problems including sexual and reproductive health care needs . There is a need to strengthen their capacity to meet the health care needs of people during pandemic time. Trained Community health care workers can fill the health care need of ASM people to a larger extent when the entire focus and resources of the public health care system was shifted to COVID-19
- Increasing adherence to hygiene practices: Increasing emphasis on COVID-19 advisories in post COVID-19 will be an opportunity to protect the miners from occupational diseases

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- Higher interest for alternative pandemic resilient home based/back yard online business opportunities: Quick home based income opportunity in a short time period with low investment using low cost/no cost technologies backed by ICT will be an opportunity to address the loss of income and food stress in ASM households
- Alternative pandemic resilient supply chain: Pandemic resilient supply chain model backed by digital technology will be an alternative opportunity to protect the income of small holder peasant miners by uninterrupted sale of their perishable farms produce.
- Coping with Online education due to lock down of schools: ICT training to miners will create an opportunity to encourage their school enrolled children and children in mining to continue education during pandemic times.
- Miners have realized the need of networking with service providers and consumer data base for online operation and to access data for their daily use on health, education, agri-input and on line product marketing channels
- Increasing cooperation in household: COVID-19 pandemic has created a new approach of cooperation in households of some mining families to share daily chores, doing different household activities and care giving when other members are in need. This is likely to address the issue of gender based violence in families.
- Focus on formalization of ASM sector: Formalization of mining sector may be an option to protect the employment and loss income of miners during pandemic type crisis.
- Information seeking behaviour of ASM females/males: COVID-19 pandemic has increased the information seeking behaviour of ASM females on health, education, employment and income which can be harnessed for community development activities including capacity building on alternative livelihood opportunities.

Conclusion:

There was a drastic fall in the income of ASM households during the period of lockdown. The number of people engaged in hunting of game animals and collection of Non-timber Forest Produce (NTFP) increased drastically. This happened to supplement their livelihood as supervision in forest areas was reduced during the lockdown period. Fall in income led to a drastic fall in household consumption pattern as well. Lockdown measures, curfews, fear, and physical distancing requirements restricted access of the miners to mining sites, markets and mobility which also severely affected pursuing alternative livelihood activities like farming and small businesses.

The ASM miners were invariably vulnerable to COVID-19 as they were staying in communities and households where there was little scope to maintain social distance and there was little awareness about preventive measures in the initial stage of infection.

ASM communities which were in remote and difficult to access locations faced non-availability of critical protective supplies including masks, sanitizers.

Those miners with previous occupational health problems were impacted more than others. Pregnant and lactating women were the major risk groups vulnerable to infection. ASM communities had reduced access to health care and public health care facilities during the COVID-19 pandemic.

In spite of many negatives of COVID-19, it has given us greater capacity and capability to reset, reposition and even repurpose our health, education and livelihood activities and application of communication technology.

Main Report

COVID-19 had significant impacts on the lives and livelihoods of the males and females involved in artisanal and small-scale mining (ASM) in KBK region in India.

The impact of prolonged lockdown during COVID-19 was felt in declining household income and consumption pattern, increasing household food stress, reduced access and affordability to health care provisions. Those disproportionately affected were the lactating and pregnant women and adolescent girls due to non-availability of critically needed health care provisions. The prolonged long down and confinement at home for over 7 months led to increasing incidences of unwanted pregnancy, rising gender based violence including incidences of domestic violence, incidences of forced labor, child marriages, incidences of sexual harassments, incidences of human trafficking.

ASM people encountered increasing vulnerability of the spread of the virus due to congested living space to maintain social distance inside households and in communities. These were further aggravated by loss of employment, livelihood and a complete disruption of supply chain to avail essential commodities.

Data Source: Baseline Survey data & Gender Impact Assessment data

Main Report

COVID-19 had significant impacts on the lives and livelihoods of the males and females involved in artisanal and small-scale mining (ASM) in KBK region in India.

The impact of prolonged lockdown during COVID-19 was felt in declining household income and consumption pattern, increasing household food stress, reduced access and affordability to health care provisions. Those disproportionately affected were the lactating and pregnant women and adolescent girls due to non-availability of critically needed health care provisions. The prolonged long down and confinement at home for over 7 months led to increasing incidences of unwanted pregnancy, rising gender based violence including incidences of domestic violence, incidences of forced labor, child marriages, incidences of

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sexual harassments, incidences of human trafficking.

