

പതിനാലാം കേരള നിയമസഭ

പതിമൂന്നാം സമ്മേളനം

നക്ഷത്രചിഹ്നമിടാത്ത ചോദ്യം നമ്പർ .2022

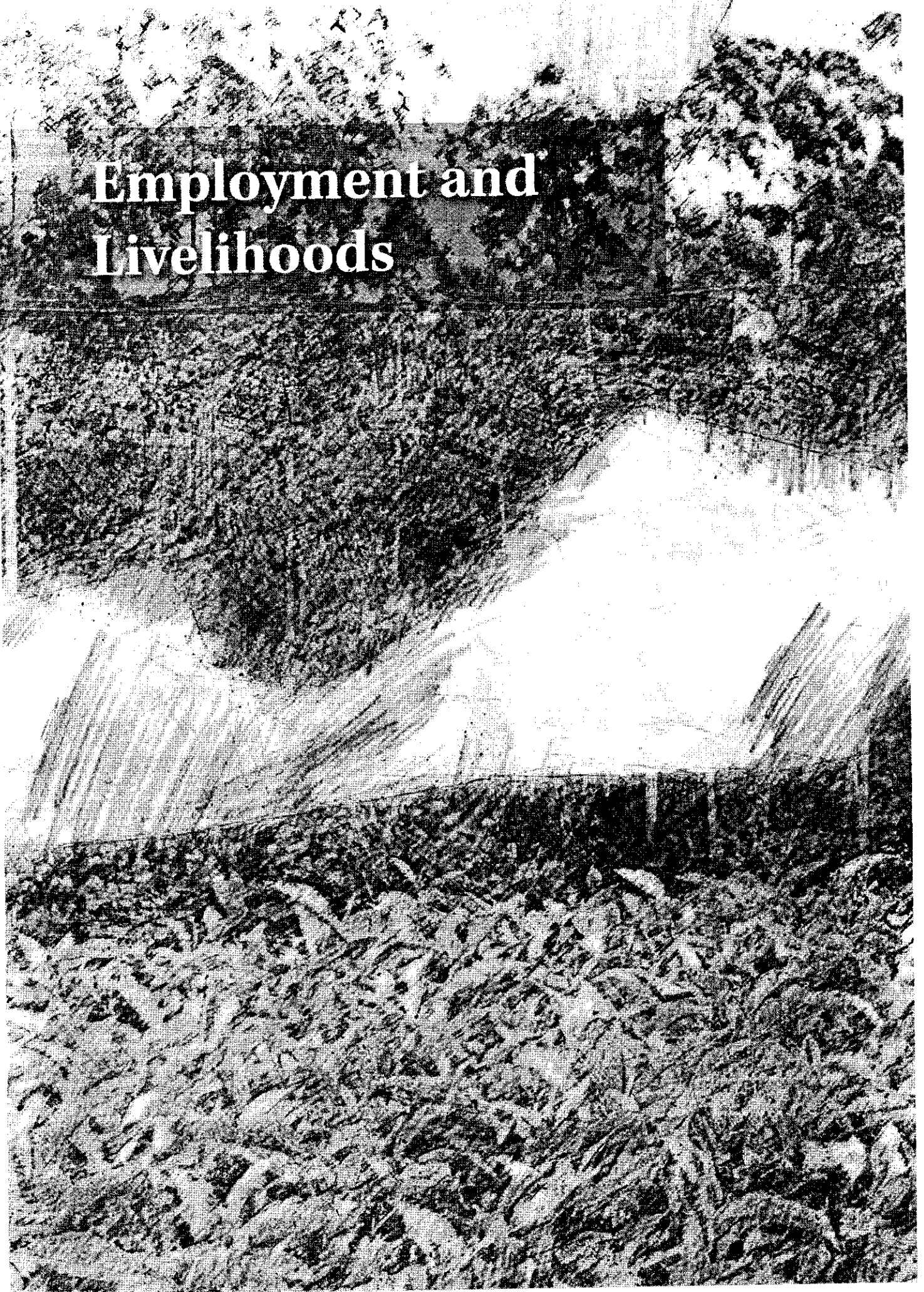
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പ്രളയക്കെടുതി നേരിടുന്നതിന് ധനസമാഹരണം

	ചോദ്യം		മറുപടി
	ശ്രീ.കെ.ജെ. മാക്സി		പിണറായി വിജയൻ (മുഖ്യമന്ത്രി)
എ)	സംസ്ഥാനത്തെ പ്രളയക്കെടുതിയിൽപ്പെട്ട ജനങ്ങൾ എത്ര, കൃഷിനാശം എത്ര, തകർന്ന പാലങ്ങൾ എത്ര, തകർന്ന പൊതുമരാമത്തുറോഡുകൾ എത്ര, പഞ്ചായത്തുറോഡുകൾ എത്ര; ഇവയിലൂടെ സംസ്ഥാനത്തിനുണ്ടായ നഷ്ടം എത്ര കോടി എന്നും വ്യക്തമാക്കുമോ;		ഐക്യരാഷ്ട്ര സഭയുടെ പോസ്റ്റ് ഡിസാസ്റ്റർ നീഡ് അസസ്സ്മെന്റ് (Post Disaster Need Assessment-PDNA) റിപ്പോർട്ട് പ്രകാരം പ്രളയകാലത്തെ സംസ്ഥാനത്തിന്റെ മൊത്തം നഷ്ടം 26,718 കോടി രൂപയായാണ് കണക്കാക്കപ്പെട്ടിരിക്കുന്നത്. കേരളത്തിന്റെ പുനർനിർമ്മാണത്തിനായി 31,000 കോടി രൂപയെങ്കിലും വേണ്ടി വരുമെന്നാണ് PDNA റിപ്പോർട്ട് കണക്കാക്കുന്നത്. പ്രസ്തുത റിപ്പോർട്ടിന്റെ പ്രസക്ത ഭാഗം അനുബന്ധം-1 ആയി ചേർക്കുന്നു.
ബി)	പ്രളയക്കെടുതിയിൽപ്പെട്ട മരാമത്തുറോഡുകൾ, പഞ്ചായത്തുറോഡുകൾ, ജലവിതരണം, കാർഷിക അടിസ്ഥാന സൗകര്യം, തീരസംരക്ഷണം, സർക്കാർ കെട്ടിടങ്ങളുടെ പുനർനിർമ്മാണം, ആരോഗ്യമേഖല, പ്രകൃതിസംരക്ഷണം, വീടുതകർന്നവരുടെ പുനരധിവാസം എന്നിവയ്ക്കായുള്ള പുനർനിർമ്മാണചെലവ് എത്ര എന്ന് വിലയിരുത്തിയിട്ടുണ്ടോ; വിശദാംശം ലഭ്യമാക്കാമോ;	എ) & ബി)	
സി)	അന്താരാഷ്ട്ര ഏജൻസിയായ കെ.പി.എം.ജി.യു. ലോകബാങ്കും ഏഷ്യൻ വികസന ബാങ്കും പുനർനിർമ്മാണത്തിനു വേണ്ടി കണക്കാക്കിയ തുക എത്ര; ഇതിൽ വീടുകളുടെ പുനർനിർമ്മാണം, കടകൾ, കൃഷിവിളകൾ, ജീവനോപാധികൾ എന്നിവയ്ക്കു കണക്കാക്കിയ നഷ്ടം എത്ര എന്നും സംസ്ഥാന സർക്കാർ അംഗീകരിച്ച തുക എത്ര എന്നും ഇതിനായി കേന്ദ്ര സർക്കാരീനോട് ധനസഹായത്തിന് അനുമതി ആവശ്യപ്പെട്ടത് എന്ന് എന്നും തുടർനടപടി എന്ത് എന്നും വ്യക്തമാക്കുമോ?	സി)	ലോക ബാങ്കിന്റെ JRDN റിപ്പോർട്ട് പ്രകാരം ആകെ 24,893 കോടി രൂപയാണ് പുനർനിർമ്മാണത്തിനായി ആവശ്യം. ലോക ബാങ്ക് റിപ്പോർട്ടിന്റെ ശീർഷക പിരിവ് അനുബന്ധം - 2 ആയി ചേർക്കുന്നു. സംസ്ഥാനത്തിന് വായ്പ വാങ്ങാനുള്ള പരിധി മൂന്നു ശതമാനത്തിൽനിന്ന് നാലു ശതമാനമായി ഉയർത്തണമെന്ന് ആവശ്യപ്പെട്ടു. നബാർഡിൽ നിന്ന് 2500 കോടി രൂപയുടെ വായ്പ അനുവദിക്കണമെന്നും, ലോക ബാങ്ക്, എ.ഡി.ബി തുടങ്ങിയ സ്ഥാപനങ്ങളിൽ നിന്ന് വായ്പ ലഭ്യമാക്കണമെന്നും ആവശ്യപ്പെട്ടു. വിവിധ വകുപ്പുകൾ മുഖേനയുള്ള കേന്ദ്രാവിഷ്കൃത പദ്ധതികളുടെ ധനസഹായം 10 ശതമാനം വർദ്ധിപ്പിക്കണമെന്ന ആവശ്യവും മുന്നോട്ടു വെച്ചിരുന്നു. കേരളത്തെ സഹായിക്കാൻ സെസ് ഏർപ്പെടുത്തണമെന്ന് കേന്ദ്ര

