Rajiv Gandhi
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Policy WATCH

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COVID SPECIAL

Growth with Employment
+
Governance and Development

In this issue

RAJIV GANDHI
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Editorial

The Rajiv Gandhi Institute for Contemporary Studies (RGICS) works on five themes:

1. Constitutional Values and Democratic Institutions
2. Growth with Employment
3. Governance and Development
4. Environment, Natural Resources and Sustainability
5. India's Place in the World.

Two entwined challenges that continue to prevail during the COVID pandemic are related to governance and economy. Therefore, addressing the need of the time, this issue is the second of the two part COVID special issues from the themes, Governance and Development, and Growth with Employment.

This issue opens with a report by Mr Vijay Nadkarni, Program Coordinator, RGICS, et al. on a study conducted by RGICS on Prawasi-Niwasi (migrants-residents) lives and livelihoods. Based on a telephonic survey conducted in six states in May-June this year, the study brings out key differences among rural workers and the migrant workers, who returned to the source states, along three dimensions. These are healthcare; livelihoods; and psycho-social aspects of their lives.

A paper on reviving urban and rural employment post COVID-19, by Mr M. Rafi, Senior Advisor for Skills Technology and Innovation, RGICS, is presented as the second article. The paper is based on the novel framework of WELL (Water, Energy, Land, and Livestock)-DONE (Digital skills for rural diversification, Organised interventions, Non-farm opportunities, and E-commerce), which I first used while advising the Government of Nagaland in May this year, on what to do to provide livelihoods to the returnees to the state. Using the WELL DONE framework, the paper clearly identifies and suggests opportunities for employment and self-employment for residents and returnee migrants in rural areas, as well as workers in urban areas.

We share snapshots on major developments in Health and Education sectors. With the announcement of National Digital Health Mission, and the current ongoing shift to digital education within overall framework of National Education Policy 2020, new areas of research and concern are emerging. The success of these digital initiatives will be hinged on multiple factors, including but not limited to, world class data management, digital infrastructure, improved access and digital literacy.

RGICS has been actively involved with studying the issues of agriculture, MSMEs, urban governance and the youth in Punjab. The final article, by Mr Yuvraj Kalia, Fellow, RGICS, is a note on contemporary challenges and ways forward for sectors of small and medium enterprises; housing for industrial workers and agriculture in the state of Punjab.

We hope our readers enjoy this issue, and policymakers find the suggestions made herein timely and useful for shaping a better response to the current challenges.

Vijay Mahajan, Director,
Rajiv Gandhi Institute for Contemporary Studies

Findings from the

Prawasi-Niwasi study consequent to Covid-19 pandemic

Vijay Nadkarni, Rashmi Saxena, Gautam Bandopadhyay and Manoj Mishra

1 Introduction – Coverage, Dimensions and Objectives of the Study

The Covid-19 pandemic and the consequent lockdowns have impacted economic wellbeing and livelihoods of the majority in a major way. As a result, the psychological health and the impact on social structure may be at risk. It was decided to carry out a study of "Prawasi and Niwasi lives and livelihoods" as follows:

1.1 Coverage of Impacted Rural Population Segments

a. Already-resident rural workers-

- Farmers: Although all category of farmers are in grave situation, among them small and marginal farmers are more badly impacted by the current crisis.
- Artisans and Non-farm workers: A large segment of rural men and women are dependent on craftsmanship.
- Women: Women and children are the other worse effected segment in our society. Women lost their jobs, the reporting of domestic violence cases are on high rise. Women are the last recipients of food and medical facilities in case of crisis. They have psychological distresses, at the same time dealing with day to day increased workloads.

b. Returnee Migrant workers –

- Both annual short-term ones and those who had been away for years
- These will further be divided into those who do not want to return to urban workplaces and those who do, when the situation permits.

1.2 Aspects / dimensions that were studied

Keeping in mind the current scenario, three dimensions were studied.

a. Health care (not just Covid precautions but overall)

b. Livelihoods (in terms of food security, employment and income)

c. Psycho-social aspects (in terms of mental health, interaction, mutuality and collaboration)

1.3 Objectives of the study

The study was conducted with two objectives

1 To make an assessment of various population segments in a village: residents: farmers, artisans, women and children; and returned migrant workers, from the point of view their:

1.1 The health situation, not just in terms of preventing spread of Covid infection but also in terms of regular health issues like mother and child health, immunization, earlier diseases like diarrhea, malaria and tuberculosis, and NCDs like diabetes, hypertension, cardiovascular and cancer.

1.2 The livelihood situation in terms of employment and income, mapping out what people are doing on a dynamic basis to manage, including use of own savings; sale of assets; cash receipts and in-kind help (such as food grains) from the government, charities, neighbours and relatives; getting work in MGNREGA like schemes; getting agricultural or other manual work; and any others

1.3 The psycho-social situation on the dimensions of resilience vs. helplessness, stressed vs. coping; optimism vs. pessimism about the future, and social relations in terms of saving oneself vs. mutuality and mistrust vs. collaboration

2 To develop a number of localized strategies

2.1 For health, using resources available at village level in terms of ASHAs, and rural medical practitioners, NGOs, government PHCs and CHCs and ambulance services. Some thought to be paid to how will some of the out of pocket expenses met in case of hospitalization.

2.2 For livelihoods, using resources available at village level in terms of labour, water, land, livestock, skill sets, energy sources, technology and employment options like MGNREGA, farm-work and non-farm activities

2.3 For psycho-social – prepare a number of localized strategies for promoting the mental well-being of various segments and reviving social interaction, mutuality and collaboration.

2 Methodology followed and details of respondents

The study was conducted by carrying out a survey based on telephonic interviews with a purposive sample of returnee migrants (Prawasi) and resident villagers (Niwasi) in the states of Chhattisgarh (CG), Odisha, Uttar Pradesh (UP), Bihar, Jharkhand and Rajasthan. The sample size consisted of a total of 537 respondents from the six states including 249 returnee migrant workers and 288 residents. The state wise break-up of the number of respondents is as follows:

State	Total	Migrants	Residents
Chhattisgarh	129	71	58
Odisha	121	59	62
Uttar Pradesh	105	50	55
Bihar	60	27	33
Jharkhand	60	30	30
Rajasthan	62	12	50
Total	**537**	**249**	**288**

Gender-wise break-up (%)			
	Total	Migrants	Residents
Female	20	13	29
Male	80	88	71

3 Summary of the major findings of the survey

3.1 Health

The situation on the front of health and public health administration, as indicated by the findings of the survey, is that while there are some areas where the position is relatively satisfactory with some scope for improvement, there are some areas where urgent steps need to be taken for improvement.

An indication received from the survey was that some of the systems instituted for taking health and nutrition services to the community are getting stabilised, though there is considerable room for improvement. It was reported by over 80% of the respondents that the Anganwadis were functional in their areas. 83% of the respondents also reported availability of the services of the Accredited Social Health Activists (ASHA) in their villages. It seems these are some of the functions in the area of rural health which are becoming a part of the social system. Services of immunisation etc. were also reported to be available by most of the respondents. During the pandemic, distribution of food was one of the functions entrusted to Anganwadi workers in some areas. The ASHA workers also spread awareness about COVID-19 and the precautions to be taken.

However, some of the services which needed considerable improvement in most areas were the services of Primary Health Centres (PHC). Overall, PHCs were within a distance of 5 kms. for around 62% of the respondents, though there are inter-state variations. The norms as regards establishment of PHCs are based on population served by a PHC. The Guidelines for Primary Health Centres issued under the Indian Public Health Standards by the Ministry of Health and Family Welfare in 2012 state that a typical PHC covers a population of 20,000 in hilly, tribal and difficult areas and 30,000 in plain areas. The PHC also acts as referral unit for 6 Sub-Centres. As most of the respondents in the survey could also be referring to a sub-centre while discussing the distance from a PHC, it would be difficult to estimate the extent to which the norms for establishment of PHCs have been met. However, it could certainly be said that in most states the network is established quite extensively though there is scope for improvement, especially in the tribal areas of Odisha etc.

However, though the network of PHCs was expanding in most states, mere creation of physical infrastructure did not necessarily lead to regular availability of all services at the centres. An indication of the satisfactory quality of services at the PHCs is the preference of the people to use the services of PHCs over other options in the event of a need for medical assistance. It was attempted to estimate the extent to which people prefer to approach a PHC. Though the exact estimation is difficult due to multiple preferences of the respondents, it can certainly be estimated that the services of PHCs were availed in less than 60% of the cases on an average. The percentage of preference for PHC services was especially low at 38% and 39% for the states of U.P. and Bihar respectively, though the network of PHCs/sub-centres was relatively well spread out.

The percentages of PHCs/ sub-centres within a distance of 5 kms were as high as around 80% in the states of UP and Bihar. In the context of the smaller distances from PHCs/ sub-centres reported in these states, the low preference for PHCs is a telling contrast and indicates that it is not adequate to build the infrastructure alone. An attempt was made to determine if there existed a co-relation between higher income and low preference for PHCs as it is generally assumed that people with relatively higher income would tend to prefer medical services from centres other than PHCs. However, the available data does not support this hypothesis, though some further analysis may be required to be carried out.

It appears that on many occasions the staff posted at the PHCs were not available at the centres in almost all states. The irregular attendance of staff, the inconsistent supply of required medicines etc. and the perceived quality of care have resulted in people mostly preferring consulting an unregistered medical practitioner or even a medical stores operator instead of approaching a PHC. PHCs serve as a "first port of call" for medical needs in the public health sector. It could reasonably be argued that patients opting for PHCs for medical needs on maximum occasions is the primary test of the success of public health services. It could sadly be said that, on this count, the public health services have failed.

Another concern voiced by the respondents was that during the pandemic the attention of the medical and health personnel was diverted toward the containment of the virus and precautionary measures due to which some of the other health issues received lesser attention.

3.2 Livelihoods and income

An important objective was to study the situation as regards livelihoods, both of the residents in the villages and of the migrants who had returned to the villages. As regards migrant returnees, it was attempted to assess the details of the nature of work done by the migrants in their work locations; the reasons for their migration; the income differential, if any, on migration; willingness to go back to the earlier location for work; the possible livelihood options and the opportunities available to them in their villages as also the type of work they could do and were willing to do. Similarly, the details of residents were attempted to be studied in respect of income earned and the sources of income with relative share of each of the sources; details of land and irrigation facilities etc. It was attempted to ascertain as to what was expected from the government by both the residents and migrants and what could be done to better their lot.

The various aspects tried to be assessed and the findings are as follows:

a. Types of jobs done by migrants:

Migrant returnees were asked about the type of work they used to do at their work locations. The responses were classified into five categories and the percentages of workers in each of the categories of work were as follows:

	Chhattisgarh	Orissa	Uttar Pradesh	Bihar	Jharkhand	Rajasthan	Total
Skilled work	28.17	37.30	18.00	33.33	60.00	66.67	34.50
Construction work/ wage labour	50.70	57.60	58.00	52.78	16.67	16.67	48.45
Factory work	11.27	5.10	18.00	8.33	23.33	16.67	12.40
Own enterprise	9.86	9.86	0.00	2.78	0.00	0.00	3.10
Domestic work	0.00	0.00	6.00	2.78	0.00	0.00	1.55
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It was observed that almost half (48.5%) of the migrant workers were engaged in work on daily wages including as construction workers. A welcome finding is that over one-third of the

migrants were engaged in skill-based occupations such as that of plumber, electrician, carpenter etc. Only three percent of the workers reported that they ran their own enterprises.

If a higher share of skilled workers amongst all migrant workers is to be taken as rough indicator of higher level of skill and quality of working population, it was encouraging to observe that most workers from Jharkhand were engaged in skilled work (60%) and another 23% worked in factories. Only one-sixth of the migrant workers from Jharkhand were engaged in wage labour as per the data. Rajasthan too had a large share of skilled workers, with two-thirds of the workers being engaged in skilled work which was the largest share amongst all states. (However, as will be seen later, this has not translated into higher earnings for the migrants of Rajasthan). Over half of the workers were engaged in wage labour or construction work Chhattisgarh as well as Bihar and in U.P. the percentage was as high as 58%.