ASM people encountered increasing vulnerability of the spread of the virus due to congested living space to maintain social distance inside households and in communities. These were further aggravated by loss of employment, livelihood and a complete disruption of supply chain to avail essential commodities.

Declining Household Income and Consumption Pattern

Table 1: Average household Income from different sources calculated prior to COVID-19 and During Lockdown Period

Activities	Product	The period from 1st July 2019 to 28th February 2020, prior to COVID-19 lock down			The period from 1 st March 2020 to 30 th October, 2020 during COVID-19 lockdown			Percentage fall/increase in income	Percent increase/decrease in number of HH
		Average Income in INR and US\$ equivalent*	No of Households practicing	Per cent	Average Income in INR and US\$ equivalent **	No of Households practicing	Percent		
ASM activities	Color stone/ gold	36000 (498.96)	387	100	9760 (131.89)	208	53.75	73.57	46.25
Agriculture	Paddy-vegetables	28600 (396.40)	376	97.16	9300 (125.67)	206	53.23	66.78	43.93
Livestock – milk and small animals like goat/sheep and poultry	Milk-meat	4600 (63.76)	266	68.73	2400 (32.43)	105	27.13	42.83	41.6
Hunting of Game (Animals)	Meat	240 (3.33)	104	26.87	3240 (43.78)	197	50.90	92.59***	24.03
Fishing	Fish	850 (11.78)	84	21.70	450 (6.08)	47	12.14	47.06	9.56
Non-timber Forest Produce	Bamboo shoot, Mahua flower, Sal and Siali leaves for plate making	1560 (21.62)	312	80.62	3540 (47.84)	352	90.96	55.93***	10.34
Other Common	Mutha Kand, fuel	4300	141	36.43	2200	129	33.33	48.84	3.10

property Resources	wood	(59.60)			(29.73)				
Other (wage)	MGNREGA, wage from seasonal agriculture	25000 (346.50)	248	64.08	2800 (37.84)	28	7.24	88.88	56.84
Total/average		101150 (1401.94)	240		33690 (455.27)	156		67.53	35.00

*Exchange rate 1US\$ = INR 72.15 (February 2020)

**Exchange rate 1US\$ = INR 74.00 (November 2020)

Average household income from different sources calculated prior to COVID-19 and during the lockdown period.

Data from Table 11 shows that there is a drastic fall in the income of respondent households during the period of lockdown which continued for about 7 months. There was a 67.53 percent fall in income from different activities pursued by the miner households. During the lockdown period the number of people engaged in hunting of game animals and collection of Non-timber Forest Produce (NTFP) increased drastically. This happened to supplement their livelihood as supervision in forest areas was reduced during the lockdown period.

Table: 2.1: Average Estimated value of household expenditures prior to COVID-19 and During Lockdown Period

Expenditure Type	The period from 1st July 2019 to 28th February 2020, prior to COVID-19 lock down		The period from 1 st March 2020 to 30 th October, 2020 during COVID-19 lockdown		Percentage fall/increase in expenditure
	No of HH	INR	No of HH	INR	
Food purchases (vegetables, milk, bread, sugar, etc) –per day	387	8300	387	5685	31.51
Bulk foods (rice, grains, dal etc)	387	25000	387	11590	53.64
Buying of animal feed	292	4000	292	1680	58.00
Luxury foods (e.g. fish and meat, coffee, tea, sweets)	387	3800	387	1750	53.95

Clothing	387	3970	387	1550	60.96
Medicine and doctor consultation	298	3760	298	1640	95.74
Transport fuel/transport	149	7850	149	1480	81.15
Buying of farm gadgets	247	1650	247	230	86.06
Buying of mining gadgets	278	2100	278	125	94.05
Electric bill	296	2100	296	1460	30.48
Insurance premium	22	340	296	200	41.18
Shoes	188	400	22	180	55.00
Home improvement	297	1400	188	340	75.71
Household items (e.g. kitchen utensils, furniture) - 3	301	2280	297	540	76.32
Education (school fees, books)	152	1870	301	880	52.94
Marriages, births, and burials	98	8750	152	2760	68.46
Selected religious celebrations	387	6700	98	1600	74.78
Savings in cash & kind	387	16880	387	0	-
Total	274	101150	269	33690	66.69

*Exchange rate 1US\$ = INR 72.15 (February 2020)

**Exchange rate 1US\$ = INR 74.00 (November 2020)

Average Estimated value of household expenditures prior to COVID-19 and During Lockdown Period is compared.