		<p>ജി.എസ്.ടി കൗൺസിൽ യോഗത്തിൽ ആവശ്യപ്പെട്ടു ദേശീയ ദുരന്ത പ്രതികരണ നിധി മാനദണ്ഡമനുസരിച്ച് കേരളം ആവശ്യപ്പെട്ടത് 5616 കോടി രൂപയുടെ പുനരധിവാസ ധനസഹായമാണ്. ആദ്യഘട്ടത്തിലുണ്ടായ പ്രളയത്തിന് 820 കോടിയും രണ്ടാംഘട്ടത്തിലെ മഹാപ്രളയത്തിന് 4796 കോടി രൂപയും ഉൾപ്പെടെയാണിത്. ഇതുകൂടാതെ, പ്രത്യേക ധനസഹായമായി 5000 കോടി രൂപയുടെ പാക്കേജം ആവശ്യപ്പെട്ടിരുന്നു. സൗജന്യമായി അരിയും മണ്ണെണ്ണയും നൽകണം എന്ന് ആവശ്യപ്പെട്ടിരുന്നു. ദേശീയ ദുരന്ത പ്രതികരണ നിധിയിൽ നിന്നും 600 കോടി രൂപ നൽകി. അരിയും മണ്ണെണ്ണയും 265.74 കോടി രൂപ സംസ്ഥാനത്തിന് നൽകുന്ന ദുരന്ത പ്രതികരണ നിധിയിൽ നിന്നും വില ഈടാക്കും എന്ന വ്യവസ്ഥയോടെ നൽകി. മഹാത്മാഗാന്ധി ദേശീയ ഗ്രാമീണ തൊഴിലുറപ്പ് പദ്ധതിയുടെ കീഴിൽ ഗ്രാമവികസന മന്ത്രാലയം അധികമായി 50 തൊഴിൽ ദിനങ്ങൾ 2018-2019 സാമ്പത്തിക വർഷത്തിൽ അനുവദിച്ചിട്ടുണ്ട്. ദുരന്ത ബാധിത പ്രദേശത്തെ സ്വകാര്യ മേഖലയിലെ Micro, Small and Medium Enterprises (MSME) സ്ഥാപനങ്ങളുടെ നാശനഷ്ടം ആഘാതം ലഘൂകരിക്കുന്നതിനുള്ള ചട്ടങ്ങൾ പ്രകാരം നിലവിലെ കടം MSME സ്ഥാപനങ്ങൾക്ക് പുനർക്രമീകരിക്കുകയും, പ്രവർത്തനം പുനരാരംഭിക്കുവാൻ പുതുതായി കടം നൽകുവാനും വേണ്ട നടപടി സ്വീകരിക്കുവാൻ കേന്ദ്ര ദുരന്ത നിവാരണ അതോറിറ്റിയോട് സംസ്ഥാന അതോറിറ്റി ആവശ്യപ്പെട്ടിരുന്നു. ഈ ആവശ്യം കേന്ദ്ര ദുരന്ത നിവാരണ അതോറിറ്റി പരിശോധിച്ച്, കേന്ദ്ര ഫിനാൻസ് വകുപ്പിന് നിർദ്ദേശം നൽകുകയും, ഈ നിർദ്ദേശം പരിഗണിച്ച് കേന്ദ്ര ഫിനാൻസ് വകുപ്പ് രാജ്യത്തെ എല്ലാ ബാങ്കുകൾക്കും നിർദ്ദേശം നൽകുകയും ചെയ്തു.</p>
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Employment and Livelihoods





Employment and Livelihoods

Summary

The total damages in the employment and livelihoods have been assessed at INR 881 crore, including INR 509 crore damage in tourism, INR 359 crore in MSME and INR 13 crore in Kudumbashree and coir. Total loss is estimated at INR 9477 crore including wage loss of INR 7301 crore and inventory loss of INR 2176 crore. This puts the total damage and loss of the sector at INR 10,358 crore.

Total person days of employment lost works out to 1097 lakh along with a wage loss to the workers estimated at INR 7301 crore. Two-thirds of the migrant workers, estimated at 22.7 lakh also, lost their workdays during the floods, amounting to an estimated wage loss of INR 2,033 crore.

While state income loss and wage loss relate to the economy, the real loss of wages was for the casual labourers or the self-employed. A portion of regular workers also stood to lose because of their informal nature of their employment. This has implications for the livelihoods of a major proportion of the workforce.

At the minimum, Kerala economy lost 2.6% of its annual income due to floods, excessive rains and landslides. This estimate would go up to 6.6%, if the potential damage to the agricultural sector were considered. However, the Centre for Development Studies (CDS), Thiruvananthapuram, on a conservative estimate, projects reduction of GSDP growth rate of 1.27% in current prices and 1.23% in constant prices in 2018-19 in the state.

Two recovery needs have been worked out. The first, with a total requirement of INR 3,896 crore, is part of the overall recovery needs assessment of this report.

The second is an additional need for an employment-linked eco-restoration plan (for restoring natural capital) with an outlay of INR 23,065 crore. This involves leveraging MGNREG Scheme by adding 53 days to the existing average of 47 days per annum (making it a total of 100 days) of employment for the existing 13 lakh job card holders. This means 73% of the cost will be borne by the central government. Another 3% can be added by leveraging central schemes for skill development. The net impact on the state government would be 24% or INR 5,600 crore for five years, i.e., INR 1,120 crore per annum.

For the self-employed, especially those in the livelihood sector including Kudumbashree, financial assistance in the form of grants and interest-free loans is recommended for replacing capital.

This calls for creating 'Green Jobs' (with a low carbon footprint than at present) based on the principles of environmental sustainability and cost effectiveness. Skill development would be a critical component, both in the recovery period and beyond.

Pre-Disaster Context: Employment Profile of Kerala

While the physical damage and income loss received much attention in the public discussions post the Kerala Floods 2018, the employment impact did not receive as much focus as it should have. Employment is the means by which the majority of the people meet their livelihood requirements and Kerala is no different in this respect. For the poorer sections of the population livelihoods are sustained by resorting to a variety of employment and non-employment mechanisms. This makes it crucial for us to understand the employment and livelihoods profile of the people of Kerala, to provide a background to the assessment of the impact of floods and the reconstruction programme. The core principle deployed in the reconstruction plan is based on the concept of 'Build Back Better' (BBB) for a new, environment-friendly Kerala by promoting Green Jobs. Kerala's ecological endowments along with its habitat pattern provide a solid foundation for much of its economic activities, be it agriculture, livestock, fisheries, agro-processing industries, sourcing construction materials, water transport or the much acclaimed tourism. One is not sure whether there is adequate recognition, let alone conscious incorporation, of the 'natural capital' function of Kerala's environment.