It would be insightful to study the factors which contribute to making the migrant work-force from a state or region take up more of skilled activities.

b. Reasons for migration:

The reasons for migrations were also sought to be understood. As would be expected, the most common reasons stated by the migrants included i) non-availability of adequate work in the village ii) landlessness and iii) possibility of earning higher income on migration. An attempt was also made to study the differential between incomes of residents and migrants.

c. Borrowings during the pandemic:

A question was asked as to how the respondents normally coped with any requirements of additional funds for any reasons. Almost half the respondents stated that they usually take loans or receive support from relatives, neighbours and friends. It was also asked if they had to borrow during the pandemic. It was found that only 17.5% of the respondents needed to borrow any money during the pandemic (the interviews were conducted in the second half of May and early June). It was a good sign to see that the number of people borrowing was not high and is perhaps an indication that the traditional social security networks of support from relatives and neighbours etc. in rural India continue to be active.

d. Average Income levels of migrants and residents:

The data related to incomes of respondents in any survey has to be carefully studied before drawing any major conclusions from the data based on the responses. This is because of the reluctance of many respondents to part with exact information regarding their incomes but also because many farmers and workers with irregular income patterns do not have accurate records of their incomes. Keeping this caveat in mind, the income pattern of migrants and residents was analysed. The average annual incomes of residents as well as migrants as disclosed are presented in the table below:

Average incomes per annum (in Rs.) of migrants and residents				
	Residents	Migrants	Combined	Increment for migrants %
Chhattisgarh	116100	75070	93692	-35.34
Odisha	66840	122000	91960	82.53
UP	78550	109100	93100	38.89
Bihar	72880	88700	80000	21.71

Jharkhand	57330	92170	74750	60.77
Rajasthan	112500	78750	105970	-30.00
Average	86800	95900	87130	10.48

The average annual income of the respondents in the survey stands at only Rs. 87,130. Rajasthan has the highest average annual income amongst all states at around Rs. 1,06,000/-. The average income of Niwasi (resident) farmers from all the states was Rs. 86,800. The average was highest for CG followed by Rajasthan. As regards migrant workers, the average income was higher than the Niwasi farmers at Rs. 95,900. Odisha had the highest figure of average income of migrants amongst all states followed by U.P.

As per the NABARD All India Rural Financial Inclusion Survey (NAFIS) average agriculture household income was Rs 8,931 per month in 2016-17 which is equivalent to around Rs. 1,07,000 p.a. According to the report of the Committee on Doubling of Farmers' income, the average annual earnings of a small and marginal farmer household in 2015-16, stood at a figure of Rs. 79,779/-. (https://www.livemint.com/budget/expectations/india-needs-a-new-deal-for-rural-india-1562254473284.html). With only a marginal increase to be expected in the income of the farmers over the last four years, the income as derived from the survey does not appear to be wide off the estimate of the Committee. However, the average income of farmers as per the survey is lower than the NAFIS estimates. It may also be mentioned here that in some cases the farm produce retained for home consumption has not been included in the total income in our survey, which too would have resulted in understating the income to some extent.

An analysis of the average annual income of migrants as compared to that of residents indicates that the income of migrants was higher than that of residents by 10.5 per cent. However, this average of all states hides large variations in the pattern within the states. In Odisha, the incremental income of migrants over that of the residents is the highest in percentage terms at 82.5%, while in CG and Rajasthan, the migrants actually earned less than the residents surveyed in those states. Prima facie, it appears that the land holdings of the residents covered in the survey in these two states were slightly higher than the average. In Rajasthan, nearly 40% of the respondents had land holdings of over 3 acres. The level of income of migrants would also depend on the type of work – wage labour or skilled and semi-skilled work – undertaken as also the destination state. To understand the situation better, a comparison was made by excluding the two states of CG and Rajasthan. The resultant figures are presented as follows:

Income differential -Migrants over residents excluding CG and Rajasthan			
State	**Avg. Income p.a. - Residents Rs.**	**Avg. Income p.a. - Migrants Rs.**	**Income differential %**
Odisha	66840	122000	82.54
UP	78550	109100	38.9
Bihar	72880	88700	21.71
Jharkhand	57330	92170	60.76
Average	**69955**	**106563**	**52.33**

With the exclusion of the two outlier states of CG and Rajasthan, the average income of migrants in comparison to that of the residents indicates a comfortable increment of over 52%. The high income of migrant workers from Odisha could be due to the fact that out of those surveyed, 29% used to work in Kerala where the wage rate is reported to be comparatively higher. Another 13% go to Maharashtra and 10% to Gujarat which are also considered to be relatively higher paying states, especially for those working in diamond, textiles and gold jewellery sectors. (these statements admittedly are not based on hard data from the survey).

However, it has to be mentioned that this analysis only compares the average incomes of migrants with those of residents and does not necessarily indicate the incremental income which a migrant would earn on migration over the income he or she could have earned in the place of residence.

e. Willingness to go back to work-location:

Half of the migrant workers covered in the study (126 out of 248 – 50.8%) expressed willingness to go back to their workplaces. It may also be noted that the survey was conducted in the month of May and it is surmised that the number of those who would be willing to go back would have increased in the subsequent period, partly because they would have got over their initial reaction to their plight due to the developments that unfolded and also because they would have realised that the situation in their villages - which made them migrate in the first place – continued to be more or less the same as earlier. In Odisha, the percentage of those who were willing to return was as high as 65% followed by Jharkhand where over 61% of the workers were willing to return. In U.P., the percentage was 48% and CG had the lowest percentage of those willing to return at 32%. It needs to be examined if the skilled workers are more willing than the rest to go back.

4 Possible livelihoods options

The migrant workers were asked as to what according to them were possible livelihoods options for them back in their villages. While more than one option was indicated by many as was to be expected, wage labour was an option chosen by as many as almost 60% of the respondents. The next choice was farming which was chosen by 30% of the respondents. Skill-based work was mentioned by approximately 22%, while 21% mentioned running some business enterprise as an option. Livestock (dairy and poultry) was mentioned by around 10% of the respondents. A point worth mentioning is that as many as 47.5% of the migrants from Odisha mentioned business enterprise as one of the options. In Gajapati district alone, as many as 19 migrants conveyed a desire to start business enterprises of their own. The state-wise position of various options mentioned is given in the following table:

Percentage of migrants choosing possible livelihoods options							
	CG	Orissa	UP	Bihar	Jharkhand	Rajasthan	Total
Farming	0.00	57.63	16.00	59.26	46.67		30.38
Dairy	0.00	5.08	4.00	22.22	20.00		7.17
Labour	61.97	50.85	74.00	33.33	70.00		59.49
Poultry	0.00	0.00	0.00	3.70	20.00		2.95

NTFP	0.00	5.08	0.00	0.00	0.00		1.27
Skilled work	28.17	13.56	24.00	25.93	16.67		21.94
Business/ enterprise	9.86	47.46	10.00	29.63	6.67		21.10
Any other	1.41	5.08	8.00	11.11	3.33		5.06

It needs to be ascertained if the skill-based work, listed by the migrant workers as one of the options, has scope within the village and the surrounding area. It is a welcome sign that as many as 31% mentioned some enterprise – either by way of business enterprise or dairy or poultry. As regards the percentage of migrant workers interested in business enterprise, Bihar comes after Odisha (47.5%) with almost thirty percent opting for some business. Bihar also tops in the choice for dairy at 22%. Jharkhand shows a marked preference for dairy and poultry (20% for each), thus topping the choice for livestock-based occupations.

5 Expectations from the Government and suggestions of the respondents

Respondents were asked to share their expectations from the government or local organisations including non-profit organisations and also their suggestions for improvements in their situation. It needs to be noted that the suggestions were solicited in a period immediately after the loss of livelihoods of the migrants and their return to their villages. Some of the suggestions, therefore, appear to have been influenced by the immediacy of the impact of the pandemic and the lockdown when concerns about food and meeting of expenses were foremost in their minds. In spite of this, monetary assistance till the situation becomes normal was also expected only by a relatively smaller section. The two demands voiced by maximum number of respondents were related to greater availability of wage-based work and the expectation for loans.

a. *Availability of work within the villages:*

Expectation was voiced for availability of higher number of jobs or more wage-based work, including under MGNREGA, to be provided in the villages by almost 44% of the respondents. There were also expectations for higher rate of wages.

b. *Demand for loans:*

The other expectation which was voiced by many respondents was for loans, either crop loans or loans for irrigation, purchase of livestock etc. or for starting some business. The demand for loans was also marked by expectations from some about low or nil interest rate, easy terms of repayment etc. One of the reasons for high number of respondents expecting loans must have been the time at which the interviews were conducted i.e. just before the sowing seasons when the farming community is in need for loans for agricultural operations. It may be added that around 70% of the requirements were for loans below or up to Rs. 50,000/-.

c. *Training for skills and assistance for starting business enterprise:*

An encouraging feature was that there were some respondents expecting training for skills development (including one suggestion for training in use of new technologies such as internet, smartphones etc.). Similarly, some were desirous of financial assistance in starting new business. Though the number of persons with such expectations was limited, it indicated

a desire at least on the part of some of the people to acquire some new skills and / or set up some business of their own. As an example, in Odisha alone, 24% of the respondents showed an inclination to start an enterprise such as kirana shops; tea stall and restaurants; shops for selling of garments, shoes, spare parts etc. besides vegetable vending and cycle marts. Some were also desirous of starting provision of services such as welding, carpentry, tailoring etc.

d. *Expectations about infrastructure, policy reforms etc.:*
There were also a few suggestions voiced for better amenities and for infrastructure as well as for reforms in systems. These related to provision of irrigation facilities, storage, measures for land reclamation (banjar bhumi sudhar) etc. Some of the demands expressed were for establishment of market linkages for their produce including horticultural produce. Besides demands for better prices for agricultural produce etc., there were also a few respondents seeking measures for elimination of middlemen. There were suggestions about starting small processing units for produce such as maize etc. or dairy processing units in villages. Setting up of factories in their regions was also a demand including a demand for reviving a closed spinning mill in Uttar Pradesh.

6 Learnings and pointers to action from the survey

The returning of the migrant workers to their villages in the wake of the pandemic has given rise to many challenges which can be considered as unprecedented. At the same time, the situation has also awakened us to a wide range of new possibilities and has provided the scope to think of various new options.

While the various policy measures and long-term solutions which could be attempted would be discussed in the subsequent sections, a few points which emerged out of the discussions with the various respondents are presented below.

a. First of all, the **public health services need to be activated** to ensure that they are oriented toward provision of quality healthcare to the people. While certain aspects of community health system such as anganwadi and services of ASHA workers are making their presence felt in most of the areas, the provision of medical assistance through Primary Health Centres needs to be made more people-centric. A system of accountability to the people needs to be devised. While the neglect of this important need of the community is evident from a survey of six states, it could be assumed that the services could be more or less similar throughout the country, though the situation in certain well-governed states and states with better public awareness could be better. There should be no need for a person in need of medical aid to approach an unqualified and unauthorised private practitioner in spite of the presence of a public health within a reasonable distance. Civil Society organisations, not just those working in the area of health but also other organisations, should work for enabling the community to demand the delivery of services from official agencies.

b. The widespread demand voiced by the respondents for loans, for agriculture and to a lesser extent for starting a small business, is indicative of the **failure of the mechanism for making formal finance available to all sections of the society** and points out the lacunae in the apparatus for financial inclusion in the country. If one of the objectives of policy in the post-pandemic era would be to reduce the extent of migration to distant

destinations in search of work, provision of finance for running an enterprise or to carry out agricultural operations would be an essential instrument to achieve the objective. It is high time the regulatory authorities and the government, organisations of businessmen and agriculturists, civil society organisations and persons from the media as well as academia come together to discuss the issue and find out solutions to an issue which has not been resolved in spite of decades of various initiatives and policy measures.

c. One of the findings worth noting is that while provision of wage-based work including through schemes such as MGNREGA was demanded by many and that various projects would have to be rolled out urgently under this and other similar schemes, **not all returned migrants would be able to perform work involving manual labour.** Migrants who have worked in cities performing skilled tasks as also those who have done work such as courier delivery or as shop attendants etc. would not necessarily be able to engage in physical labour. Therefore, while planning for provision of work to returned migrants, various other means of providing work would have to be thought of taking into account the diverse capabilities of the migrants. At the same time, the implementation of schemes such as MGNREGA needs to be made more transparent and care has to be taken not to exclude those desirous of participating in the same.