There is a drastic fall in expenditure pattern which is about 66.69 percent. As the fall of income was 67.53 percent, miner households had little money at hand to spend. These households are more or less subsistence in nature.

Table 2.2. Since COVID-19 started, has your ability to market the crops/livestock/non farm items you produce... (N=387)

COVID-19 effect on the your ability to market the crops/livestock/non-farm items you produce	Count-N	Percent	Count & Percent	
			Male – N=194	Female-N=193
Stayed the same	56	14.47	34 (17.53)	22 (11.40)
Increased	08	2.07	08	0

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			(4.12)	
Decreased	323	83.46	152 (78.35)	171 (88.60)

Table 3. Thinking about the last 7 and ½ months, was there a time when you or others in your household ate less than you thought you should because of a lack of money or other resources? (N=387)

During COVID-19 lock down was there a time when you or others in your household ate less than you thought you should because of a lack of money or other resources	Count - N	Percent	Count & Percent	
			Male – N=194	Female-N=193
Yes	320	82.69	149 (76.81)	171 (88.60)
No	59	15.24	37 (19.07)	22 (11.40)
Do not know	08	02.07	08 (4.12)	0

Table 4. Still thinking about the last 7 months, was there a time when you or others in your household were hungry but did not eat because there was not enough money or other resources for food? (N=387)

During COVID-19 lock down was there a time when you or others in your household were hungry but did not eat because there was not enough money or other resources for food	Count - N	Percent	Count & Percent	
			Male – N=194	Female-N=193
Yes	82	21.19	29 (14.95)	53 (27.46)
No	305	78.81	165 (85.05)	140 (72.54)

The incidences of gender based violence

Table-5: No of participants who acknowledged the incidences of gender based violence in their communities during COVID-19 (N = 1,005)-multi-

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choice.

Knowledge		No of participants who acknowledged the incidences of gender based violence in their communities				
		Total n=1005	ASM Workers		Front line Health Care Providers	
			N=903	%	N -102	%
Gender based violence	Incidences of domestic violence	598	542	60.02	56	54.90
	Incidences of sexual harassment	265	214	23.70	51	50.00
	Incidences of human trafficking	162	114	12.62	48	47.06
	Incidences of child marriages	422	324	35.88	98	96.08
	Incidences of forced labour	318	269	29.79	49	48.04
	Don't know any such incidence	118	107	11.85	11	10.78

In reference to gender based violence (GBV), 60.02 percent miners and 54.90 percent of front line community health workers (FCHWs) acknowledged the incidences of domestic violence, 23.70 percent miners and 50 percent of the FCHWs said about incidences of sexual harassment, 12.62 percent of the miners and 47.06 percent of the FCHWs mentioned incidences of human trafficking in their areas, 35.88 percent miners and 96.08 percent FCHWs were aware about rising incidences of child marriages, 29.79 percent miners and 48.04 percent FCHWs shared their knowledge about incidences of forced labour. Only 11.85 percent miners and 10.78 percent FCHWs could say about the incidences of gender based violence in communities.

Sources of information about gender based violence

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Table-6: Sources of information about gender based violence in ASM communities during COVID-19

Sources of information of about occurrence of gender based violence during COVID-19		No of participants who accessed				
		Total n=1005	ASM Workers		Front line Health Care Providers	
			N=903	%	N -102	%
Sources of information	Print Media	162	114	12.62	48	47.06
	Television/Radio	465	374	41.42	91	89.22
	Social Media & Internet	265	214	23.70	51	50.00
	Own Observation in the community	318	269	29.79	49	48.04
	Information by Friends and relatives/neighborhood friend	422	324	35.88	98	96.08
	Information from Community Based organizations/NGOs	598	542	60.02	56	54.90
	Information from Law Enforcement Agencies (local police)	58	44	4.87	14	13.73
	Knows the Victim or victims relation who communicated	344	277	30.68	67	65.69
	Knew from local Health Facility/Care giver/counselor	78	14	1.56	64	62.75
	Don't have access to any information source	118	107	11.85	11	10.78

The various sources of information of about occurrence of gender based violence during COVID-19 for participants were print media, television/radio, own observation in the

communities, information from friends and relatives including neighborhood friends, information from community based organizations/NGOs, information from Law Enforcement Agencies (local police). 30.68 percent miners and 65,69 percent FCHWs said that they either Knew the victim or victims relation who communicated them. The other sources were information from local Health Facility/Care giver/counselor as 62.75 percent FCHWs reported about this source.