To understand the employment profile we look at the number of workers and the workforce participation rate (employed as a share of total population). While the work force increased from 102 lakh persons from 1983 to 131 lakh in 2005, it declined to 127 lakh in 2012. This is mainly due to the increased enrolment in education of women in age group 15-24. Part of it was also caused by the withdrawal of women from the labour market due to the migration of their spouses to Gulf countries. There could also be a proportion of 'discouraged persons', especially women who opt out of the labour market due to lack of opportunities. Given this trend and the negative rate of growth of persons in age group 15-19 as a result of demographic transition, it is unlikely that Kerala has added to its work force in 2018. This is borne out by the continuing growth in migrant labour from outside which we shall examine separately.

Kerala is a state which reports a high rate of unemployment. At the same time it has a migrant workforce of 34.85 lakh from other states that is equivalent to 25% of its labour force¹. On the other hand it has an emigrant workforce (mostly in Gulf countries) of 22-24 lakh that is equivalent to 16%-18% of its labour force². This may look paradoxical, but would make sense viewed from a larger developmental point of view. Kerala's younger generation has higher educational attainments: so much so that the proportion of those who have at least a secondary school pass in age group 15-40 years in the labour force is 51% for males and 69% for females as against the national average of 39% and 24% respectively (as of 2012)³. This has led to a shift in preference in the kind of work sought, leading to a situation of educated unemployment. It is this phenomenon that has given rise to in-migration of labour (mainly young men) from outside the state, predominantly for casual manual work. There is no reason to believe that this scenario has changed. However, there could be a segment of 'discouraged women' who are not seeking work, and hence, are not counted in the labour force. In addition, there are women who combine domestic work with economic activities but describe themselves as 'housewives', and hence, are not counted in the labour force. This was evident in a study on Kudumbashree (see Kannan and Raveendran 2017) where 54% of women Kudumbashree members⁴ reported as 'engaged in economic activity' but their average hours of work per day varied between only 3 to 5 hours. This is roughly 14 percentage points above the work participation rate for a similar age group as per NSS 68th Round (2011-12)⁵. But the percentage engaged in 'any economic activity' among the Scheduled Tribes was 69% and 64% respectively, indicating a comparatively poorer economic condition.

¹ A study by Gulati Institute of Finance and Taxation estimated a stock of migrant workforce in Kerala of 25 lakh in 2012 with an estimated annual growth rate of 6.8 per cent. For details see, Narayana, D. and C.S. Venkiteswaran (2013).

² Labour force here is defined as the proportion of workers plus those seeking work out of the total population. According to the Kerala Migration Surveys carried out by the Centre for Development Studies, Trivandrum there were an estimated 18 lakh Keralites working outside India in 1998 that went up to 24 lakh in 2011 and then declined to 22 lakh in 2018.

³ For the entire labour force of 15 years and above these percentages are 43 for males in Kerala (34 for India) and 53 for females (18 for India). The lower percentage for Kerala males compared to its females could be due to the emigration of educated men to other parts of India and abroad.

⁴ 99 per cent of Kudumbashree members were found to be in the age group of 25 years and above.

⁵ This gives us a rough idea of the percentage of women working for some part of the day but not netted in the official surveys due to self-reporting and/or low average work hours.

All these three categories (the unemployed + the discouraged workers + those available for part-time work) may be reckoned as a reserve army that could be usefully deployed in the reconstruction of Kerala, especially at the local level, with adequate training for skill development and investment in appropriate technology to create what we call 'green jobs' (see Box).

A summary of the employment-unemployment profile as per official definitions is given in Table 1.

Post Disaster Effects

Estimation of loss to the Kerala economy

From a state level macroeconomic perspective, the economic impact of a disaster like the Kerala Floods 2018 can be broadly divided into (i) asset damage/loss, and (ii) income loss. While the asset loss (either due to damage or loss or both) refers to the depletion in stock of capital, income loss refers to a flow that occurs in a given period. These two have different employment implications. In the case of asset loss future employment is adversely affected based on the time needed to replace the stock. In the case of income loss there is the loss of current employment. In some situations, especially in restoring the natural capital (land and water bodies), there is the opportunity to create new employment. Given Kerala's imperative to move towards an environmentally sustainable path (Green Economy) the new employment should be transformed into 'green jobs'.

Table 1
Labour and Employment Profile of Kerala 2011-12

Category	Men	Women	Total
Total Labour Force (lakh)	93.4	42.3	135.7
Total Workforce (lakh)	90.7	36.4	127.1
Total Unemployed (lakh)	2.7	5.9	8.6
Labour Force (LF) Participation Rate (%)	57.5	24.0	40.1
Workforce Participation Rate (%)	54.6	21.4	38.1
Unemployment rate (%)	2.9	14.1	6.4
% of persons with at least secondary level education among the unemployed	82.2	87.3	85.7
LF with at least Secondary level education (%)	42.5*	53.1	45.3
Younger LF (15-40 years) with at least Secondary level education (%)	51.0	69.4	57.2
LF with at least Graduate level education (%)	11.9*	20.6	14.7
Younger LF (15-40 years) with at least Graduate level education (%)	13.2	29.5	18.7

Source: Computed from unit level data of National Sample Survey 68th Round.

Note: *The lower percentage of men compared to women in these educational groups could be due to the emigration of a large number of educated workers to foreign countries (especially to Gulf countries).

Green Jobs

Green jobs are those that not only contribute to the production of goods and services that are less environmentally harmful (e.g. low carbon footprint or local environmental damage) but also use processes that are more environment friendly. For example, a building is often called 'green' because it uses solar energy and more energy efficient equipment for its function. But it can be called 'green' only if it is also built from materials with a lower carbon footprint and without adverse environmental consequences for the local surroundings.

According to the International Labour Organisation (ILO) green jobs help (i) limit greenhouse gas emissions, (ii) protect and restore ecosystems, (iii) minimise waste and pollution, (iv) improve energy and raw materials efficiency, and (v) support adaptation to the effects of climate change (ILO 2016). The ILO advocates increasing efforts to maximise what it calls 'green jobs' based on decent employment, along with green processes resulting in green products and services. Its 2018 World Employment Social Outlook Report titled 'Greening with Jobs' concludes that while the "transition to a green economy will inevitably cause job losses in certain sectors as carbon- and resource-intensive industries are scaled down, but they will be more than offset by new job opportunities" (ILO 2018:1). It has estimated that globally 6 million jobs are likely to be lost in the transition while creating 24 million new green jobs, i.e., a net increase of 18 million jobs across the world.

The asset loss is usually valued on the basis of replacement costs and applied to manufactured capital equipment and land under economic activity. While the latter would represent 'natural capital' it should be remembered from an environmental sustainability point of view that it constitutes only a part of the total. There is the wider base of natural capital consisting of all land and water and related natural resources that provide an important environmental function for sustainable living and any damage beyond a certain threshold level would have serious economic implications, including employment. There may not be an easy solution to the valuation of this environmental function but the costs involved in their restoration (e.g. strengthening embankments of water bodies such as rivers, lakes and canals or land-slide areas) need to be recognised as an important investment cost for the medium and long term⁶.

For income loss, we have made an indirect assessment by taking the proportion of population in the affected villages as declared by the Government of Kerala (see table 2). The details, as given in Table 2, tell us that INR 17 462 crore or 2.6% of Kerala's income (GSDP) got washed away due to the floods and the resulting disruption of the economy for 15 days. This may be reckoned as the lower limit. The upper limit would be determined by the loss of income, especially in agriculture, for the next few months, say, four months, i.e., the time required to restart cultivation of seasonal crops and repair and restoration of perennial crops. If we take the entire primary sector in the state,⁷ this would mean a loss of income of one-third of GSDP from this sector. This would add, roughly speaking, INR 26 850 crore to the estimates. That would mean loss in state income rising by another 3.96%, taking the total loss to the economy to 6.56% of state income.

⁶ Asset damage/ loss have been estimated by the respective sector groups and reported elsewhere in this report.