d. **Revival of sustainable agriculture through various productivity enhancing measures** would help obviate the need to migrate for livelihoods. Quite a few agriculturists have demanded provision of irrigation facilities. Water harvesting measures could be initiated immediately. If rabi crops could be harvested in some of the places with some water conservation measures, the need to migrate seasonally for work could be reduced. Some farmers have also demanded arrangements for storage, assistance in market linkages etc. Along with these measures, it is important that environmental degradation is prevented so that agriculture and allied activities become sustainable.

e. **Setting up of processing units for dairy and agricultural produce** was also a demand from some of the respondents. While such initiatives are imperative to ensure development of the region and to provide and improve livelihoods, these may take some time to be set in motion.

f. If it is desired that the returned migrants do not have to go back and should find satisfactory opportunities for livelihoods in their own regions, one of the effective measures would be to provide **support for starting their own business enterprise** to the migrants as well as to the residents. The nature of support could include providing training in technical aspects of various businesses, exposure to entrepreneurial skills and hand holding in running the enterprise at least in the initial period. Imparting knowledge about the various sources of securing the finance required and the requirements for availing of the finance would also have to be arranged for. Setting up micro-enterprises and community enterprises would not need elaborate preparations in most cases and could be expected to commence operations in a relatively short period of time. It should also be recognised that a migrant would have acquired a better exposure to the outside world and would have picked up certain entrepreneurial skills due his interactions with the world of commerce during the performance of his duties. These qualities acquired by a migrant worker would have to be capitalised upon to spur him or her to start a new enterprise.

g. **Training in skills** related to various trades such as plumbing, masonry, tailoring, automobile repairs etc. would go a long way in enhancing livelihood opportunities and improving the income levels of the people. It is possible that the demand for certain skills would be limited in the near future within the areas of residence of the returned migrants. However, since some of the returned workers would certainly be going back to the cities where they worked, it would help if they go back as skilled workers since their services would be in greater demand at the destination centres. It is also presumed that they would be able to earn a higher income, though this aspect needs to be studied and verified.

h. **The question of low aspirations and limited expectations** appears to be the perhaps most serious issue brought out by the discussions during the survey and the responses to some of the questions. In response to the questions on expectations from the government, civil society organisations etc. most respondents have talked of governments providing additional work on wages or loans on easy terms. No doubt a few respondents have spoken of provision of irrigation, storage facilities, setting up of processing units etc. and of policy measures for better linkage to markets etc. Some have also demanded support for setting up their enterprises. However, such suggestions are limited and come from a few respondents. It is a telling observation that no respondent spoke of better facilities for education for their children.

i. The overall approach of being passive receivers of assistance from the government agencies as displayed by the responses discussed in the aforementioned point, is indicative of certain **challenges for civil society organisations**. Does this approach mean that civil society organisations have not been able to kindle the aspirations of people and to make them dream of a much better world? Have civil society organisations even tried to encourage such aspirations or have they been content with providing welfare measures and ensuring that various benefits reach the masses from the government? As a society, we should try to reduce the dependence on government and try to be more active in the role as makers of our own destiny.

A shortcoming of the survey based on telephonic interviews was that discussions could not be held in groups. If that was possible, a question could have been asked as to what they could think of doing collectively for a better standard of living. The value of efforts to ensure that government schemes reach the intended beneficiaries is not being undermined and even these efforts could contribute significantly to the betterment of the lot of the people. However, even in this aspect the people do not seem to be assertive enough to demand accountability from the government agencies for proper delivery of services.

7 Long term measures

The actionable points mentioned above are more or less measures which should be initiated with immediate effect. However, the issues involved are complex and would not be addressed only by short term measures. The situation needs structural changes and long- term measures.

To initiate further action in some of these areas, Rajiv Gandhi Institute for Contemporary Studies (RGICS) have taken up a study of Common Property Resources (CPRs) to develop an inventory and understand the status of these resources and factors behind degradation of the CPRs. The study can be expected to find out ways of preserving these age-old resources which have not only served the community over the years but have also sustained the environment.

As promotion of entrepreneurship could help reduce the need for migration and provide livelihoods to people in their neighbourhood, RGICS have also initiated a project Rajiv Aajivika Samvardhan Abhiyan (RASA) under the Livelihood Revival Support Programme in partnership with various local organisations wherein aspiring entrepreneurs would be supported in setting up micro-enterprises in 25 districts in seven states. The support would include hand-holding besides imparting the requisite initial training. Identification of the potential entrepreneurs to be trained has already been done in some states and is well on the way in others.

These initiatives are only some of the actions initiated by RGICS after the conduct of this and other surveys. These actions would ensure that the surveys do not remain only as passive studies but serve as fuel for constructive action on the ground.

Reviving Urban & Rural India Employment post COVID-19: Introducing the WELL – DONE Framework

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Growth and Enployment Theme

1. The Employment Situation in India - Before COVID and After

This paper is about the strategy for revival of employment after COVID abates and thus will not dwell on public health aspects, and the various effects of the lockdown. We are making the bold and optimistic assumption that the pandemic will subside, and economic activity will restart.

The unemployment situation in India was already a matter of concern before COVID. As per a survey conducted by the National Sample Survey Organisation (NSSO) between July 2017 and June 2018, the Unemployment Rate[1] on a current weekly status (CWS) stood at 6.1 per cent, higher than the previous high point reached in 1972-1973. Thus India recorded the highest unemployment rate in 45 years. As per the Centre for Monitoring of the Indian Economy (CMIE), 11.0 million jobs were lost between Dec 2017 and Dec 2018.[2]

The COVID-19 pandemic has increased the job losses further, impacting the most vulnerable of the Indian population. The Unemployment Rate (UR) as per CMIE showed a steady increase from 4.0 per cent in Apr 2016 to 7.9 in Apr 2019. A sudden spike was witnessed during the first week of the lockdown when the UR soared from 8.7 per cent to 23.4 per cent between 16- 29th March 2020.[3]

The Consumer Pyramids Household Survey (CPHS), a high-frequency household survey conducted by the CMIE, estimated that the no. of employed persons dropped from 411 million persons in Jan 2020 to 396 million in March 2020, the lowest employment levels recorded in 4 years, since the inception of the survey. Tragically, there was a 29 per cent drop to 282 million in Apr 2020. Average employment during 2019-20 was 404 million. Compared to the same average of 2019-20, the fall in April is a massive 30 per cent, which translates into a loss of 122 million jobs.[4] The quantum of job losses, and the on-going trend presents a dreadful scenario of the Labour market.

Note: This paper is based on the WELL (Water, Energy, Land, and Livestock)- DONE (Digital skills for rural diversification, Organised interventions, Non-farm opportunities, and E-commerce) framework. The WELL-DONE framework was conceptualised by Mr Vijay Mahajan, Director, RGICS for Government of Nagaland (GoN) in May 2020 in response to the solutions solicited by the GoN with regard to the livelihood opportunities for those migrants returning to Nagaland due to COVID-19.

[1] **Unemployment Rate (UR)** = Number of **Unemployed** Persons / Labour Force. The labour force is the sum of the **unemployed** and employed persons.
[2] 11 Million jobs lost in 2018, Centre for Monitoring of Indian Economy (CMIE), Sep 2019
[3] Unemployment rate over 23%, Centre for Monitoring of Indian Economy (CMIE), Apr 2020
[4] The jobs bloodbath of April 2020, Centre for Monitoring of Indian Economy (CMIE), May 2020

Refer to Chart 1 below that illustrates the breakdown of the 122 million jobs lost in Apr 2020. It does not come as a surprise that small traders and wage labourers account for most of these losses. They have been the most severely hit during the lockdown with employment declining from an average of 128 million in 2019-20 to 116 million in March 2020 and then, just 37 million in April 2020 representing a steep decline of over 91 million jobs.

Source: Centre of Monitoring of Indian Economy (CMIE), May 2020

Chart 1: Jobs Lost in Apr 2020, by type of Jobs

Larger entrepreneurs, those with fixed assets, have also been impacted severely and have reported large employment losses. 23 per cent of them reported a loss of jobs. This is rather interesting, since a business person usually does not declare a status of being unemployed unless the loss has a degree of irreversibility. A business person would declare being unemployed if she feels that her business is destroyed for all practical purposes. The large scale loss of employment among business persons is an indication that the loss during the lockdown is not limited to just jobs but also enterprises. 18 million business persons are estimated to have lost employment in April 2020. The average count of larger entrepreneurs was 78 million in 2019-20. This fell to 60 million in April 2020.

A similar quantum of loss can be seen among the salaried employees. Their count dropped from 86 million in 2019-20 to 68 million in April 2020. This implies a drop of 21 per cent. Or, one in every five salaried employees seems to have lost jobs during the lockdown. Salaried jobs have not been growing, since they are fewer jobs, and more candidates for these jobs, they have remained mostly in a narrow band of 80-90 million in the past three years. The fall to 68 million is therefore hard. Arguably, and hopefully, the street hawker may return to her beat after the lockdown. Her challenge is to survive the lockdown. However, the challenge for the salaried employees could be to get the job that was lost during the lockdown.

The surprising oddity amongst this jobs bloodbath is agriculture. The count of farmers increased in March and April 2020. The count of farmers increased by 6 million or by 5 per cent in April 2020 compared to the average count of farmers in 2019-20. This, however, is not surprising. When job losses occur in other sectors, people revert to their farms which seem to have an infinite capacity to absorb labour.

1.1 COVID Impact on the Informal Workers

The informal workers make up nearly 90% of India's labour force[5], ranging from self-employed trash collectors to stay-at-home garment embroiderers. The informal market is characterised by minimal Job security with a non-existent safety net. With cities under lockdown, many of these workers are migrating home to villages by the hundreds of thousands, potentially risking their lives, in the absence of food, money and transportation.

This category includes hawkers and daily wage-earning labourers whose livelihood depends on every day in a functioning economy. They eke out a living out from their daily earnings and are therefore the most impacted to the economy shutting down. An estimated 71 per cent of them lost employment. Larger entrepreneurs have also reported large employment losses. 23 per cent of them reported a loss of jobs. The average count of larger entrepreneurs was 78 million in 2019-20. This fell to 60 million in April 2020.

The seasonal migrant workers are now out of work as businesses and establishments have shut down. In the absence of money and jobs, and bereft of any food, savings, or shelter in large cities, they are desperate to reach their villages. But with railway and bus services suspended amid the lockdown till the end of April 2020, there were few options other than simply packing up and trying to walk the often-vast distance back home

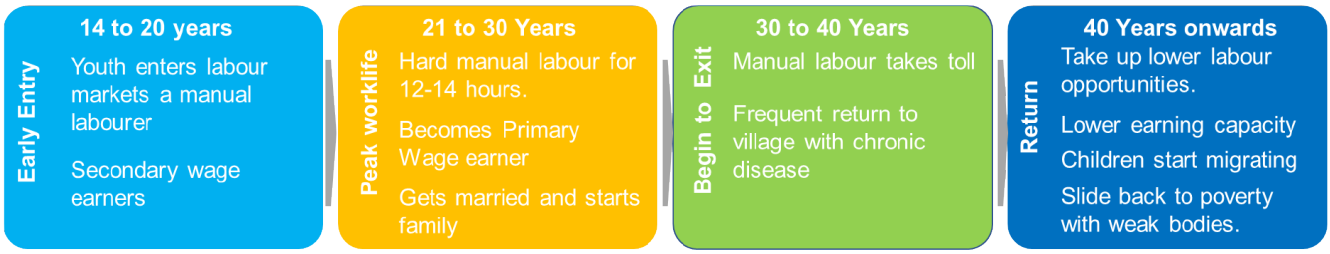

Image 2: Economic Lifecycle of a Seasonal Migrant in South Rajasthan.

Source: Case Study by Ajeevika Bureau, World Economic Forum, 2017

Refer, Image 2 above detailing the economic lifestyle of migrant workers in South Rajasthan[6], this has severe inter-generational implications, transferring vulnerability, poor health and low level of skills from the parents to children. Traditionally these seasonal migrants have low access to health services, which result in very poor occupational health. Since they cannot afford private hospitals, they often go back to their villages once they fall sick. This affects their employment opportunities, as well as the loss of wages.

A large number of migrants find work as unskilled labourers since they enter the job market at a very early age, experience no upward mobility and remain stuck in the most unskilled, poorly paid and hazardous jobs for their whole work-life span. This has severe inter-generational implications, transferring vulnerability, poor health and low level of skills from the parents to children. Skilling

[5] Global Financial Crisis and India's Informal Sector, United Nations Devleopment Program (UNDP), 2009
[6] Krishnavatar Sharma, Ajeevika Bureau, World Economic Forum, 2017

interventions would enable these seasonal migrants to get better opportunities, whether they choose to return to urban areas workers would not like to return to cities or stay back in rural areas.