Shortage of Space to maintain Social Distance Norm:

Crowded communities and close-contact living space in ASM households and number of persons confined in closed spaces during prolonged lockdown due to closure of schools and work places were observed as a major constraint in maintaining social distance norm. Transmission can occur more easily in the “Three C’s”: Crowded places with many people nearby; close-contact settings, especially where people have conversations very near to each other; confined and enclosed spaces with poor ventilation. The risk of COVID-19 spreading is higher in places where these “3Cs” overlap. The data below provides a glimpse of situation in ASM communities of KBK region.

Table 7: Household Size and number of person(s) accommodate per room in households
 N=387

No of people Live with you	Average number of Rooms in HH	Rooms per person in HH	Count – N-387	Percent	Male – N=194	Female- N=193
Self (0)	1.5	1.5	036	9.30	21 (10.82)	15 (7.77)
1-3	1.5	0.6	143	36.95	73 (37.63)	70 (36.27)
4-6	1.25	0.25	150	38.76	76 (39.18)	74 (38.34)
7 and above	3.0	0.38	058	14.99	24 (12.37)	34 (17.62)

9.30 percent respondents were staying alone in their residence who had at least 1.5 living rooms, 36.95 percent of respondents had 1-3 members where one living room was shared by more than one person, 39.18 percent respondent households had 4-6 members where one living room is shared by about four persons while 12.37 percent of them had 7 and above members in their households where one living room was shared by about 3 persons. All the ASM miners were vulnerable to COVID-19 as they were staying in communities where there was little scope to maintain social distance and there was little awareness about preventive measures in the initial stage of infection.

Health information and COVID-19

26.94 percent female miners and 38.14 percent male miners reported suffering from one or more conditions of coronary artery disease, high blood pressure (hypertension) and diabetic condition.

Table 8: Health threats in ASM communities

Types of hazards miners are exposed to	Count – Females	%	Count – Male	%
COVID-19 vulnerability (incidences of coronary artery disease and high blood pressure (hypertension), diabetic condition)	52	26.94	74	38.14
COVID-19 infected (diagnosed)	18	9.33	23	11.86
Chemical hazard –mercury inhalation	19	9.84	33	17.01
Number of miners suffering from neurological, kidney and autoimmune impairment	14	7.25	23	11.86
Numbers showing symptoms of neuropsychiatric symptoms such as fatigue, insomnia, anorexia, shyness, withdrawal, depression, nervousness, irritability and memory problems	16	8.29	14	7.22
Numbers suffering from waterborne and vector-borne diseases,	38	19.69	33	17.01
Number suffering from sexually transmitted infections, HIV/AIDs, and tuberculosis.	04	2.07	18	9.28
Musculo-skeletal disorder - chronic injury and fatigue from carrying heavy materials over long distances, and bending over in awkward positions,	12	6.22	15	7.73
Drug and alcohol abuse	14	7.25	56	28.87
Violence	32	16.58	11	5.67
Nutritional deficit	38	19.70	54	27.84
Respiratory diseases such as silicosis, chronic bronchitis or tuberculosis	13	6.74	41	21.13
Pregnant Female exposed to mercury-pregnancy can experience detrimental effects.	08	4.15	0	0

All the ASM miners were vulnerable to COVID-19 as they were staying in communities where there was little scope to maintain social distance and there was little awareness about preventive measures in the initial stage of infection.

9.33 of female miners and 11.86 male miners were tested positive.

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The project “Mitigating the impacts of COVID-19 in artisanal and small-scale mining (ASM) communities in KBK regions of Odisha, India is supported by Extractives Global Programmatic Support (EGPS) and administered by the World Bank Group (www.worldbank.org/egps).