⁷ This implies damages to crops not only in flood hit areas but also in other areas due to incessant rains followed by high temperature weather leading to drying up or decay of much of seasonal crops and yields in tree crops. This is equivalent to INR 24 408 crore in 2016-17, adjusted to INR 26 850 crore for 2017-18. The period taken is after the immediate impact of the floods and the loss in overall GSDP as per the calculation in the lower limit. A loss of output equivalent to one-third of the GSDP in agriculture and related activities does not seem to be an unrealistic one. However a realistic picture will emerge only when the GSDP is estimated for 2018-19. GSDP stands for Gross State Domestic Product.

Table 2

Estimated Income Loss during Floods 2018 , Kerala

District	Total population (Projected) 2016 - 17	Affected population Percentage %	No. of affected population	Per Capita GSDP 2016 - 17 (INR)	GSDP per capita per day (INR)	No. of days lost	Total Income (GSDP) Loss(in INR crores)
Thiruvananthapuram	3 338 907	0	0	166 736	457	0	0
Kollam	2 663 381	45.96	1 224 090	186 988	512	15	940
Pathanamthitta	1 177 745	100	1 177 745	135 850	372	15	657
Alappuzha	2 138 105	100	2 138 105	185 171	507	15	1 626
Kottayam	1 986 144	100	1 986 144	164 840	452	15	1 347
Idukki	1 097 993	100	1 097 993	187 252	513	15	845
Ernakulam	3 383 757	100	3 383 757	204 472	560	15	2 842
Thrissur	3 205 105	100	3 205 105	173 514	475	15	2 284
Palakkad	2 921 749	59.91	1 750 420	136 840	375	15	985
Malappuram	4 408 415	42.67	1 881 071	121 663	333	15	940
Kozhikode	3 206 519	11.22	359 771	145 993	400	15	216
Wayanad	838 395	100	838 395	132 045	362	15	459
Kannur	2 588 014	19.88	514 497	149 395	409	15	316
Kasargod	1 367 919	0	0	138 161	379	0	0
Kerala	34 322 148	56.98	19 557 093				13 452
Additional Days for Alappuzha, Wayanad and Ernakulam							
Alappuzha (50%) (from July 16 to August 14, 2018)						20	1 626
Wayanad (50%) (September 1 to 15, 2018)						15	228
Ernakulam (20%) (September 1 to 15, 2018)						15	568
Total of above 3							2 423
Grand total (15+19)							15 875
Total loss at 2017-18 prices (Estimate I - Lower)							17 462
Kerala's GSDP In 2017-18 (617034x1.10)							678 737

Percentage loss in GDP due to immediate impact of floods	2.60
Additional loss in Primary sector	26.850
Additional loss as percentage of GDP	3.96
Total loss to 2017-18 prices (34.4 million) (Flights)	6.56

Note: Population for 2016-17 as projected by the Central Statistical Organisation, Government of India and reported in Kerala Economic Review 2017, Vol.2, p.20. Percentage of affected population worked out based on population in officially declared flood hit areas. The GSDP for 2017 is calculated by an increase of 10% in nominal terms based on the earlier two years' growth rate).

Lost Person-days and Wage Loss to the Workers

Loss to the workers can be assessed in terms of person days lost as well as wage loss. Our macro estimates are based on the proportion of workers affected taken at the same percentage as the affected population. By estimating the workers in three broad categories from the 68th Round of NSS (Casual, Regular, and Self-Employed Workers) and applying an average current wage rate for casual workers (and projecting to 2018 by applying the ratios from the 68th Round) we have estimated the person days and wage income lost for men and women separately, as well as for the three labour status categories. A summary of these estimates is given in the Table 3. (Detailed table in Appendix Table 1).

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Table 3
Estimated person days and wages lost to workers

Category	No. of workers (lakh)	Person-days lost (lakh)	Wages lost (INR crore)
Male	51.68	782.93	5943.09
Female	20.74	314.22	1357.90
Total	72.42	1097.15	7300.99

Note: For details on number of days lost, wages, etc. please see the table given as Appendix 1.

Migrant Labour

As per Gulati Institute of Finance and Taxation (GIFT) study published in 2013, the stock of migrant labour was 25 lakh comprising men (99%) and within age group 18-35 years (91%). This was equivalent to around 20% of Kerala's workforce then. The above study had stated that there is a 6.8% annual net flow of migrant labour that would give us an estimate of around 35 lakh, equivalent to 27.5% of Kerala's workforce of 127 lakh in 2018. They work six days a week on an average. About 20% of migrant workers were classified as skilled. While they are present in all sectors of the economy, 60% of them were found to be working in the construction sector. The wage loss to the migrant workers was estimated taking a loss of 13 work days between 16 August and 30 August 2018. The total wage loss works out to INR 2 032.72 crore while the person days lost works out to 296.01 lakh.

Table 4
Wage Loss to migrant workers (in INR lakhs)

District	Total Migrants [in lakhs]	Affected %	Affected persons [in lakhs]	Skilled (20%)	Income loss @ INR 802 for 13 days [in lakhs]	Un-skilled (80%)	Income loss @ INR 658 for 13 days [in INR]	Total wage income loss [in INR lakhs]
TVM	1.21	0	0	0	0	0	0	0
KLM	0.63	45.96	0.29	5 800	605	23 200	1 985	2 589
PTA	1.46	100.00	1.46	29 200	3 044	116 800	9 991	13 035
ALP	1.45	100.00	1.45	29 000	3 024	11 6000	9 923	12 946
KTM	2.6	100.00	2.60	52 000	5 422	20 8000	17 792	23 214
IDK	0.76	100.00	0.76	15 200	1 585	60 800	5 201	6 786
EKM	6.03	100.00	6.03	120 600	12 574	482 400	41 264	53 838
TSR	2.47	100.00	2.47	49 400	5 150	197 600	16 903	22 053
PKD	2.11	59.91	1.26	25 200	2 627	100 800	8 622	11 250
MPM	1.68	42.67	0.72	14 400	1 501	57 600	4 927	6 428
KZK	3.2	11.22	0.36	7 200	751	28 800	2 464	3 214
WYD	4.6	100.00	4.60	92 000	9 592	368 000	31 479	41 071
KNR	3.86	19.88	0.77	15 400	1 606	61 600	5 269	6 875
KSG	2.78	0	0	0	0	0	0	0
Kerala	34.85	65.34	22.77		47 480		155 819.7	203 300

Note: Col (1): The distribution of migrant workers as per Economic Review 2017, p. x. Col (2)

Social security provided by or through the state has been a recent development for this segment of workers in Kerala. It covers health and accident, provision of dormitory facilities for stay, teaching of the Malayalam language, and so on. A Migrant Workers' Bill is now pending before the government. More aspects of the migrant labour condition and social provisioning are dealt with in the chapter on Social Inclusion.

Workers affected as per Department of Labour

While Table 3 (along with Appendix 1) gives an estimate of all workers affected by the floods, the information supplied by the Labour Commissioner covered 67.11 lakh workers (pertaining to sectors under its jurisdiction), of whom 12.80 lakh

workers (19.1%) were affected by the floods. On an average they lost 21 days of work, totalling 269.08 lakh person days lost. The occupational sector-wise details are given in Table 5. Our enquiries revealed that the data were collected largely through the various Welfare Fund Boards that come under the administrative jurisdiction of the Labour Department. As such it does not cover sectors and occupations that come under the jurisdiction of other departments. Thus, the universe of workforce covered is 53% of the total workers as estimated from the NSS data.

In an interaction with trade union leaders there was a general consensus that the working people affected by floods as well as those who face the prospect of job loss due to damage to enterprises, farms, and capital assets need to be taken care of. They emphasised the contribution of the workers in rescue and relief operations as well as the contribution of their organisations mobilising finance for the Chief Minister's Distress Relief Fund. Two types of compensations were suggested: (i) public works for those who demand them under the MGNREGS, and (ii) compensation for loss of household durables and workdays at a rate that should not be less than the MGNREGS wages. Compensation for replacing the capital assets of the self-employed (such as artisans) was also underlined.