2. Reviving Rural Employment

If the economy will at least have a U-shaped revival, it will take two fiscal years to reach the GDP level of March 2020 and thereafter grow steadily, we must plan for a slow transition for these workers. But there were already many millions of workers in rural areas, mostly engaged in agriculture, as cultivators or agricultural labour and they also need to continue their employment. Likewise, there were millions of workers in urban areas, who were either long-tern urban inhabitants or some seasonal migrants who did not return. They will also need to get their jobs back. So we deal with each of these three segments separately.

2.1. Rural Workers Who Did Not Migrate

As per the Periodic Labour Force Survey carried out as part of the National Sample Survey 73rd round, in July 2015 to Jun 2016, there were a total of 37.26 workers in India of which 26.59 crore were in rural areas. Their distribution as per different industry sectors of the economy was as follows:

Industry of work	Rural Male	Rural Female
Agriculture	55.0%	73.2%
Construction	14.5%	5.3%
Manufacturing	7.7%	8.1%

In terms of their status in employment, the situation was as follows:

Status in employment of Rural Workers	As % of total
Self-employed	57%
Regular wage/ salaried employees	13%
Casual labour	29%

As can be seen, the largest number were in agriculture and a vast majority of them were self-employed cultivators, but there were agricultural labourers too. As the Covid pandemic lockdown started towards the end of the Rabi harvest, many had difficulty in harvesting, storage, transport and marketing. This has constrained them in terms of funds for sowing the Kharif crop. The main way to support them therefore is to provide crop credit quickly. The government has announced a Rs One lakh crore credit guarantee for agri loans and has also given NABARD Rs 50,000 crore to refinance regional rural banks and NBFCs who give loans to farmers. The agricultural labourers need DBT and PDS support and work in MGNREGA works.

For those who were in construction – mostly wage employed - the employment would come back only when construction revives and one quick way to do this is to use the Pradhan Mantri Awas Yojana, which enables individual households to get government subsidised loans for housing. The major part of the funding must come from banks which are flush with liquidity and they should not hesitate to give housing loans for fear of NPAs, as these are fully secured against the property.

For those who were in manufacturing - mostly wage/salary employed - the employment would come back only when production revives and that will happen when demand revives, as well supply chain bottlenecks are removed.

2.2. Migrant Workers Who Have Returned to Native Villages

According to the Census 2011 reports, the marginal workers and those seeking jobs were estimated at 81 million. Major sources of migrant labourers are states like Uttar Pradesh, Bihar, Uttarakhand, Madhya Pradesh, Rajasthan and Jharkhand.

Major destination states include Delhi, Maharashtra, Telangana, Andhra Pradesh, Punjab and Kerala. Various reports suggest that labourers in large numbers from all across the country are willing to go back to their village. Workers gathering in large numbers during the lockdown in cities like Delhi, Lucknow, and Mumbai indicate that a large population of labourers will anyway go back to their home even after the withdrawal of lockdown.

According to the Ajeevika Bureau, an NGO which has been working with migrant workers from Rajasthan for over 20 years, there are over 100 million migrant workers. It conducted a survey of 285 migrant workers in Ahmedabad and 150 in Surat, in the second half of April 2020, workers without Ration Card were 92% and 99% respectively, without Voter ID 89% and 74% and Electricity Bill 94% and 97%. Thus, migrant workers' lack of access to identity or address documentation meant they could not benefit from several government welfare schemes, leave alone assert their rights for those entitlements.

Exodus of migrant labourers from various cities in India after the announcement of nation-wide lockdown on 25th March 2020 was reported by various media houses. Various experts believe that this exodus will continue even after the withdrawal of the lockdown. By then, many people would have lost their job as the economy is badly affected, the high cost of living in cities makes it difficult for many to continue to be in cities and wait for a new job and finally in the time of chaos and uncertainty people would like to be in their native places with their family and relatives.

COVID-19 has affected 80 million migrants. These migrants have lost their livelihood and most of them are starving in different parts of the country. A large number of them have managed to travel back to their villages. But even in villages, they don't have enough to earn livelihood. The ongoing slowdown of the Indian economy and now lockdown has badly affected the economy. The revival of the economy will take some time, so finding jobs even after withdrawal of lockdown especially in urban areas is not that easy. Now in this difficult situation, the already underemployed rural economy will get additional labourers, who have migrated back to villages.

3. Green Jobs for Employment, Economic Growth and Environment

With over 26 million[7] of the migrant population, likely to stay back in villages, and existing 269 million workers already in rural areas, it seems but obvious to focus on employment generation activities in Rural India. Whilst the suggestion to focus in Rural India appears to be contrary to the popular wisdom of driving growth through urbanisation, it presents a unique opportunity for establishing a large number of "Green Jobs" to meet our international commitments, sustainable growth and meaningful employment through Jal, Jangal and Jameen. With this India can achieve three goals.

- One, it will provide employment and income to millions of resident workers and the migrant labourers who have come back to their native villages.

[7] Estimates based on 2019 Population and Census 2011 Migrant Distribution.

- Two, it will help achieve economic growth as agriculture, animal husbandry and forestry all enhance their productivity and output due to improvements in Jal, Jangal, Jameen
- Three, it will help in mitigating the effects of environmental degradation and climate change and meet international commitments.

Our recommendation for Green Jobs for Rural Migrants are based on:

- Water
- Energy (Renewable & Local)
- Land
- Livestock (Dairy, Fisheries and Poultry)

3.1 Water related employment

Water is an extremely scarce resource, with a UN report estimating that the consumption of water is increasing at 1 per cent every year[8] . Almost 70 per cent of fresh water is utilised in agriculture, stressing the already depleting groundwater resources. Further, inequities in access to safe water, especially in rural areas, force women in developing countries to spend hours every day fetching water, causing an enormous drain on their energy, productive potential and health. The lack of good quality, reliable water puts people's health at risk and may force people to extract water from alternative, unsafe sources, exposing them to diseases such as diarrhoea or dysentery, and typhoid.

Whilst the Government of India launched the Swachh Bharat Mission in 2014, most efforts have been focussed towards making India an Open defecation free (ODF) nation with the construction of over a crore toilets. However, there lies a huge opportunity to create an integrated approach towards Water management, Sanitation and Water conservation that can provide immediate employment opportunities to the distressed migrants.

3.1.1 Conserving Run-off Rainwater - Earthwork and Building Structures

India is extremely water-stressed with 52 per cent of the cropped area remaining without irrigation. Currently, irrigation consumes 84 per cent of the water (industry 12% and households 4%). Further water use in irrigation in India is 2 to 4 times that in USA and China per unit of major crops.[9] With proper infrastructure creation, through the construction of farm ponds, water harvesting structures, small check dams and contour bunding etc., rain-fed irrigation has the potential to contribute to a larger share to food grain production, and generation of livelihood opportunities through MNREGS and PMKSY (Pradhan Mantri Kisan Sinchai Yojana) Schemes.

As per a study for a watershed region in Bundelkhand region, the average employment generated was approximately 70 man-days/hectare. With a potential of over 20 million hectares to be covered under rain water harvesting, one can imagine the employment opportunities that these infrastructure investments could provide, apart from securing the groundwater potential.

3.1.2 Utilisation and Recycling – Water Supply and Sanitation

The World Bank estimates that 21 per cent of communicable diseases in India are linked to unsafe water and the lack of hygiene practices. Further, more than 500 children under the age of five die each day from diarrhoea in India alone. It is estimated that waterborne diseases have an economic burden of approximately USD 600 million a year in India. This is especially true for drought- and flood-prone areas, which affected a third of the nation in the past couple of years.[10] .

[8] World Water Development Report 2019, United Nations, 2019
[9] Revitalising Rainfed Agriculture in India Dr. JP Mishra, Niti Aayog
[10] https://www.unicef.org/india/what-we-do/clean-drinking-water

Post-COVID India is likely to witness an enhanced focus on the availability of clean water, sanitation and hygiene. With 10 per cent of the population not having access to clean water and 40 per cent not having access to hand wash with soap and water, we have an immediate priority looming large, to avoid any further water-borne epidemic post-COVID due to the influx of migrant population, and scarce water resources.

Potential employment opportunities that can be created, are community health workers (especially women) to create awareness on Water, Sanitation and Hygiene (WASH) initiatives, construction of new toilets and drinking water infrastructure created through Government schemes, Public and Private organisations through their CSR efforts. Further Low tech innovations like the Bio-sand Filter, can ensure low-cost access to clean and safe drinking water, whilst promoting employment opportunities in terms of manufacturing, sales, distribution, maintenance and other allied activities.

3.1.3 Environmental Regeneration of Wetlands

The total wetland in India was 15.26 million ha, as per the aerial estimates of national wetland inventory and assessment based on Resourcesat-1 LISS-III data of 2006-07 on 1:50,000 scale.[11] This amounted to 4.63 per cent of the geographic area of India.

Wetlands perform important functions including water storage, flood mitigation, groundwater recharge, water purification, retention of sediments and nutrients and separation pollutants, and stabilisation of local climate particularly temperature and rainfall. Each of these types of wetlands and water bodies suffer from various types of degradation, in particular, encroachment in inflow channels from catchment areas or in the drainage channels, siltation, weed infestation, diversion to single-use such as aquaculture; agricultural, industrial and domestic pollution, and erosion of banks due to sand extraction and other disturbances.

Correcting each of the above problems, will create crores of person-days of employment, mainly for unskilled workers engaged in earthwork, Of course, they would have to supervised on-site by trained supervisors and the works they are engaged in would have to be designed by qualified engineers.

3.2 Energy – Renewable and Local

The focus on renewable energy was articulated by the Prime Minister in 2015 as "Moving from Megawatt to Gigawatt". The GoI has plans for the renewable energy sector to make a quantum jump. The Government has up-scaled the target of renewable energy capacity to 175 GW by the year 2022 which includes, 100 GW (Solar), 60 GW (Wind), 10 GW (Bio-Power), 5 GW (Small Hydro Power).

The opportunity to drive renewable energy outposts in Rural India, appears to be lucrative in the Post COVID era. The availability of surplus-labour, along with creating a renewable energy infrastructure would go a long way to fulfil Mahatma Gandhi's vision for Gram Swaraj – the self-sufficient village republic. With a natural abundance of sunshine, in most parts of rural India, harvesting solar energy through photovoltaic and thermal routes is possible almost in every village.

Renewable energy technologies tend to be more labour intensive than conventional energy technologies. At the same time, distributed renewables such as small-scale hydro, rooftop solar and biomass create maximum employment for every MW of installed capacity. Rooftop solar employs 24.72 persons, small hydro employs 13.84 persons and biomass employs 16.24 persons for

[11] Space Applications Centre, ISRO, Ahmedabad, India, 2013. National Wetlands Atlas, http://www.sac.isro.gov.in

constructing and running a one-megawatt plant.[12] The current status of generation (as on Dec 2019), as per a provisional release by the Central Electricity Authority (CEA) stood at 106 GW (including other Renewable Energy sources). The balance target of 76 GW to be achieved by 2022, will itself enable the creation of an estimated 1.7 million new jobs, with a majority of jobs in Roof Top Solar requiring unskilled and semi-skilled workers, in Installation, maintenance and operations.

Whilst many, but not all, manufactured inputs such as photovoltaic panels, solar lanterns, and turbines for hydropower plants are imported from other countries, however, some upstream linkages through domestic assembly of imported solar components, and batteries are feasible. The recent Government decision announced in May 2020, to ban global tenders under Rs. 200 Crore, is likely to have an impact on China-made Solar panels creating opportunities for locally manufactured Solar panels, which in turn could boost employment.

For improved cook stoves, supply chains are mostly domestic in nature. This is especially true for clay stoves, but in the case of metal stoves, scrap-metal is often imported. Likewise, for biogas plants, the bulk of inputs, especially construction materials, are likely to be sourced domestically.

3.3 Land: Regeneration and Use Diversification

The reverse migration of around 26 million migrants into rural areas, is likely to create a shift in labour supply from agriculture rich states in West & North-West India to less endowed regions in Central and Eastern India. The surplus availability of labour in these areas, in addition to local labour already available, is likely to create additional stress for existing land resources and employment opportunities.