SRADHA

9.84 percent female and 17.01 percent male miners mostly from ASM gold sector were exposed to chemical hazards like mercury inhalation, 7.25 percent female miners and 11.86 male miners were suffering from neurological, kidney and autoimmune impairment, 8.29 percent females and 7.22 percent male miners were showing symptoms of neuropsychiatric symptoms such as fatigue, insomnia, anorexia, shyness, withdrawal, depression, nervousness, irritability and memory problems, 19.69 percent females and 17.01 male miners were suffering from waterborne and vector-borne diseases, 2.07 percent females and 9.28 percent male miners were suffering from some or other sexually transmitted infections or HIV/AIDs, 6.22 percent female and 7.73 percent male miners were suffering from musculo-skeletal disorder - chronic injury and fatigue from carrying heavy materials over long distances, and bending over in awkward positions, 7.25 percent female and 28.87 male miners were under drug and alcohol abuse, 16.58 percent female 5.67 percent male miners were victims of violence either at the family or at the mining sites, 19.70 percent female and 27.84 percent male miners were found having nutritional deficit disorder, 6.74 female and 21.13 percent male miners were suffering from respiratory diseases such as silicosis, chronic bronchitis or tuberculosis, 4.15 percent ASM gold female miners who were pregnant were exposed to mercury.

High incidences of these co-morbid conditions like higher incidences of coronary artery disease and high blood pressure (hypertension), diabetic conditions, respiratory diseases had made the miners more likely to get severely ill from COVID-19.

Table 9: Number of persons tested positive by Covid -19

Number tested positive per household	No of respondents N=387	Percent
0	346	89.41
1	041	10.59

10.59 percent miners were tested positive from respondents' households prior to the survey.

Table 10: Pregnant/ lactating women in the House Hold

Pregnant & lactating women	No of HH	Percent
Yes	049	12.66
No	338	87.34

12.66 percent females from ASM respondent households were either pregnant/recently pregnant or lactating as reported by the respondents.

Pregnant women or recently pregnant women who were older, overweight, and had pre-existing medical conditions such as hypertension and diabetes seemed to have an increased risk of developing severe COVID-19. Such women needed more prevention education care in the absence of access to adequate health care provisions and care facilities for treatment than non-pregnant women of reproductive age.

Due to changes in their bodies and immune systems, pregnant ASM females were vulnerable to respiratory infections. It was therefore important to aware them through community health care workers to take precautions to protect themselves against COVID-19, and to report possible symptoms (including fever, cough or difficulty in breathing) to their healthcare provider.

Table 11: Number of persons in need of medical attention or been ill during the Covid-19 lock-down period (all adults and children)

Medical attention during lock down	No of HH	Percent
Yes	341	88.11
No	046	11.89

During the Covid-19 lock-down period, 88.11 percent respondents reported their household members (all adults and children) needed medical attention or been ill.

Table 12: Nature of illness during Lockdown

Nature of Illness	Count N=387	Per cent
Fever	67	17.31
Coronary artery disease, high blood pressure, diabetic condition	126	32.56
Respiratory Disease	54	13.95
Pregnancy related	88	22.74
Child birth	11	02.84
Head-aches	98	25.32
Injuries	14	03.62
Other disease (TB/HIV and others)	22	05.68
COVID-19 infection	41	10.59

17.31 percent suffered from fever, 32.56 percent were diagnosed of incidences of coronary artery disease/ high blood pressure/ diabetic condition, 13.95 were having respiratory diseases,

22.74 percent had pregnancy related illness, 2.84 percent had child birth related illness, 25.32 percent suffered from headaches, 3.62 percent suffered injuries, 5.68 percent had other illness including HIV, TB and 10.59 percent tested COVID-19 positive.

Table 13: Access of those ill to type of treatment during Lockdown

Type of treatment those ill	Count N=301	Per cent
Nothing	102	33.89
Self Medication	54	17.94
On the counter medicine store Assistant	59	19.60
Modern doctor	43	14.29
Traditional healer	43	14.28

33.89 percent of those ill did not avail any treatment, 17.94 percent availed self-medication, and 19.60 percent received treatment from on the counter medicine store Assistant, 14.29 percent especially the COVID-19 cases approached modern doctors in public health facilities and 14.28 received treatment from traditional healers.

Table 14: What healthcare services do you have accessed in the last 1 year prior to COVID-19? Multi-Choice

Health services accessed by ASGM communities	Count	%
District Hospital	74	19.12
Community Health Centre -CHC	108	27.91
Primary Health Centre -PHC	111	28.68
Sub-Centres	104	26.87
Private Health Clinics (private Health care providers)	016	01.87

When asked about the healthcare services they had accessed in the last 1 year prior to COVID-19, district hospital was accessed by 19.12 percent respondents, 27.91 percent accessed to Community Health Centre –CHC for treatment, 28.68 percent were accessed to Primary Health Centre –PHC, 26.87 percent were accessed to community level sub-centres and about 1.87 percent were accessed Private Health Clinics (private Health care providers).