Table 5
Details of Person days Lost Due to Flood - 2018

Sector	Total No. of workers	Flood Affected workers	Work-days lost	Person days lost
Building Construction	1693 779	610 486	16	9 767 776
Tailoring Services	820 606	154 387	15	2 315 805
Toddy Tapping	29 908	2 273	35	79 555
Shops & Commercial Establishments	449 907	45 167	8	361 336
Agricultural Activities	1616 273	403 682	33	13 321 506
Handloom Weaving	6 145	778	42	32 676
Abkari (Toddy Sales)	3 178	255	6	1 530
Jewellery Making	18 611	760	13	9 880
Unorganised Sector (Not specified)	417 420	5 522	15	82 830
Small Plantations Sector	15 091	7 607	6	45 642
Etta Kattuvally Thazha (Bamboo & Reeds)	79 442	27 354	18	492 372
Motor Vehicle Workers	869 239	14 903	12	178 836
Cashew Workers in factories	125 274	531	19	10 089
Headload Workers	69 564	6 711	54	362 394
Labour Welfare Fund Board	487 871	0	0	0
Beedi & Cigar Workers	9 000	0	0	0
Total	6711 308	1280 416	21.14	27 062 227

Source: Office of the Labour Commissioner, Government of Kerala.

Plantation Sector

The Plantation Sector in Kerala is an important one from the point of view of employment and livelihoods. According to the Department of Labour, Government of Kerala, the organised sector employs 69 000 persons in around 725 companies and 1.5 lakh persons work in the unorganised sector consisting of small plantations. A majority of workers in the organised sector are women working on a piece rate wage basis and constitute one of the low-paid sections. According to the Department of Labour 35,107 workers were affected out of the 50 882 workers in the various flood affected districts*. The total person-days lost were 245 749. If this incidence of affected workers (69%) is extended to the entire workforce of 2.19 lakh workers, it would work out to 1.51 lakh workers. The district-wise figures are given in Table 6.

* The gender-wise figures were not available from the Department of Labour.

Table 6
Plantation Labour Affected by Floods, 2018

Name of Office	District	Total no. of registered employees	No. of flood affected employees	No. of days	No. of work days lost
Chief Inspector of Plantations, Kottayam	Thiruvananthapuram	0	0	0	0
	Kollam	2 785	0	0	0
	Pathanamthitta	3 299	348	3	1 044
	Alappuzha	0	0	0	0
	Kottayam	1 383	113	3	339
	Idukki	31 486	25 976	6	155 856
	Ernakulam	743	743	5	3 715
	Thrissur	912	912	4	3 648
	Palakkad	2 850	1 754	11	19 294
	Malappuram	671	248	5	1 240
	Kozhikode	1 073	352	6	2 112
	Wayanad	5 128	4 171	10	41 710
	Kannur	389	260	10	2 600
	Kasargode	163	230	10	2 300
Total		50 882	35 107	6.66	233 858

Source: Labour Commissioner, Government of Kerala.

Livelihoods

Livelihoods are critical to sustaining households in Kerala. As in most states in India, a majority of workers in Kerala are informal (officially known as unorganised) workers who work (i) in the unorganised sector (i.e., proprietary or partnership establishments employing less than 10 workers) as casual workers and some as regular workers, and (ii) in the organised/formal sector (establishments with 10 or

more workers). A significant number of workers, especially women, work as casual workers in large organised sector enterprises such as cashew processing, coir manufacturing, plantation and a number of other sectors. The total workforce may be divided into casual workers (36.3%), regular workers (26.4%) and self-employed (37.3%). This distribution is somewhat different from the All India scenario where the respective shares are 30, 18 and 52%, suggesting a higher degree of commoditisation and proletarianisation of the Kerala economy. Of the three labour status categories, all casual workers are considered as informal workers. The same is the case with the self-employed, except a very small segment of independent professional workers. Among the regular workers more than half are informal workers without any employment and/or social security. By adopting the definition of informal workers as per the National Commission for Enterprises in the Unorganised Sector (NCEUS) we estimated the industry-wise informal workers in Kerala and found that 87% of workers in Kerala are informally employed, i.e., without any employment and/or social security provided by the employer⁹. The floods had a major impact on this particular sector and the recovery strategy needs to be cognisant of their vulnerability.

Agricultural and allied labourers

Given the extent of devastation of land and water resources, agricultural labourers (who are asset-poor, so that employment is their only means of livelihood) face a dire situation. Agricultural labourers, who constitute around one-fifth of the total workforce, have no government departmental agency to look after their needs, unlike farmers (Agricultural Department), coir workers, workers in cashew and other industries and commercial activities (Department of Industries & Commerce) and service sector departments (various departments) except domestic workers, which is another segment of the working poor. Their estimated wage income loss is included in Table 3 (pertaining to all affected workers).

Workers in Traditional Industries

Several worker households in the traditional industries were affected by the floods directly.¹⁰ Coir processing industry is a major traditional industry in Kerala in terms of employment generation. The government is giving more emphasis to the coir industry, with a separate department considering the social features and problems faced by it. Among the states in India, Kerala is the largest producer of coconuts, contributing 45% of the country's total production. This agro-based rural industry provides subsistence to a large number of families in the coastal belt of Kerala. Around 80% of its workers are women. The co-operative sector plays a key role in the coir industry in the state. The private sector too has a large presence in the industry as final product manufacturers and exporters.

Khadi & Village Industries

Khadi and Village Industries Board (KVIB) carries out its activities through co-operative societies, registered institutions and departmental units. It plays an important role in generating regular employment for women in rural areas with minimum investment. These industries use eco-friendly local resources and generate higher employment opportunities. The workers are mostly women working either from home or in cooperative societies, and their wages are, perhaps, the lowest in the

⁹ This deficiency has been partially taken care of in Kerala by forming Welfare Fund Boards for several segments of the workers. These boards pay a pension to retired workers and provide other financial assistance to their members. This has been possible due to the unionisation of almost all segments of workers in Kerala, irrespective of the nature of their employment (formal or informal).

¹⁰ Cashew processing workers in factories were, by and large, unaffected as per the Labour Department (see Table 5).

state, given their low productivity. However, they are sustained by the fact that there is regular employment which is accessible to women who are not available for work beyond their neighbourhoods. Then there are the workers engaged in handicrafts of various types, most of them from socially and economically backward classes.

The Handloom sector in Kerala stands second to the coir sector in providing employment among the traditional industries of the state. The Handloom industry in the state is mainly concentrated in Thiruvananthapuram and Kannur District and in some parts of Kozhikode, Palakkad, Thrissur, Ernakulam, Kollam, and Kasaragod Districts. The industry is dominated by the co-operative sector. The co-operative sector consists of factory type and cottage type societies. There were 600 registered Primary Handloom Weavers Co-operative Societies in the state during the year 2015–16 as against 575 in March 2015. Of this, 167 are factory type and 433 are cottage type societies. Of these 600 societies 402 were in working condition as on October 2016. The number of factory type co-operative societies functioning at present is 84 (14%) and cottage type societies is 318 (53%).

The case of Chendamangalam Handlooms is unique. These weavers also own their family looms and work from home as well. It is estimated that the cost of restoration of each such smaller loom will be around INR 2 lakh. In addition, while the restoration continues, the weavers are going to lose their livelihood at an average rate of INR 1 200 per day (with two or more working members per household), for at least six months.



Tourism

Kerala tourism has, by and large, been built up over the last three to four decades with an eye on high end income consumers, especially from abroad. However, there are two segments to this sector: one relying on foreign tourist arrivals and the other on domestic tourists. The latest figures (2016–17) show that 10.38 lakh foreign tourists and 13.17 lakh domestic tourists visited Kerala in 2016–17. The earnings were INR 7 749.51 crore and INR 15 348.64 crore respectively. Indirect income generation from tourism has been estimated at INR 6 560.41 crore (Govt of Kerala, Economic Review 2017, Vol.2, p.185). That works out to 4.8% of the Kerala's GSDP. The August 2018 Floods disrupted this flow temporarily for the first 15 days, but it has continued for some more time, partly to repair and refurbish the facilities and partly to convey a sense of normalcy. Since the monsoon period has a lower rate of tourist arrival than other seasons, it may not be too far off the mark to take a 20% to 25% decline in revenue (between INR 5932 crore and INR 7415 crore). This has consequences for a segment of the workers who are casually employed in hotels and restaurants and in transport sector as well as the self-employed and other workers in small shops and restaurants.