Whilst, Indian agriculture was not immediately impacted, due to sufficient wheat and rice buffers available, and a more than impressive Rabi harvest, it does present a unique opportunity for India to undertake structural reforms in Agriculture to address the traditional challenges of climate change malnutrition, and employment.

3.3.1 Changing Cropping Pattern and Natural Farming

With an inherent policy favouring cereal production, India is the second-largest producer of wheat and rice, next only to China. Cereals accounted for nearly 76 per cent of the total food grain production (as per 2nd Advance estimate 2019-20), whilst pulses contributed a meagre 8 per cent. Amidst a growing health concern on the consumption of rice and wheat, linked to lifestyle diseases, it is a certainty that the supply of cereals would far exceed demand, especially in urban India. The recent surplus of cereals languishing in the government godowns is an early warning of the shift in consumption. A balanced optimisation of food grain production, especially rice could yield the following outcomes:

(i) A shift in consumption of nutritious cereals like sorghum, millet, oats, etc., combined with increased intake of pulses would lead to an improved protein consumption, contributing to a better nutritional balance. The reduced dependence of rice, would relieve undue stress on resources like water, fertilizers and labour.

(ii) Reduced food grain subsidy owing to procurement of Rice and Wheat at MSP, can be utilised to invest in improved quality of agricultural inputs as well as building an infrastructure (cold chain, warehousing, etc.).

[12] Future skills and job creation with renewable energy in India, Council for Enereg, Environment and Water (CEEW), 2019

(iii) The spike in seasonal migrant labour resources, witnessed during wheat procurement and paddy transplantation harvest can be reallocated to food grains with higher value addition.

A post-COVID India is likely to witness a shift in perceptions of the Indian consumer, especially on food safety and hygiene. Whilst the concept of Natural farming (NF) is not new to India, the movement would gain momentum, with more consumers becoming demanding of what they eat and consume. Also, NF, is likely to benefit small and marginal farmers, who could do away with the capital and labour intensive form of Agriculture, thus making food production more competitive and sustainable.

The Government in their budget announcement of 2020 pushed the concept of Zero Budget Natural farming (ZBNF) into the spotlight. Karnataka and Andhra Pradesh have taken early leads in this initiative, with the latter planning aggressively to convert all of its 60 Lakh farmers over the next 10 years.

3.3.2 Value-added Agriculture

There is an inherent shift required from the production of commodities, to a higher value-added product, to enable better prices for the farmer, as well the creation of employment opportunities. A good case in the point is the success of the dairy sector cooperatives, which has immensely benefitted the farmer, through the processing of raw milk into value-added derivatives like Butter, Cheese, Ice cream, Yoghurt, etc.

Simple value adds at the farm level e.g. sorting of vegetables/fruits by visual attributes like size, grade, colour could drive better prices, which would also offset any additional labour and minimal capital employed. Further prices for the value-added product, are likely to be more stable as compared to the price of the commodity (e.g., whilst prices of fruits are likely to fluctuate seasonally, the prices for end product like jam or jelly will remain fairly stable).

Most importantly, the production of the value-added products needs to be inherently driven by the consumer demand, which is the most critical.

3.3.3 Agro commodity Export

Even as land is being treated for enhancing its natural productivity, agriculture will continue. Due to the COVID crisis, there is already talk of significant changes in the prevailing agricultural pattern as we know it. In 2018-19, the latest year for which data is available, India's agricultural exports stood at $18 billion. India is already an exporter of rice, meat, fruits and vegetables, milk products, etc., but shipments have come to a standstill because of the lockdown.

This has added to the problems of farmers, who are already facing a difficulty in selling their produce in the local market. But several industry experts, such as Sanjiv Asthana and Pravesh Sharma, have argued that India should use the COVID crisis to build a bigger position as an Agri commodity exporter, through the extension of the flagship "Make in India" program to Agriculture.

3.3.4 Land regeneration

India is part of the UN Convention on Biological Diversity (UN-CBD). The convention covers protection of biodiversity at all levels – ecosystem, species and genetic resources. In accordance with the commitment of UN-CBD, India has prepared its National Biodiversity Targets (NBT) and

is committed to achieve them. The 20 listed NBTs of India includes reducing rate of degradation, fragmentation and loss of natural habitat, appropriately addressing issues of invasive alien species, sustainable management of agriculture, forestry and fisheries and ensuring genetic diversity of cultivated plants.

India is committed to achieve all above mentioned targets to contribute in global strategies to combat, adapt and mitigate adverse impact of climate change. However, not much has been invested in these sectors. Various schemes for regeneration of natural capital including the Green India Mission are under-funded. An enhanced investment to achieve all above targets and commitments will not only expedite our effort but also generate a huge opportunity of work especially in the rural area.

According to an estimate by TERI in 2018[13] land degradation through various processes in India cost around 2.5 per cent of the country's GDP in 2014-20 . The study of TERI in 2018 estimated total investment required for reclamation of land degraded by five major processes namely water erosion, wind erosion, forest degradation, water logging and salinity. The study found that India requires Rs. 2948 billion (2014-15 prices) to reclaim 94.53 million hectare degraded land as per latest survey by SAC, Ahmadabad. Assuming an increasing in costs since then, we can round this off to Rs 4000 billion in 2020-21. Thus the nation needs to spend Rs 4 lakh crore, or about 2 percent of the 2019-20 GDP to address regeneration of degraded land.

3.4 Livestock-based Employment: Dairy, Poultry, and Fishery

Livestock plays an important role in Indian economy. About 20.5 million people depend upon livestock for their livelihood. Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. Livestock provides livelihood to two-third of rural community and provides employment to about 8.8 % of the population in India. It also plays an important role in the rural economy as supplementing family incomes and generating gainful employment in the rural sector, particularly among the landless labourers, small and marginal farmers and women.

3.4.1 Dairy

Whist India has done reasonably well on milk procurement from the dairy cooperatives, the immediate demand for milk and dairy products has seen a dip, as per reports. It has been estimated that the Rs. 100,000 crore Indian dairy industry has suffered a 25-30 per cent dip in demand ever since the country shut down for the COVID-19 lockdown over two weeks ago. While the first two days did witness a 15-20 per cent surge in demand with consumers hoarding milk, there has been consistent fall in demand from the third day onwards. A large portion of the dip in demand is due to out-of-home consumption, which contributes 15 per cent of the milk consumption.

The post COVID phase may see revival of the Dairy industry, with an increase in demand for protein rich products and dairy based immunity boosters, especially amongst children and the 60 + aged senior citizens.

With investments in the organised dairy sector, including creation of an enlarged cold chain to manage the milk surplus, there are large scale employment opportunities across the value chain (rearing, collection, processing and distribution), especially for women. The Government's budget announcement on the Kisan Rail Scheme would enable double milk production from 54 MT to 108 MT through Indian Railways needs to be implemented on priority. This alone could generate 8-10

[13] Economics of Desertification, Land Degradation and Drought in India, The Energy Research Institute of India (TERI), 2018

million jobs. Further, with additional investments to increase quality and dairy productivity yield, there would be an estimated 1 million new jobs that could be created at source. Also downstream initiatives to extend supply of dairy products to the end consumer, through new Milk booths, dairy parlours, mobile dairy carts would enable creation of at least 3-4 million jobs across India.

3.4.2 Fisheries

Fisheries in India is an important sector of food and nutritional security. It employs over 14 million people and contributes to 1.1 per cent of the Indian GDP. The total fish production during 2017-18 is estimated to be 12.60 million metric tonnes, of which nearly 65% (8.2 Million MT) is from inland sector i.e. fishing in fresh and brackish water and the balance 4.4 Million MT is from marine fishing i.e. fishing in sea water.

As per reports from the Central Institute of Fisheries Technology (CIFT), the Covid-19 lockdown has put the country's marine fishery sector in deep sea, inflicting a daily loss of Rs. 224 crore. The monthly loss for the sector is estimated to be about ₹6,838 crore; with ₹6,008 crore loss attributed to mechanised sector and ₹830 crore for non-mechanised sector.

Apart from the financial losses highlighted above, the other key challenges facing the Fisheries Industry are as follows:

(i) Loss of livelihoods, especially amongst the small scale fishing farmers due to the disruption of supply chain during the COVID lockdown in both inland and marine sectors.

(ii) Unlikely revival of supply due to the 60 days annual monsoon fishing ban, coupled with low demand in the monsoon season is likely to impact fishing livelihoods.

(iii) Migrant job losses, especially in commercial marine sector of Andhra Pradesh, Maharashtra and Gujarat and reverse migration.

(iv) Reverse migration into rural areas, is likely to add further stress on existing fishing livelihoods. The situation in West Bengal and Orissa are further grave due to the devastation caused by Cyclone Amphan in mid-May.

The Government of India has recently announced a Rs. 20,000 crore package under the Pradhan Mantri Matsaya Sampada Yojana (PM-PMSY), focussed on Enhancement of Production and Productivity, Infrastructure and Post –harvest management and Fisheries management, through which it aims to generate further an additional 1.5 million jobs in this sector. Whilst this is a welcome announcement, the PM-PMSY however fails to address the immediate issues and challenges looming large on fishing livelihoods. We spell out a few key recommendations for the immediate revival and rehabilitation.

(i) Lockdown days due to COVID prior to commencement of annual fishing ban to be included in the 60 day period. This would enable an early commencement of fishing, in late May than mid-June.

(ii) Enlarging the scope of work under MNREGS to include skilled work can provide immediate relief. For example, fish drying by women or value addition, processing, net mending can be considered as skilled jobs to be paid under MGNREGS. This will particularly help rural women, including fisher women, who are engaged in a range of tasks for managing the household.[14]

[14] COVID-19 impact on livelihoods of marine fishing communities, M S Swaminathan Research Foundation, Apr 2020

(iii) Compensation for small scale aqua-culture and fishing farmers, who have lost livelihoods due to cyclone Amphan in the states of West Bengal and Orissa. MNREGS to be deployed for the restoration of fish ponds and resources damaged.

(iv) Support to promote Sustainable Land Use (SLA) based aqua culture through community based participations in states with large reverse migrant population, will enable creation of new livelihoods.

3.4.3 Poultry

Poultry has been one of the fastest growing agricultural sectors in India. Whilst the production of agricultural crops has been rising at a rate of 1.5 to 2 per cent per annum, that of eggs and broilers has been rising at a rate of 8 to 10 percent per annum. As a result, India is now the world's fourth largest egg producer and the eighteenth largest producer of broilers. However, the supply chain disruption, as well as negative perceptions of poultry products during COVID has negatively impacted this sector. As per the All India Poultry Breeders Association (AIPBA) the total losses projected was estimated at Rs 22,500 crore beginning February 2020.

With the poultry industry being left out of the government's Rs 20-lakh-crore package, it is imperative that immediate relief is extended in terms of restructuring of loans and 100% interest subvention for two years so that the current credit of about Rs 20,000 crore by the sector does not turn NPAs.

4. Self-Employment for Returned Migrant Workers

In our previous chapter, we gave a detailed perspective on the Green opportunities available in rural areas, well beyond the conventional agricultural farm based occupations. Whilst the focus of the Green jobs was to enable create meaningful and sustainable employment opportunities for the migrants, it is important to mention that there is a wide window open for a variety of non-farm jobs. The underlying theme for this Chapter focusses on the famed Chinese model for non-farm employment i.e. "Leave the farm, not the villages ".

We extend our framework to "DONE" for developing non Agri based opportunities in rural areas, to complement the Green – "WELL" detailed in our previous chapter.

- Digital Skills for Rural Diversification.
- Organised Interventions
- Non-Farm Opportunities
- E-Commerce

Put together – the WELL- DONE framework would articulate itself into potential employment and new opportunities for migrants. We also attempt to spell out few critical skills, which would enable creation of a productive and a competitive work force.

4.1. Digital Enablement

Technology will be all pervasive, in a fast and dynamic world and every activity of the future would include a digital intervention (e.g. Banking, purchases, digital transactions, entertainment, etc.). We currently recommend Basic ICT (Information & Communication Technology) skills that can enable

people in rural areas to communicate, transact, upload and receive information through mobile networks. Later they can also learn future-ready skills or the Industrial Revolution 4.0 Skills (AI, Block chain, IoT, Data Analytics),

With limited capacities and resources to respond to the effects of extreme natural hazards, drought, landslides, floods, and to the impacts of these events on local social systems (e.g. health, infrastructure, transportation, migration), ICT tools will be big boon in a post COVID India. Further, the presence of ICT will enable transparency in governance and reduce information asymmetry, which amplifies as the main reason for poor decision making at farm and non-farm levels.

