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

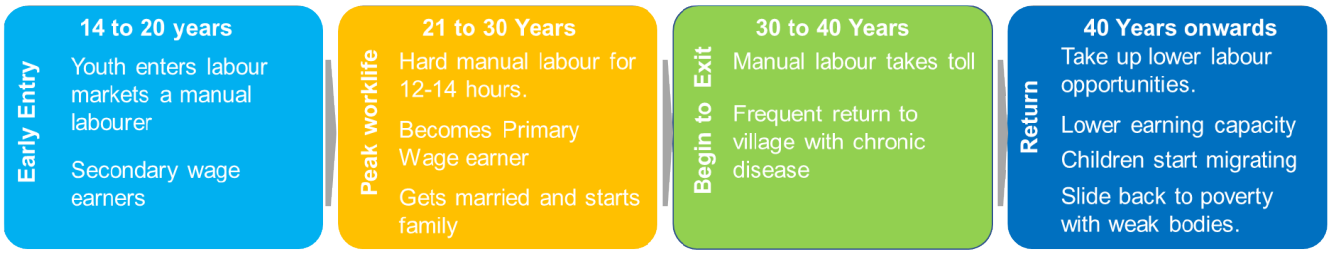

Image 2: Economic Lifecycle of a Seasonal Migrant in South Rajasthan.

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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