The floods resulted in the cancellation of Onam festivities in all districts, causing tremendous losses in the tourism sector. The disaster affected various parts of the value chain and had a major impact on the lives and livelihoods of the artisans (drop in tourism numbers, lack of purchasing power within affected communities, no more weekly markets, etc.). These trends could be seen across the sector and were worse for those who lost their workplaces and houses in the most affected districts of Ernakulam, Pathanamthitta, and Thrissur. Tourism is one of the modern sectors of the Kerala economy that has benefitted from the ecological endowments (natural capital) of the state. The damage to the natural environment is equivalent to the damage or destruction of the natural capital foundation of this sector that contributes to the income and employment in Kerala's economy.

Micro and Small Industries

Barring a few large industrial units, mostly in the public sector, Kerala's manufacturing sector is dominated by both modern and traditional industries. The latter has been on a declining path, although some of them such as coir have been staging a comeback, given the environment-friendly low carbon footprint products such as geo-textiles. New industries that have made a presence for themselves are food products, rubber products, plywood manufacturing, rice milling, general engineering, pharmaceuticals, printing, Ayurveda and so on. A number of clusters are in Ernakulam district in Aluva that was severely affected by the floods. So is the case of coir industrial units (including coir cooperatives).

The Department of Industries and Commerce made a quick assessment of the damages and supplied a summary statement of the number of enterprises, number of workers affected and an estimate of loss to plant and equipment. That gives a figure of 3 590 enterprises and 17 413 workers. The base data for this is their masterfile on MSME enterprises (both manufacturing and services) under their jurisdiction. That gave a figure of 1.28 lakh enterprises with 6.60 lakh workers.

Table 7
Number of MSME enterprises affected by the floods

District	Total enterprises	No. of enterprises	Total Estimated Losses (INR lakh)	Persons affected
Thiruvananthapuram	9 647	10	192	50
Kollam	7 300	41	510	220
Pathanamthitta	4 509	410	3 101.48	1 500
Alappuzha	7 831	820	5 260.99	3 625
Kottayam	7 979	204	745.62	980
Idukki	4 533	79	879.82	368
Ernakulam	16 547	1 126	39 180.44	6 400
Thrissur	15 250	630	11 857.82	2 910
Palakkad	8 732	59	499.433	300
Malappuram	21 914	97	372.906	504
Kozhikode	10 445	52	410.17	298
Wayanad	3 200	61	377.18	255
Kannur	6 415	1	3.95	3
Kasargod	3 423	0	0	0
Kerala	127 725	3 590	63 391.81	17 413

Source: Department of Industries and Commerce.

Assessment of Damages and Losses

On the basis of information collected from the relevant departments we have made an assessment of damage to assets and income loss. These are presented in Table 8. The estimate of wage loss to the universe of affected workers is given separately as economy-wide information. The asset damage to specific sectors works out to INR 880.96 crore while the income loss stands at INR 2 176.20 crore. The total damages work out to INR 3 057.18 crore.

Table 8
Damage to assets and income loss

Sector	Number of Workers affected	Damages (INR crore)	Income Loss (INR crore)	Total (INR crore)
Wage loss to all affected workers (as per Appx. Table 1)	72 42 000	NA	7300.99*	7300.99
Subtotal (A)				
Losses for specific segments/sectors as per information from respective Departments				
Workers in different Welfare Funds (Table 5)	1 280 416	NA	NA	NA
Plantation (No.) (Table 2)	35 107	NA	NA	NA
MSME (Table 7)	17 413	359.00	274.92	633.92
Coir (self-employed) (Number)	50 553	1.34	0.32	1.66
Handloom (self-employed) (Number)	Assessed in Chapter on Culture and Heritage			
Tourism (Number)	95 500	508.80	1 701.00	2 209.80
Kudumbashree (JLGs, micro enterprises, etc) (lakh)	258 660	11.82	199.96	211.78
Sub-total (B)	172 0160	880.96	2 176.20	3 057.176*
Grand (Total A+B)		880.96	9477.19	10 358.16
Note: * means estimated wage loss. For specific segments/sectors loss in column 5 relate to inventory and/or income loss. NA means Not Available.				
** A part of INR. 3057.176 has a small component of wage loss relating to the sectors mentioned here.				

Recovery Strategy

The idea of 'Build Back Better' (BBB) for a New Kerala has to be rooted in environmental sustainability, cost effective technologies, green job creation, skill development, climate resilient livelihoods via decentralised planning and social-cum-gender inclusion. From an employment and livelihoods point of view, we have worked out two recovery programmes. The first one, given in Table 9 is part of the main recovery programme of this report. It is based on meeting the immediate needs in the affected sectors and people to kick-start recovery (e.g. through emergency employment) while also creating conditions for long-term recovery, resilience to multiple shocks (including sudden climatic events and natural hazards) and sustainable development. The total recovery cost, as given in Table 9, works out to INR 4 107.43 crore for 5 years.

An additional recovery strategy with a view to addressing livelihood concerns linked to eco-restoration (recovering and strengthening the natural capital foundation) has been worked out and presented in Table 10. This is an additional employment programme leveraging the national MGNREG Scheme and expanding the state government's urban employment scheme called Ayyankali Employment Guarantee. This works out to INR 23 065.20 crore. Out of this INR 16 915.63 is to be mobilised by leveraging MGNREGS, i.e., 73% of the total cost. Of the remaining INR 6 149.57 crore, INR 1 098.21 crore is earmarked for skill development. If half of this amount can be leveraged through centrally-sponsored schemes, the state government's burden will reduce to INR 5 600.47 crore or 24% of the total cost for five years.

Short-term and Medium-term Plan (0-12 months)

Creating emergency employment through cash for work and other quick employment projects: This should address the 2.05 lakh MGNREGS job card holders out of the 6.4 lakh families who were given a cash relief of INR 10 000. Even as it provides for livelihood support it can be linked to the repair of damaged bunds, for debris clearance of land, repairs of ponds and lakes used for irrigation and water control measures, strengthening riverine embankments and all such activities that have to do with land and water resource management and development. These can be taken up through the MGNREG scheme for rural areas and Ayyankali Employment Guarantee Scheme in urban areas.

Special compensation packages for Kudumbashree members: Leased land cultivators (e.g. Joint Liability Groups (JLGs)) and those who set up micro enterprises are a very vulnerable group in the post-floods scenario. The massive strides they had made in livelihoods have been completely wiped out by the sudden floods, absence of insurance and a total lack of livelihoods diversification. This group needs special attention in the context of rehabilitation, but more importantly with regard to issues of land ownership, leased land regulations, decent wages and insurance in order to be resilient to future disasters. An appropriate policy framework for leased land cultivation such as by JLGs and similar groups is warranted. While there is an extensive data base of households and individual members, especially those belonging to economically poorer households (e.g. Kudumbashree, Panchayats, and the Public Distribution System), field visits and review reports pointed out problems in accessing benefits to some of the flood affected poor. This needs to be specially taken care of by creating access points such as the Panchayats for their inclusion.

Insurance Packages for climate resilient agriculture: The current insurance packages cover paddy, cashew, plantain, sugarcane, tapioca and mango. Other agricultural products like rubber are also to be brought in. Current insurance packages are weather-based and crop-based. Insurance packages should also cover damages from wind and excess rains.

Capital recovery /subsidy and loans for income loss: These have been provided for sectors with a large number of informal workers such as artisanal households and other such sectors.

Medium Term Plan (13-36 months)

Restoration and regeneration of Natural Capital: This is mostly green job creating activity. Technological choices need to be made that entail lower carbon footprint, e.g., in strengthening and construction of embankments and related works.

Promotion of alternative technologies in building construction: This is an area in which there are a number of demonstrated alternatives practiced in Kerala. There is already a skilled workforce and more workers can be skilled given the low learning curve of the already educated young labour force. Promotion of low carbon footprint materials is another such area. Some of these have been spelt out in detail in other chapters (e.g. Housing) but the employment generation potential should be kept in mind.