The penetration of ICT in Rural areas stands at a dismal 9 per cent as compared to 68 per cent in urban areas. To make matter worse, ambitious plans to roll out broadband connections in 2,50,000 Gram Panchayats has been a non-starter. Launched in 2012, the Bharat net project has barely managed to complete 50,000 gram Panchayats, and the balance is expected to be completed only by 2021. An immediate push towards completion would not enable create a strong infrastructure but would also help create immediate employment opportunities in rural areas.

4.2 Organising Producers and Workers

Organised community based interventions have been at the core of livelihood creation for over decades E.g. the famed AMUL cooperative model started off as a collective intervention by a handful of dairy farmers over seven decades ago. The Dairy cooperative today benefits over 10 million farmers across the country.

With millions of migrants returning back to their villages, and seeking employment, it indeed is an opportune moment to look at well-established models like Cooperatives, Self Help Groups (SHGs), Farmer Producer Organisations (FPOs) to create a compelling case for reviving jobs in rural India, especially for women.

4.2.1 Self Help Groups (SHGs)

Amongst the Rs 1.76 lakh crore stimulus package announced by the union finance minister to fight COVID 19, one of the announcements included doubling collateral free loans to women Self Help Groups (SHGs) from Rs 10 lakh to Rs 20 lakh. Reports estimate this will benefit 63 lakh SHGs covering 7 crore families. The measure announced has the potential to have a substantial impact on the rural economy.

Post lockdown, there is an imperative need for economic revival and reconstruction. Each SHG loan sanctioned or enhanced, is likely to facilitate spending or investment- the twin engines for driving an economy. These small loans with much lower default than industry average, have the potential to bring in huge socio-economic transformation. Multiple employment opportunities can be generated through SHGs, e.g., manufacture of face masks, hand sanitizers and other COVID protective equipment.

4.2.2 Co-operatives & Farmer Producer Organisations

The success of the dairy cooperatives to generate employment notwithstanding, there are unforeseen opportunities for cooperatives and Famer Producer Organisations (FPOs) to generate revenue amidst the COVID pandemic. The opportunity to redirect farm supply chains to local areas through commodity based cooperatives will accrue greater benefits by localising supply-chains, lowering

transport costs, offering better-more direct prices to farmers themselves, and also changing the crop-cultivation pattern to localized demands that are part of the community's palate. Since most weekly markets have now been suspended and may also find it difficult to enforce social distancing norms, mobile vans across each district can allow for food supplies in different societies and keep the choice of food offered to be aligned with the local palate and produce. Vegetable vendors too can coordinate directly with these mobile van operators for selling off their stock and supplies. This will also allow for retail distribution to be linked with largely wholesale supply-lines.

4.3 Non-Farm Employment

The common misnomer attributed to Rural India is equating it solely with agriculture and agriculture-allied sectors. The share of agriculture in rural output is a meagre 39 per cent, whereas the rest is contributed by the non-farm sector comprising manufacturing, construction and services sectors. Reducing the dependence of rural masses on agriculture as a source of income will help improve the overall income of the rural population. According to a NITI Aayog report, income per farmer is around one-third of the income per non-agriculture worker. Even with other development parameters improving in the Indian economy over the last few decades, income disparity between agriculture and non-agriculture workers has remained at around these levels.

There has been a substantial growth in employment in the construction sector in rural areas. But, again, construction is a low-paying sector. Improvement in employment in the manufacturing and services sectors will be critical in improving rural income. The manufacturing sector in rural India contributes 18% to rural output, but employs only 8% of the rural workforce. The rural workforce finds it difficult to get absorbed in the manufacturing sector. This is where improving education facilities and skill development programs in rural areas will play an important role.

Some of the potential areas for employment opportunities in the non-farm sector are:

4.3.1 Agro Processing

The agro processing industry is rightly dubbed as a 'Sunrise sector' for the Indian economy. A strong combination of Agriculture and manufacturing, two of the largest pillars that drive the economy, it is expected to grow at 8-9 percent per annum. As per a 2016 MOFPI report the strategic advantages, which include diverse agro-climatic zones, varied soil types and a vast irrigated area, have contributed towards making India the world's second largest Agri- producer, with close to 900 million MT of farm output.

Further, exponential increase in domestic demand for healthier, safer and convenient processed food has resulted in 20 to 30% growth across categories such as value-added dairy products, Ready-to-East/Ready-to-Cook (RTE/RTC) segment, breakfast cereals, and confectionery items and fruit beverages amongst others. The Table below shows some opportunities – segment wise in terms of the value creation.

Segments	Primary Processing	Secondary Processing	Tertiary Processing
Fruits and Vegetables	Cleaning, Cutting, Sorting	Pulp, Flakes, Paste, Frozen, Diced, Canned	Jams, Jellies, Chips Ready to Serve drinks, Indian ethnic drinks
Grains and Cereals	Sorting and Grading	Rice Puff, Flour, baby food(final product/ ingredients)	Cakes, Biscuits, Breakfast cereals, breads, other bakery products, RTC/RTE products

Oilseeds	Sorting and Grading	Oil Cakes, Refined Oils	Soya Oil, Olive Oil, Mustard Oil, Fortified Oil
Milk	Grading and Refrigeration	Packaged milk, Flavored milk, Cream, Milk powder Packaged milk, Flavored milk, Cream, Milk powder Packaged milk, Flavored milk, Cream, Milk powder	Yoghurt, Cheese, Ice cream, Curd, Baby food, other value added products
Meat and Poultry	Sorting and Refrigeration	Chilled/Frozen products	Ready to Eat products
Marine Products	Chilled/Frozen products		Ready to Eat products

According to an 'Assocham Grand Thorton study', the Indian food processing sector has the potential to attract 33 billion USD in investment and generate employment for 9 million persons by 2024. The agro processing Industry also generated 25 per cent employment for women, as per the MOSFI Annual report for 2018-19.

4.3.2 Manufacturing

Employment growth in the manufacturing sector has remained low, and indeed there are prospects of further slowdown as automation takes off even more broadly. Thus in manufacturing, new jobs will get created in agro-processing around agriculturally productive regions (such as the Doaba region of Punjab, Malwa region of Madhya Pradesh and the coastal belt of Andhra Pradesh; and in niche micro-enterprises in rural areas (such as handloom and handicrafts).

Manufacturing jobs can grow in SME cluster towns of which there are about 400 established ones (like Moradabad for brass work and Tirupur for hosiery) if the SMEs here are made more productive and export-oriented. New jobs can also be created by establishing new medium and even large industry clusters based on localization of imported products (such as has already happened for mobile phone manufacturing around Chennai and NOIDA). According to a UNIDO survey of Indian small-scale industry (SSI) clusters undertaken in 1996 (later updated in 1998), there are 350 SSI clusters. Also, there are approximately 2000 rural and artisan based clusters. It is estimated that these clusters contribute 60% of the manufactured exports from India.

Some Indian SSI clusters are so big that they account for 90 per cent of India's total production output in selected products. As for example, the knitwear cluster of Ludhiana. Almost the entire Gems and Jewellery exports are from the clusters of Surat and Mumbai. Similarly, the clusters of Chennai, Agra and Kolkata are well known for leather and leather products. However, the majority of Indian clusters, especially in the handicrafts sector, are very small with no more than hundred workers, so specialised that no other place in the world matches their skills and the quality of their output. This is the case, for example, of the Paithani sarees cluster in Maharashtra.

Whilst the non-farm sector has multiple other key industries, e.g. Handlooms & handicrafts, Transportation, Trade and services which contribute significantly to employment, these industries are highly elastic to demand. With low demand for these industries, the key point is survival, rather than revival. Therefore the inherent focus on high ticket industries like Agro processing, construction and manufacturing that can offer immediate employment opportunities.

4.3.3. Construction

As per a KPMG report, construction projects worth more than Rs 59 lakh crore are under development across the country and most of them have been impacted severely by COVID-19. The construction industry employs around 60 million people, with the informal work force conservatively estimated at around 80 per cent, i.e. nearly 50 million workers. In the construction sector, there are large number of jobs possible in the housing as well lower end infrastructure (rural and district roads, bridges, schools and health centre buildings). With a significant shortage of dwelling units and the need to upgrade existing housing stock, coupled with availability of housing finance from banks and housing finance companies, this sector needs policy attention both from the point of view of employment it will generate during construction and the affordable rental housing stock it will create, which can help workers to settle in small towns.

Front loading of projects under the National Infrastructure Pipeline (NIP) and the Pradhan Mantri Awas Yojana (PMAY – Urban and Grameen), can absorb the construction labour force affected as well as create additional employment in both Rural and Urban areas. The PMAY scheme offers a large number of families across the country an opportunity to purchase a house at a low cost. This is done through interest subsidies. The funds from the scheme can be used by beneficiary families for either acquiring or purchasing a new house or to upgrade an existing kuccha or semi-pucca house. The total houses announced as per the PMAY (Urban & Grameen) scheme announced in 2015 in different phases was 30 million houses (10 million in Urban and 20 million in Rural). The list of beneficiaries under Pradhan Mantri Awas Yojana is as follows:

- Economically Weaker Section (EWS): Families with annual income of up to Rs. 3 lakh.
- Low Income Group (LIG): Families with annual income between Rs. 3 - 6 lakh
- Middle Income Group (MIG): Families within annual income between Rs. 6 - 12 lakh
- Women falling under EWS and LIG income groups.
- Scheduled Caste (SC), Scheduled Tribe (ST), and Other Backward Class (OBC)

Whilst the progress in the initial years was slow, there has been recovery from 2017-18 onwards. We have made conservative assumptions to calculate the pending houses in the program, cost per house and jobs opportunities. The PMAY program can easily employ 45 million people over the next two years.

	Units	PMAY (U)	PMAY (G)	Total
Target (Houses)	Million Units	10	19.5	29.5
Pending /WIP (Houses)	Million Units	2.70	11.00	13.70
Cost/House *	In Rs. Million	0.13	0.16	0.29
Cost of Pending/WIP houses	In Rs. Million	351,000	1,716,000	2,067,000
Jobs/Million Rs. spent **	Nos.	27	21.6	
Job Potential	Nos.	9,477,000	37,065,600	46,542,600

**Cost/House for PMAY (G) is Rs. 0.13 Million. Cost/House under PMAY (U) assumed at Rs. 0.16 Million*
*** Job/Million Rs. Spent taken at 26.9 under PMAY (U) Job/Million Rs spent for PMAY (G) assumed at 21.6*
Source: Impact of Investments in the Housing Sector on GDP and Employment in the Indian Economy', National Council of Applied Economic Research, 2019

The National Infrastructure Pipeline (NIP) announced in Dec 2019, is likely to enable a forward outlook on infrastructure projects which will create jobs, improve ease of living, and provide equitable access to infrastructure for all, thereby making growth more inclusive. NIP includes economic and

social infrastructure projects. The total project capital expenditure in infrastructure sectors in India during the fiscals 2020 to 2025 is projected at over Rs 102 lakh crore. During the fiscal 2020 to 2025, sectors such as Energy (24%), Roads (19%), Urban (16%), and Railways (13%) amount to around 70% of the projected capital expenditure in infrastructure in India. The total expenditure in the NIP is expected to generate employment of 20 million.

4.4. E-Commerce for Accessing Distant Markets

The key to translate good product ideas to as a winning product is to always get the marketing mix in terms of the right product, engaging communication, sweet points on pricing and the right medium to get the entire package across to the consumer. Failure of the right medium or in common marketing parlance the 'Place' would definitely mean the end of a great product concept.

Whilst the context in Rural Marketing has been more spoken in terms of getting across an 'Urban' product to meet the demand of the rural consumer, we would rather look at true Rural marketing in a different perspective i.e. ensuring that a 'Urban' consumer gets to experience a product created in Rural areas. The famed Amul brand is a classic example of a rural produce reaching out to a large 'Urban' audience. Whilst the story of a cosmetic brand selling in rural areas or an Amazon/Flipkart pushing their products in Rural areas makes a good read and headlines, the rational and emotional benefits associated with a 'Make in rural' produce making it big is unparalleled.