Table 15: Number of persons: those ill who accessed to government health facility during Lockdown

Access of those ill to government health facility	Count n=301	Percent
Yes	43	14.29
No	258	85.71

14.29 percent of respondents those were ill during lockdown accessed to government health facilities for treatment.

Table 16: Access of those ill to front line health workers (ASHA, ANM, Any other) during Lockdown

Access of those ill to health workers	Count n=301	Percent
Yes	54	11.94
No	247	82.06

11.94 percent of those ill consulted front line health workers (ASHA, ANM, Any other) for treatment during COVID-19 lockdown

Opportunities:

In spite of the negativities, COVID-19 is going to give us greater capacity and capability to reset, reposition and even repurpose our health, education and livelihood activities and application of communication technology.

Increasing need of ICT for ASM males and females:

- Information and communication technology use needs special focus as the COVID-19 pandemic has made it clear that communications technology has to be well developed in day today life. Therefore, investment in ICT training for small holder ASM producers will enhance their coping capacity in pandemic situation: benefit in term of accessing to information for awareness building, prior preparedness, managing online supply chain, communicating health care providers and suppliers of essential health care, hygiene, household necessities and seeking legal help as a protection against gender based violence. Harnessing the Transformative Potential of ICT as an opportunity to bridge social distance, restrictive mobility and disrupted supply chain– the Case of Pandemic Resilient Online small businesses run by ASM beneficiaries (Agri-Input and Grocery supply unit run by a SHG)
- During pandemic lock down when health facilities shifted their focus and resources for COVID-19 care, female community health care providers were the only care givers accessible to ASM people’s health care needs for different other health problems including sexual and reproductive health care needs . There is a need to strengthen their capacity to meet the health care needs of people during pandemic time. Trained Community health care workers can fill the health care need of ASM

people to a larger extent when the entire focus and resources of the public health care system was shifted to COVID-19

- Increasing adherence to hygiene practices: Increasing emphasis on COVID-19 advisories in post COVID-19 will be an opportunity to protect the miners from occupational diseases
- Higher interest for alternative pandemic resilient home based/back yard online business opportunities: Quick home based income opportunity in a short time period with low investment using low cost/no cost technologies backed by ICT will be an opportunity to address the loss of income and food stress in ASM households
- Alternative pandemic resilient supply chain: Pandemic resilient supply chain model backed by digital technology will be an alternative opportunity to protect the income of small holder peasant miners by uninterrupted sale of their perishable farms produce.
- Coping with Online education due to lock down of schools: ICT training to miners will create an opportunity to encourage their school enrolled children and children in mining to continue education during pandemic times.
- Miners have realized the need of networking with service providers and consumer data base for online operation and to access data for their daily use on health, education, agri-input and on line product marketing channels
- Increasing cooperation in household: COVID-19 pandemic has created a new approach of cooperation in households of some mining families to share daily chores, doing different household activities and care giving when other members are in need. This is likely to address the issue of gender based violence in families.
- Focus on formalization of ASM sector: Formalization of mining sector may be an option to protect the employment and loss income of miners during pandemic type crisis.
- Information seeking behaviour of ASM females/males: COVID-19 pandemic has increased the information seeking behaviour of ASM females on health, education, employment and income which can be harnessed for community development activities including capacity building on alternative livelihood opportunities.

Conclusion:

There was a drastic fall in the income of ASM households during the period of lockdown. The number of people engaged in hunting of game animals and collection of Non-timber Forest Produce (NTFP) increased drastically. This happened to supplement their livelihood as supervision in forest areas was reduced during the lockdown period. Fall in income led to a drastic fall in household consumption pattern as well. Lockdown measures, curfews, fear, and physical distancing requirements restricted access of the miners to mining sites,

markets and mobility which also severely affected pursuing alternative livelihood activities like farming and small businesses.

The ASM miners were invariably vulnerable to COVID-19 as they were staying in communities and households where there was little scope to maintain social distance and there was little awareness about preventive measures in the initial stage of infection.

ASM communities which were in remote and difficult to access locations faced non-availability of critical protective supplies including masks, sanitizers.

Those miners with previous occupational health problems were impacted more than others. Pregnant and lactating women were the major risk groups vulnerable to infection. ASM communities had reduced access to health care and public health care facilities during the COVID-19 pandemic.

In spite of the negativities, COVID-19 has given us greater capacity and capability to reset, reposition and even repurpose our health, education and livelihood activities and application of communication technology.