Promotion of Climate resilient Agriculture: Crop-based seasonality mapping needs to be carried out to identify vulnerabilities to hazards and a menu of options for farmers in vulnerable areas needs to be developed. Integrated farming approach is already being promoted by the Haritha Kerala Mission. This needs to be intensified.

Product Innovation Market development: It is very important, especially for the artisanal sectors like coir and handloom, to intensify efforts in developing new products and expanding access to market through innovative methods. These concerns, however, have largely been addressed already.

Entrepreneurship promotion: The Government of Kerala needs to cement the brand on Nava Kerala products through E-commerce platforms in allied areas such as organic agriculture and its products, handicrafts and trade, efforts in waste management, local ecological tourism, arts heritage and culture.

Skills Upgrade and technology links for creating Green Jobs: Skill upgrade and development is a crucial area of concern to which Kerala needs to pay particular attention. It should be dovetailed into the emerging concept of creating Green Jobs i.e. those jobs that contributes to lower carbon emission or no emission as well as no local environmental damages.



Long run Plan (3-5 years)

Disaster, Climate risk and Livelihoods Governance -Kerala's distinct people's participation model on local self government forms the bedrock of the recovery strategy. The initiatives of local governments are essential for community-based disaster risk reduction plans, community-based disaster management, climate risk and livelihoods recovery plans. Capacity building and strengthening of such a model ensures the social, economic, and political decisions that determine exposure and vulnerability to natural disaster/s and also provides integrated solutions for disaster risk reduction, climate adaptation and sustainable livelihoods. This will also be directly aligned with Priority 2 of the Sendai Framework on Disaster Risk Reduction (DRR) on 'Strengthening Risk Governance to Manage Disaster Risk'. These issues have been dealt with in detail in the chapter on DRR.

Enterprise, product innovation, market development and skill development: These have to be carried on in the long term as well in order to strengthen the emergence of a New Kerala with environmental sustainability as a key characteristic.

Table 10: Rehabilitation Needs and Costs (INR Crore)

Activity	Short - Term	Medium - Term	Long - Term	Total
MGNREGS and Cash for Work Total	956.36			956.36
Estimated Households who is having active job card among flood affected HHs (6.4lakh) = 2.05 lakh (1.44 rural + 0.61 urban)				
MGNREGS additional employment for 100 days for 1.44 lakh rural HHs (Over and above the current annual average of 47 days) (1.44 lakhx100x INR 274)	394.56			394.56
Material cost (wages to materials in the ratio of 60:40 wages to materials)	260.41	An additional package for employment linking it with eco-restoration and Green Jobs given separately.		260.41
Ayyankali Employment Guarantee for 0.61 lakh urban HHs (0.6 lakhx100xRs.274)	180.84			180.84
Wages and material cost in the ratio of 60:40	120.55			120.55
Micro, Small and Medium Enterprises (MSME)	590.32	315.40	100.00	1,005.72
Recovery of Damage (INR 359 crore + 20% additional cost for BBB)	215.40	215.40		430.80
Recovery of loss (25% of the cost as compensation and remaining as loan)	274.92			274.92
Convergence schemes for strengthening cluster common facilities, technology and marketing (existing central and state level mechanisms)	80.00	80.00	80.00	240.00
Skill Development (through ITIs, Polytechnics and others)	20.00	20.00	20.00	60.00
Total for MSME Recovery and Reconstruction				
Coir	76.36	87.08	0	163.44
Recovery of Damage (20% additional cost for reconstruction & BBB)	0.81	0.81		1.62
Recovery of loss - product and stock (25% of the cost as compensation and remaining as loan)	0.32			0.32
DRR Preparedness, Resilience Planning - Insurance	0.23	0.04	0	0.27
Technical upgradation (123 damaged units @ INR 1 lakh)		1.23		1.23
Market Development including e-commerce		10.00		10.00
Promoting coir products for large-scale reconstruction and resilience (Geotextiles for embankment protection, controlling erosion, treated coconut wood for building homes, pith for horticulture and so on.	50.00	50.00		100.00

Activity	Short Term	Medium Term	Long Term	Total
Skill development and diversification for self workers (to create new products such as e-books/files) (approx. 50,000 workers to begin with @ INR 10,000)	25.00	25.00		50.00
Handloom	Recovery needs provided in Chapter on Culture and Heritage			
Tourism	405.28	405.28		810.56
Recovery of damage (20% additional for reconstruction and BBB with green infrastructure such as Solar, water, waste management)	305.28	305.28		610.56
Disaster preparedness, Resilience Planning (including insurance)	50.00	50.00		100.00
Skill development for environmentally sensitive tourism development including capacity building for handling disaster situations	50.00	50.00		100.00
Kudumbashree Women's sector	157.09	207.09	200.00	564.18
Recovery of damage (20% additional for reconstruction and BBB under a special package from National Rural Livelihoods Mission (NRLM) for damaged assets recovery	7.09	7.09		14.18
Recovery of income loss (50% as grant and remaining as loan without interest)	100.00	100.00		200.00
Capital subsidy for microenterprises and JLGs for strengthening green enterprises/activities (e.g. Organic farming, safe food catering, creating green products such as cloth bags, biomaterial-based products, vermicompost and so on)	45.00	90.00	180.00	315.00
Insurance cover for crops and enterprises	5.00	10.00	20.00	35.00
Skill Development, Digital data storage, information system, etc.	28.00	296.40	71.00	395.40
Skill formation and development training based on district-level plans for creating Green-Jobs and Green enterprises for Kudumbashree members (14x10)	28.00	56.00	56.00	140.00
Strengthening existing Digital Data System and MIS at the state and district level of Kudumbashree (INR 1 crore for two years for districts and state level)		15.00	15.00	30.00
Capacity Building of LSG institutions to support Kudumbashree Office and organisational systems (941 Panchayatsx 10 lakh + 93 Municipalitiesx20 lakh for two years)		225.40		225.40
Grand Total	2,213.41	1,311.25	371.00	3,895.66

Additional Recovery Plan based on Employment Generation linked to Eco-restoration

As mentioned earlier, the additional recovery plan has been worked out separately since it is solely based on leveraging the MGNREG Scheme and expanding the state government's urban employment guarantee scheme (see Table 10). This provides an opportunity for Kerala to provide a smooth transition to a green economy, recognising the foundational environmental function of its natural resources as well as its function as natural capital. As mentioned earlier, much of Kerala's economic functioning depends on the ecological assets as well as the natural resources that emanate from it. In addition, eco-restoration would call for mobilisation of large numbers of workers as was witnessed in the recent and praiseworthy initiatives in rejuvenating blocked or disused rivers and canals (Alappuzha and Varattar in Pathanamthitta). Such mobilisation of labour would certainly provide for livelihood opportunities for the poorer sections, especially women, labour supply from whom will be enhanced through local level activities. In addition such an eco-restoration programme would also provide for leveraging Kerala's justly famous voluntarism that has contributed to Kerala's social transformation.