The biggest technological boon in recent years, has been the Information and Communication Technology revolution. Whilst there is still a long way to go in terms of basic penetration of ICT in Rural areas, coupled with issues on broadband speed, the new channel on E-commerce that ensures a proper match making between the producer and the end consumer with little or no intermediaries offers immense opportunities in various sectors ranging from perishable farm goods, handicrafts, and local medicinal remedies. A case in the point is the $ 180 Million concept 'Tao Bao' promoted by one the largest E-commerce retailer Alibaba. Taobao Marketplace facilitates consumer-to-consumer (C2C) retail by providing a platform for small businesses and individual entrepreneurs, especially in rural areas to open online stores that mainly cater to consumers in Chinese-speaking regions (Mainland China, Hong Kong, Macau and Taiwan) and abroad.

5. Wage and Self-Employment for Urban Workers

5.1. Start Revival from the Top First

Because the big factories have the greatest capacity to mobilise resources, get approvals, and even revive demand for their products. They will then generate demand for workers, supplies from MSME ancillaries and for related and supporting services. Once the workers come back to big factories and MSMEs, the demand for informal services will revive - eating places, transport, and so on. This will not happen if we start from the lower end of the economy because those units will have no demand. As a lot of people think about this part of the economy, we will not dwell further on it.

5.2. National Urban Supplementary Employment Program (NUSEP)

In the Interim, there is a need to launch NUSEP, through which unskilled and semi-skilled workers can be employed in large numbers in repairs of roads, cleaning or laying of drainage systems, revamping of the utility networks – electricity, gas, water and sewage. Renovation of urban water bodies and

green areas e through tree planting could be taken up in a big way. Rebuilding low-cost housing to decongest slums can be another major urban employment program.

5.3.Solid Waste Management and Recycling

India generates over 62 million metric tons (MT) of waste annually, of which less than 60% is collected and around 15% is processed. India has 1-4 million waste pickers who collect and sell recyclables to earn daily income. Hundreds of waste pickers live and work near waste dumping sites in various parts of big cities. The Municipal Solid Waste Rules, 2016 require segregation of waste, neighbourhood collection and then systematic disposal. The "wet" waste comprising organic material like kitchen waste, fruits, vegetables, flowers and leaves are to be composted. The recyclables like plastics of various kind, such as LDPE, HDPE, PP, PVC and ABS; rubber, glass, aluminium, other metals, etc., are separated and sent for recycling. The hazardous waste is sent for separate treatment as appropriate.

This is all done is what are called Material Recovery Facilities (MRF), which have come up in almost all municipal towns over the last five years.

In the post-Covid recovery phase, urban solid waste should be seen as a source for employment for waste workers and revenue generation for the urban local bodies, through sale of recyclables and compost. A large number of waste pickers can be retrained and employed in household pick up of segregated waste and other can be employed in the MRF. They can be given ID cards and safety gear, and get proper wages and benefits like provident fund and health insurance. In addition a number of skilled workers are needed to employ the pick-up trucks, composting plants, unloading/loading docks and other machinery of the MRF. There are also thousands of jobs in the downstream waste recycling factories. Another benefit is that the improvement in sanitary conditions in congested urban areas considerable reduces the disease burden.

`6. Conclusion

The unprecedented shock to the economy caused by the Covid Pandemic and the resultant lockdown, has to be overcome. In this paper we have focused first on revival of rural employment since rural unemployment was already a big problem even before Covid, and it will get aggravated due to migrant workers who have returned and some of whom may not go back to urban areas. For rural employment we have recommended a green jobs strategy, based on regenerating Jal, Jangal, Jameen – water, forests and land – the three primary natural resources and a focus on renewable energy – mainly solar. Together these will restore the productive livelihoods for rural India in the long run, while providing wage employment in the short-run.

For urban areas, we have recommended the equivalent of NREGA, to repair and build much needed urban network infrastructure – roads, water, essential commodities distribution, and sewage and solid waste disposal. We have argued that there are a large number of jobs in solid waste recycling and what is more, these whole generate revenue for the urban bodies, while cleaning up the urban surroundings.

In short, by following this WELL DONE framework , we can convert the COVID setback into a corrective opportunity to meet the triple objectives of employment, economic growth and environmental improvement.

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RGICS Snapshot – National Digital Health Mission

On 15 August 2020, Prime Minister Narendra Modi announced a National Digital Health Mission (NDHM). NHDM seeks to, among other things, put healthcare data of all citizens on a single database, along with a registry of healthcare providers and healthcare facilities. The stated vision of the NDHM is, "To create a national digital health ecosystem that supports universal health coverage in an efficient, accessible, inclusive, affordable, timely and safe manner, that provides a wide-range of data, information and infrastructure services, duly leveraging open, interoperable, standards- based digital systems, and ensures the security, confidentiality and privacy of health-related personal information."[1]

According to the Future Health Index (FHI) 2019 report, India has been leading in the adoption of digital health technology with 76% of healthcare professionals in the country already using digital health records (DHRs) in their practice. The NDHM is expected to bring all services and service providers under one national data exchange.

The key to NDHM is the proposed unique Health ID or as mentioned in the blueprint document released by Ministry of Health and Family Welfare (MoHFW) in 2019, a Personal Health Identifier or PHI. It is envisaged as the complete digital record of a patient's medical history, practitioners consulted, tests done, etc. The Health ID will be applicable across states, hospitals, diagnostic laboratories and pharmacies. The digital storage and access system is expected to be in the form of a mobile app. The NDHM enrolment is reported to be voluntary, for patients as well as healthcare facilities, and is expected to be mandatory for availing benefit under any government scheme.[2]

Concerns:

Data protection and privacy have emerged as the biggest concern for NDHM. The blueprint document states that authorisation by the concerned individual will precede access to health records. However, multiple nodal points for data creation and usage, brings greater vulnerability given the sensitive nature of the information involved. It is aggravated in absence of a dedicated Data Security and Privacy law for protection of an individual against data theft, misuse and tampering of any digital data created, stored, used and accessed in any government initiative. Other concerns like digital literacy, access of healthcare as well as technology, and awareness of implications of using or sharing data also remain unaddressed.

International Experience

In 2005, the UK's National Health Service (NHS) started deployment of an electronic health record systems with a goal to have all patients with a centralised electronic health record by 2010. While several hospitals acquired electronic patient records systems as part of this process, there was no national healthcare information exchange. The program was ultimately dismantled after a cost to the UK taxpayer was more than £12 billion, and is considered one of the most expensive healthcare IT failures.[3]

[1] National Digital Health Blueprint Report 2019
[2] Firstpost - Narendra Modi launches National Digital Health Mission
[3] Indian Express - Explained: What is the National Health ID, announced by PM Narendra Modi?

Learn More:

Redesigning India's Healthcare Infrastructure and Policy Post COVID – Webinar held on 30th May 2020 - Speakers: Yamini Aiyar of CPR, SY Quraishi, former Union Health Secretary, Mr Alok Kumar, Advisor Health and Nutrition, Niti Ayog, Mr Vijay Mahajan, Director, RGICS and Dr Amirullah Khan, Sr Visiting Fellow, RGICS

Digital Health - Myth or Reality – Webinar held on 30th July 2020 – Speakers: Arun Venkatesan, CEO, Villgro USA (IIEF), Kiran Anandampillai, Advisor (IT) to National Health Authority, Kalyan Sivasailam, Co-Founder, 5C Network, Stan Kachnowski, Chair, Healthcare Innovation Technology (HITLAB - New York), Madhubala Radhakrishnan, Founder & President, mCura, Biten Kishore Kathrani, Head of R&D, Vision Care APAC at Johnson & Johnson, Singapore

RGICS Snapshot – Digital Education in India and National Education Policy 2020

One of the comprehensive shifts in the wake of COVID pandemic has been the shift of school and higher education to internet based, online virtual classrooms. The shift had begun a few years ago with setting up of 'smart' classrooms in schools and colleges, introducing students to satellite education. Going beyond that, education technology industry or EdTech for short in attempt to addressing the systemic challenges in education sector in India, has digitised learning in novel ways, including preparatory coaching for competitive exams. As per a 2017 KPMG report, the online education market in India was USD 250 million in 2016 and was expected to grow to about USD 2 billion by 2021 at 52% CAGR.[1]

The e-learning or digital education sector in India has matured around such initiatives, most often led by social enterprise start-ups in this space. In the process, the focus on vernacular languages and removing other barriers to learning have come in useful during the pandemic induced shutdown of educational institutions. Additionally, building upon the digital education ecosystem in the making, the public sector, at the state and central level, initiated a number of programs for making school education accessible during the pandemic.

The National Education Policy 2020 that attempts to reform both the school and higher education with a focus on future of knowledge and work, also recognises the importance of digital education and technology in realising its objectives. NEP calls for research into mainstreaming digital education and investing in large scale public digital infrastructure to support digital education. Further, it calls for creation of content, standardisation, and teacher training to make digital education a success.[2]

Building on the best practices with the country, such as the Kerala Infrastructure and Technology of Education (KITE), as to the governance of EdTech, the NEP provides for creation of National Educational Technology Forum (NETF). NETF will lead research and innovation in EdTech, and perform functions such as supporting states with technical know-how around hardware and software, procurement and implementation in schools. The NETF is also expected to large scale capacity building of individuals and existing institutions such as Central Institute Educational Technology established in 1984, and number of State Institutes of Educational Technology.[3]

The NEP also provides for a redesigned student learning assessment framework, operationalised through a new national assessment centre called Performance Assessment Review and Analysis of Knowledge for holistic development or PARAKH for short. PARAKH will use data to set benchmarks and strengthen learning outcomes data system by conducting National Achievement Surveys, guide states to do the same.

[1] https://assets.kpmg/content/dam/kpmg/in/pdf/2017/05/Online-Education-in-India-2021.pdf
[2] https://seshagun.gov.in/sites/default/files/update/NEP_Final_English.pdf
[3] Central Square Foundation NEP Analysis

Concerns

While higher education institutions and schools in urban areas have transitioned to digital learning without much hindrance, the schools in rural areas have found it rather difficult to uptake technology at the pace required by the pandemic. There were concerns of network connectivity and access to technology to begin with, and also data usage pushes cost of education higher. Further, not only it is new for pupils to get accustomed to this change, it is equally challenging for teachers. There are bound to be implications for learning levels in the short term.

Learn More

Likely and Desirable Future of School Education in times of COVID 19 – Webinar held on June 12, 2020 – Speakers Dr Alok Shukla, former principal secretary, Education, Government of Chhattisgarh; Chitra Ravi, Founder and CEO Chrysalis Chennai; Sandeep Dutt, Learning Forward India Foundation; and Prof Pankaj Jain, IIM-A and Gyanshala

Digital Education: Remote Learning Initiatives Across India – Report by MHRD June 2020

Challenges and Ways Forward in the sectors of SMEs, Housing for Industrial Workers and Agriculture in Punjab

Yuvraj Kalia, Fellow, RGICS

1 MSMEs in Punjab

The MSME sector in Punjab is characterised by a larger proportion of small and medium enterprises. There is relatively low level of enterprises at the micro scale. For convenience, the SMEs can be divided into two categories. One, which were doing well until as recently as March 2020 and were impacted by the COVID- 19 pandemic. And second, those which have been historically done better and have either reduced in size or closed down over the last few years, largely due to losing the competitive advantage to either domestic or foreign producers. This section concerns largely with the former. Towards the end, it also highlights opportunities to revive and/or create new MSME clusters.

Table 1: Challenges and Suggestions for MSMEs in Punjab

	Challenge	**Way Forward**
1.	**Fall in demand:** This has emanated from the pandemic and subsequent restrictions. Even though manufacturing units in Punjab have started operating, at around 40% capacity utilisation at the most, the demand has yet to pick up for these units to be fully operational.	The state government has very limited role to play in revival of demand, more so for export oriented units. Even for domestic demand is concerned, ensuring cash in hand of consumers will require action by the Central Government. The role of the State Government is efficient implementation of Centrally Sponsored Schemes including DBT, PDS, MGNREAGA, PMAY etc. so that these reach the people and some demand gets stimulated.
2.	**Working Capital:** The disruption in operations and subsequent losses compounded with outstanding loan payments have seriously impacted working capital availability in the sector.	The uptake of the Central government's Emergency Credit Line Guarantee Scheme (ECLGS) and disbursement rate could be improved. Currently around 30% of eligible borrowers have opted out and of those sanctioned (~95%), disbursal have been to only about 44% (July 2020 data). As per the Dept. of Industries and Commerce, the overall amount of loan under ECLGS for 1.65 lakh eligible MSMEs in the state has worked out to Rs 4845 crore. The combined losses of MSMEs for lockdown period till May 2020 were estimated at Rs 4169 cr.