Table 10
Additional Recovery and Reconstruction Need Assessment for an employment-oriented livelihood protection linked with eco-restoration (strengthening natural capital)

Past five years' performance of MGN-REGS (Kerala)*	2018-19 (14.10.2018)	2017-18	2016-17	2015-16	2014-15
Person days generated (lakh)	318.1	619.6	684.6	741.7	588.7
SC person days (%)	16.5	16.3	17.0	17.4	17.5
ST person days (%)	6.0	4.6	4.5	3.9	3.9
Women person days (%)	90.2	90.8	91.1	91.3	92.2
Total households worked (lakh)**	11.6	13.1	14.6	15.1	13.8
Average no. of days/HH	27.5	47.2	47.0	49.3	42.7
Average daily wage rate (INR)	274.1	260.9	243.1	231.8	214.3
Annual growth in money wage (%)	5.1	7.3	4.9	4.8	
Additional employment generation and the required financial resources	Short Term Year 1	Medium Term Year 2	Year 3	Long Term Year 4	Year 5
Additional employment creation for eco-restoration and related works (Households in lakh) (2.05 lakh provided in the Main Recovery deducted)	10.95	13.0	13.0	13.0	13.0
Additional number of person days per household	53.0	53.0	53.0	53.0	53.0
Total person days of employment to be generated (lakh)	580.35	689.00			
Expected daily wage rate (5% annual increase)	274.1	287.8	302.2	317.3	333.2
Additional financial requirement (INR crore)	1590.73	1982.94	2082.16	2186.20	2295.75
Materials (based on 60:40 ratio of wage: materials) (INR crore)	1080.38	1321.83	1387.97	1457.32	1530.35

Past five years' performance of MGN-REGS (Kerala)*	2018-19 (14.10.2018)	2017-18	2016-17	2015-16	2014-15
Total additional financial requirement for RURAL areas (Rs crore) (INR 16 915 for 5 years)	2 671.11	3 304.77	3 470.13	3 643.52	3 826.10
Employment creation for eco-restoration and related works in URBAN areas (2 lakh persons = 10% of female urban labour force) for 100 days (2 lakh x 100 x wage rate as per MGNREGS) (INR crore)	548.20	575.60	604.40	634.60	666.40
Materials (based on 60:40 wage: materials) (INR crore)	365.43	383.69	402.89	423.02	444.22
Total additional financial requirement for URBAN areas (INR crore)	913.63	959.29	1 007.29	1 057.62	1 110.62
Skill up gradation and development (5% of 6+9) (INR crore)	179.24	213.20	223.87	235.06	246.84
TOTAL (INR Crore)	3 763.98	4 477.26	4 701.29	4 939.20	5 183.56
GRAND TOTAL FOR 5 YEARS IN INR CRORE					23 065.29

Source of data on past performance: Website of Government of India, Ministry of Rural Development, *http://nregasp2.nic.in/netnrega/homecity.asp?state_code=16&state_name=KERALA

Note: **No. of active Job Card holders as of 14 October 2018 was 19.4 lakh.

Implementation Strategy

For direct employment generation as a matter of public policy, there is the Department of Local Self Governments with responsibility to implement the national public employment scheme, namely, MGNREGS, in rural areas. In urban areas there is a state government sponsored scheme known as Ayyankali Employment Guarantee that has not been actively promoted, given its low budgetary allocation. The Department of Labour and Skill Development is responsible for implementation of laws relating to conditions of work and safety. It now has an added responsibility for skill development for which a few initiatives have been taken (e.g. the Kerala Academy of Skills Excellence). It also has under its wing the Industrial Training Institutes for promoting structured skill development. Although the Department of Industries and Commerce is not directly concerned with employment, it is an important derivative of its promotional activities such as industrial cluster development programmes, IT parks and so on. Special skill development programmes need to be initiated for workers in the industrial clusters that have a higher share of low-educated persons in the total workforce. The Kerala State Planning Board is the agency for coordinating the plan-related employment dimension in the state. It needs to be strengthened to function as a more coordinated platform to spell out the employment implications of demographic transition, educated unemployment, emigration of Kerala labour and migration of non-Kerala labour, labour legislation and social security in the changed context of building a New Kerala. The additional challenge is to think afresh for the creation of green jobs in the economy. These issues will have to be factored in the 13th Plan that is undergoing a recast.

Sector assessment methodology

This chapter, dealing with such a cross-cutting theme as employment, relied on estimating the loss to the economy and loss to the workers based on secondary data that are quite robust. The immediate impact on workers in specific sectors was assessed based on data made available by departments. However such administrative data as have been made available had to be collected in a short period of time, given the urgent requirement of information. These will have to be revisited through systematic surveys at the local level before undertaking rehabilitation and rebuilding programmes. Qualitative reports on the impact were also sourced through interviews and meetings with officials, non-governmental organisations, social activists, scholars and media reports, all of which have not been incorporated due to limitations of space and time. Given the task of needs assessment, we believe the employment dimension has been captured so as to highlight its crucial importance in reconstruction.



Disaster Risk Reduction

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EXECUTIVE SUMMARY

1. The heavy monsoon of 2018 brought widespread flooding to several districts of Kerala state and triggered thousands of small to big landslides. The extreme and prolonged rainfall spell in August led to the worst flooding in Kerala in nearly a century impacting almost 5.4 million people, one-sixth of the State's population. Several districts were inundated for more than two weeks due to heavy rains induced floods. A total of 498 casualties have been reported so far due to the floods and subsequent landslides, with over 1.4 million people living in relief camps during the peak of flooding. The Government conducted timely and efficient rescue and relief operations to save many lives. The people of Kerala also showed remarkable resilience in the face of the adversity.
2. The Government of India placed an official request to the Asian Development Bank (ADB) and World Bank (WB) on August 21, 2018 to respond to the Kerala floods. The ADB and WB group mobilized a team to support the GoK in conducting a Joint Rapid Damage and Needs Assessment (JRDNA) to quantify damages and recovery needs to formulate and prioritize sector response, develop a resilient recovery strategy, and identify sources of financing. This JRDNA report is a collaborative effort of the GoK, the WB and the ADB. The objective of the exercise is to lay the groundwork for a recovery and reconstruction framework. The assessment covers all 14 districts in the State which were affected by the floods and landslides to varying extents.
3. An overview of the sector-wise recovery needs estimated are in Table 1 below.

Table 1: Overview of Recovery Needs

Sector	Cost in INR (Millions)	Cost in USD (Millions)
Housing	25,337	362
Public Buildings	1,909	27.3
Transport	85,540	1,222.5
Urban Infrastructure	17,572	251
Rural Infrastructure	52,164	745.2
Livelihoods	38,017	543.0
Health	2,750	39.3
Irrigation & Water Resources	14,833	211.9
Power	3,531	50.7
Natural Environment & Biodiversity	4,545	64.9
Cultural Heritage	874	12.5
Debris/Waste Management	1,745	25
Social Impacts	113	1.7
Total	248,930	3,558

Note: (i) The values have been rounded so the totals may not match; (ii) Currency rate 1USD = INR 70.

4. A more detailed recovery costs per sub-sectors is in the Table 2 below.

Table 2: Recovery Needs for Sub-sectors

Sector and Sub-sectors	Cost in INR (Millions)	Cost in USD (Millions)
Housing	25,337	362
Public Buildings	1,909	27.3
Transport	85,540	1,222.5
a. Roads (state)	76,474	1,092.5
b. Roads (NH)	9,100	130
Urban	17,572	251.03
a. Infrastructure	2,020	28.9
b. Water Supply & Sanitation (Urban)	15,552	222.2
Rural	52,164	745.2
a. Infrastructure	33,040	472.3
b. Water Supply & Sanitation (Rural)	19,124	273.2
Livelihoods	38,017	543.0
a. Agriculture	20,930	299.1
b. Livestock	1,547	22.1
c. Fisheries	2,254	32.2
d. Industries/MSME	6,419	91.7
e. Handloom and Coir	98	1.4
f. Tourism	6,769	96.6
Health	2,750	39.3
Irrigation and Water Resources	14,833	211.9
Power	3,531	50.7
Natural Environment & Biodiversity	4,545	64.9
Cultural Heritage	874	12.5
Debris/Waste Management	1,745	25
Social Impacts	113	1.7
Total	248,930	3,558
	(₹ 24,893 crores)	(\$ 3.56 billion)

5. The assessment covers the damage and recovery needs for public as well as private assets and sectors. The preliminary recovery costs estimated can guide the relative investments by public and private entities during recovery and reconstruction. For funding such a large-scale recovery program, the governments often plan to use the available resources to support the poorer strata and rural population to revive the social and productive sectors. It is also critical to ensure availability of finance through banking and non-banking institutions including cooperatives for the recovery of the private sector as well.

6. The costs to rehabilitate and reconstruct public goods such as schools, hospitals, roads, power utilities, and water supply systems, among others, will exert substantial pressure on public finances. In view of the massive recovery needs, the government would need to undertake a sustained effort