		Note: The ECLGS guidelines now cover enterprises with outstanding loans up to Rs 50 crore with turnover of up to 250 crore in line with revised definition of MSMEs (August 2020). The number of eligible units and total amount shall change. It is not advisable for the state government to underwrite credit advances. At best, depending on health of the exchequer, the state government could give part or full interest benefit for outstanding loans for a period required to achieve a particular level of operations. As a temporary measure, the state government could also make electricity bills staggered based on the capacity utilisation. The units operating at lower level could be sent a concessional electricity bill, whereas those at full utilisation could be charged at full. This could be extended to other utilities and property tax.
3.	**Input Supply chain:** Due to worldwide and domestic restrictions, the input supply chains have been disrupted and access to raw materials/ components has been difficult, pushing cost of up.	The state government could facilitate and ensure availability of raw materials through an arrangement similar to NSIC's Raw Material Distribution Scheme, which distributes aluminium, iron and steel, paraffin wax, and coal. This arrangement could be an SPV with industry participation. This would work best with cluster level industry associations
4.	**Skilled Labour:** The availability of skilled labour in Punjab has been impacted during the pandemic. The return has been seen, the situation is far from normal.	The availability of skilled labour is likely to improve over short term. The labour availability issue, however, needs to be addressed more holistically rather than reactively in short term. Please see section on housing. Social security mechanisms must be put in place to make working in Punjab more lucrative. To begin with, ration card of the home state must be made valid in Punjab, cover under Ayushman Bharat can be extended to skilled manual workers from any state working in Punjab for a minimum period of 1 year.

Opportunities for old/ new MSME units or clusters:

In context of new national push for self reliance, coupled with strategic intentions to replace China as source of imports, the old clusters in Punjab which originally decayed in tandem with increase in competitive imports, largely from China can be revived. The major import categories are Machinery and Mechanical appliance, Chemical Products, Base materials and articles of base materials, and textiles and textile articles, which accounted for 47%, 19%, 9% and 4.3 % of total imports.

In 2017, out of 404 MSMEs in Mandi Gobindgarh Steel rerolling cluster, only 200 rolling mills were operational. It had risen to 250 in 2019 and the production of moulded steel doubled from 1.5 lakh tonnes per month to 3 lakh tonnes a month in the same period (Indian Express). With Mandi Gobindgarh Steel Re-rolling cluster showed signs of revival, along with Machine and metal working clusters in Ludhiana, and advance machining cluster in Mohali, the production of machinery and machine appliances can be taken up. This would require investment in upgrading technology deployed, research and development, with a focus on product development addressing local needs.

With application of semiconductors in new categories of uses, especially high voltage applications such as electric vehicles, solar energy, data centres and 5G base stations, there will be an upsurge in the demand for Silicon Carbide (SiC) based semiconductors. These are better than traditional Silicon based semiconductors in high voltage operation, heat resistance, and reduced size. The Rajiv Gandhi Institute for Contemporary Studies carried out a potentiality study for SiC based semiconductor manufacturing in India[1]. Given that the Semiconductor Laboratory (SCL) already exists in Mohali, a SiC devices based manufacturing ecosystem in India can be established in Mohali.

[1] Available on request from RGICS.

2 Urban Housing in Punjab with focus on Industrial Workers

"The Task Force on Urban Housing Shortage in Punjab" in 2012 estimated housing shortage at 0.39 million dwelling units. According to the National Building Organisation 2015, Punjab had 1.46 million people in slums (2 per cent of India's total slum population). Five cities that have high share of slum population, have been taken up under the PM Awas Yojana -- Ludhiana, Jalandhar, Bathinda, Patiala and Amritsar.

Ludhiana has 209 slum pockets and the slum population growth rate is 25 per cent in contrast to city's annual population growth of 8.75 per cent. Jalandhar has 97 slums that have 25 per cent of city's population. In Bathinda, slum population is 18.68 per cent of the total urban population. In Amritsar 28 slums has 36 per cent of the city's urban population. This indicates explosive demand for proper housing."[2]

Punjab is perhaps one of the very few states, where urban poverty is greater than rural poverty. This largely comprises of migrant labourers from eastern states, who come to Punjab in search of livelihoods, and is concentrated in the biggest cities of Punjab. Faced with untenable living conditions, it is going to be a challenge for the state to obtain and retain manual workers to support its urban economy in the future.

To kickstart the urban economy after the slump due to COVID pandemic, and to retain manual labour in the long run it is imperative to provide affordable and tenable rental housing as close to the source of livelihood.

The master plans of all major cities in Punjab have earmarked areas for residential and industrial activity. The areas of current and planned industrial activity have scattered residential areas within, which are villages lying in the industrial zones. The first target for construction of affordable rental housing could be these areas. Alternatively, patches of non-culturable wastelands around these areas can be identified.

As to financing, process of land acquisition can be born by the government, and cost of construction can be financed by the private builders. The investments can also be made by cooperatives of the original owners of these lands, who stand to lose their lands to residential purposes. (This model is known as the Magarpatta model, which was tried very successfully in Pune).[3] Alternatively, bank financing can be utilised by local residents for construction with interest subvention from the under the PM Awas Yojana (PMAY). The Punjab Budget for FY20-21 had already provided Rs 293 crore for PMAY (urban for FY20-21.

This combined financing method to construct medium rise affordable rental housing for manual workers can be a source of funds for the local governments in these villages, a source of income for the current residents. Moreover, the industrial workers and their families will get access to basic social infrastructure required for human development. As it is, industrial workers live in these areas but in poor conditions while paying a non uniform rent to landowners.

Land areas with little or no agricultural activity can be targeted owing to lower cost of land acquisition. A high speed mass transit infrastructure can be established on on PPP/ DBFOT basis with long term concession period, to connect the residential area to the industrial zone and the rest of the city. This

[2] https://www.cseindia.org/punjab-faces-the-daunting-challenge-of-meeting-housing-requirements-of-the-urban-poor--8701
[3] https://www.academia.edu/35684466/Magarpatta_City_Pune_India

allows a phased development of the proposed industrial zones, wherein utilities and infrastructure reach the planned areas simultaneously.

Example of Ludhiana: In Fig. 1 below, a portion of Ludhiana's industrial zone in the master plan is depicted. The green belt visible in the image is the Mattewara forest. The Government of Punjab has already acquired 100 acres of land near the forest for proposed Cycle Valley project and payments to the tune of Rs 120 crore have been made to the concerned panchayats. The GoP is well on its way to acquire 1000 acres nearby for Ludhiana Industrial Park project, of which 47 acres have already been acquired from two villages. The payment of around Rs 8 crore has been made to the concerned panchayats. The land can be earmarked for affordable housing from within the land already acquired close the residential zones, or additional land can be acquired for this purpose.

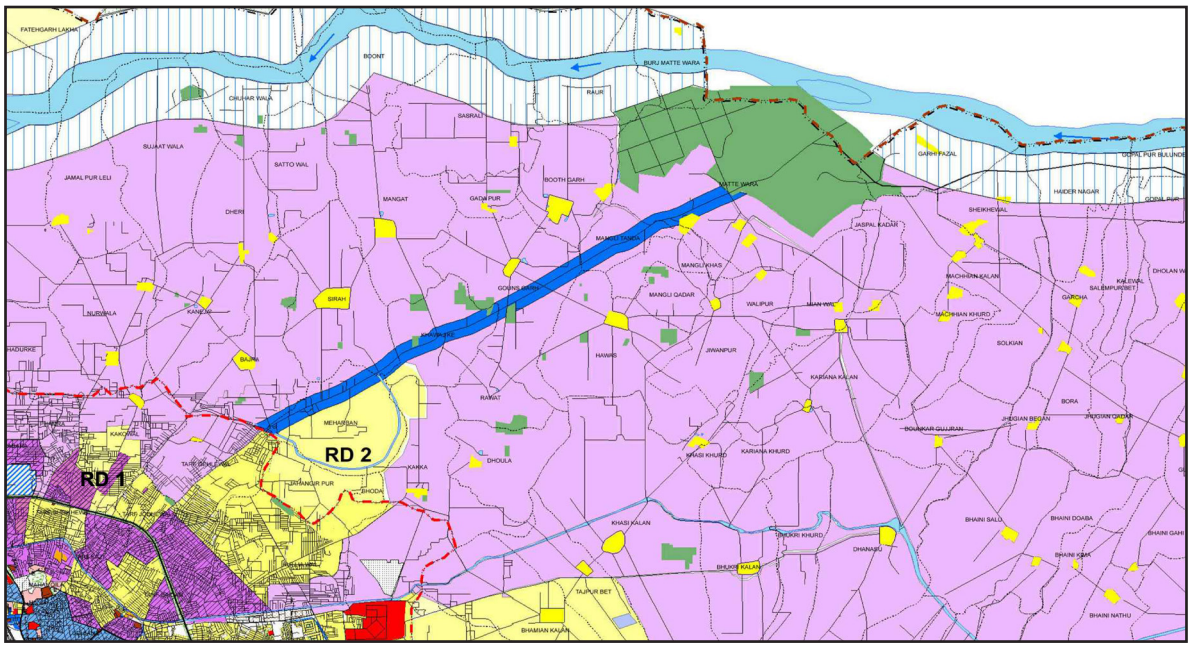

Fig. 1 Industrial Zone (purple) in Ludhiana with residential/ villages (yellow) in the Ludhiana Master Plan 2031 (PUDA)

3 Agriculture in Punjab

Agriculture has been the mainstay of Punjab's economy, and is most likely to be the way out of the pandemic induced economic slump in the medium term. Low investment in value chain, low capital formation, plateaued yields, highly depleted groundwater, and high chemical and low microbial content in the soil, high input costs and diminishing incomes are a few characteristics of agriculture in Punjab. What is required is a strategy to diversify cropping, limit exploitation of water, reduce usage of agrochemicals (highest in the country), and reorient the agriculture ecosystem towards wellness instead of survival. Wellness for both consumer as well as the producer.

The major challenge to diversification is assured procurement of rice and wheat. While wheat is suitable to the state's agro-climatic conditions, paddy is not. The alternative to assured procurement is assured market. The southern districts of Bathinda, Mansa, Muktsar, Sangrur, Barnala, Faridkot, Moga and Firozpur, or almost the entire Malwa region has significant area under cultivation of cotton, a cash crop. Of these districts, in Bathinda and Mansa, paddy was at third rank in terms of value of

production and cotton was at second in 2010-11. In Firozpur, Muktsat, Faridkot, Sangrur and Barnala, cotton was third. Cotton and paddy both consume high levels of pesticides, which is often correlated to high incidence of cancer in these districts. The area under horticulture in Bathinda, Mansa, Muktsar was at 0 ha (zero) and only 40 ha in Sangrur as per 2004 data. (All data from PUNENVIS). These districts present a low hanging opportunity to begin the diversification in Punjab and introduce cash crops, such as fruits, vegetables, and flowers. The assured market in in place from major urban agglomerations of Chandigarh tricity and Delhi NCR.

What is required at the onset is investment in on farm technology and equipment in terms of polyhouses, drip irrigation, underground pipes; farm gate infrastructure like cold storages, reefer vans etc.; and processing facilities in these districts. Shifting to horticulture could be supplemented with animal husbandry, as residue from horticulture is healthy organic feed for animals, and animal waste acts as a fertilizer on farm, further enriching the wellness agenda.

To facilitate this process of transformation, organising farmers into FPOs is very crucial. Apart from input expenditure rationalisation, FPOs bring much needed market linkages, discover best prices, reduce transaction costs and build long term sustainability of the ecosystem. These solutions can be piloted in Bathinda and Mansa as a first step, since the farmers there are not locked into the paddy-wheat crop cycle but have cotton cash crop experience.

Additional steps can be taken to reduce ground water exploitation all over the state. Since 2018, GoP has been implementing a scheme called "Paani Bachao Paisa Kamao (PBPK)" to incentivise farmers to use water and electricity more efficiently without retracting free power to agriculture policy. The scheme is an alternative model of DBTE to agriculture as electricity saved by the farmer (agriculture consumer) is monetised and cash transferred to the bank account of the consumer. This scheme is being implemented in phased manner and could be scaled up given enough data on effectiveness must be available with GoP form 6 feeders in 3 districts in phase 1 and 250 feeders in 11 districts in phase 2. [4]

[4] https://www.youtube.com/watch?v=qs15zsH7q2M&feature=youtu.be

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