

**Impact of Climate Change on Agricultural Workers**  
**A study of**  
**National Agricultural Workers Review**  
**A Collaborative Research**

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## **Acknowledgements**

This study is highly significant for workers of agricultural sectors who are at risk of losing occupations due to climate change. The issue of climate change has become one of the most relevant agenda. Workers and people worldwide, and people of zero emission zones are facing both seen and unseen adverse effects of it. Livelihood of agricultural workers of mountainous regions, who are active agent to protect environment and eliminate the effect of climate change also in Nepal. Besides, adverse impact of climate change extends in economic, environmental, health and food security in the rural livelihoods. Therefore, a study of this kind from an academic institution located in remote mountainous region is highly pertinent. Therefore, the research team of the campus and collaborating expert's work of this kind is appreciable, and deserves heartfelt thanks on behalf of the campus side.

Campus Chief

## **Abbreviation**

ABC	: Annapurna Base Camp
ADB	: Asian Development Bank
ANTUF	: All Nepal Trade Union Federation
CAWUN	: Construction & Allied Workers Union of Nepal
CBS	: Central Bureau of Statistics
CoP	: Conference of Parties
CSOs	: Civil Society Organizations
CUPPEC	: Central Union of Painters, Plumbers, Electro & Construction Workers, Nepal
EBC	: Everest Base Camp
Eos	: Employers' Organizations
EVs	: Electric Vehicles
FCAN	: Federation of Contractors Association of Nepal
FGD	: Focussed Group Discussion
FNV	: The Federation of Dutch Trade Unions (of Netherlands)
GDP	: Gross Domestic Product
GEFONT	: General Federation of Nepalese Trade Unions
GHG	: Green House Gas
GUFs	: Global Union Federations
HAN	: Hotel Association of Nepal
IFRC	: International Federation of Red Cross and Red Crescent Societies
IF-CAP	: Innovative Finance Facility for Climate in Asia and Pacific
IPCC	: Intergovernmental Panel on Climate Change
ITUC	: International Trade Union Confederation
ITUC-AP	: International Trade Union Confederation – Asia Pacific
JTUCC	: Joint Trade Union Coordination Centre
KII	: Key Informant Interviews
LDC	: Least Developed Countries
LPG	: LP Gas
MNCs	: Multi-National Corporations

MDGs	: Millenium Development Goals
MW	: Mega Watt
NATA	: National Association of Travel and Tours Agencies
NGOs	: Non-Government Organizations
NTUC	: Nepal Trade Union Congress
OSH	: Occupational Safety & Health
PMEP	: Prime Minister Employment Programme
R & D	: Research & Development
SDGs	: Sustainable Development Goals
SAARC	: South Asian Association for Regional Cooperation
TAAN	: Trekking Agencies Association of Nepal
TUs	: Trade Unions
UN	: United Nations
UK	: United Kingdom
UNFCCC	: United Nations Framework Convention on Climate Change
UNITRAV	: Union of Trekking, Rafting Travel workers of Nepal
USA	: United States of America
USD	: United States Dollar
WFTU	: World Federation of Trade Unions
WHO	: World Health Organization

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## **Executive Summary**

Population growth rate of Nepal is in declining trend, currently at 0.92% per annum. Unstable political situation has high impact on economic development and being reflected in unemployment pushing outflow of workers for foreign employment. At present the total workforce is as much as 16.8 million, but the best demographic position having large number of young generations is being lost fast.

Agriculture is being ignored by young generation of workers and economy has been functioning with heavy dependence on international remittances. Out of the nearly 450,000 new workers entering Agricultural Worker market every year, our economy absorbs hardly 50,000 new entrants compelling overwhelming numbers to join foreign employment. Within 8 months of the current fiscal year, 337,144 workers have obtained work permission for foreign employment, which may reach or cross 400,000 in total at the end of this fiscal year.

Average annual growth rate of wages and salaries from 2005/06 to 2020/21 as indicated by the national salary and wage rate index is 6.6%. But for increased living standards, earnings remitted from abroad have contributed largely to individuals, households and economy as a whole. Hence our Agricultural Worker market is the supplier/exporter of workers.

Agricultural Worker laws including Agricultural Worker Act 2017, Social Security Act 2017 and Foreign Employment Act 2007 are worker-friendly to a larger extent. However, climate change as a new offensive factor is not considered by the Agricultural Worker laws yet.

### **Climate caused vulnerability and adverse effects**

Climate change as a global problem has been seriously taken up by scientists and through their continuous efforts by all stakeholders. Summits, conferences and agreements in international level are highly significant. Though Nepal is not responsible for worsening climatic conditions, climate change has definitely greater impact on Nepal and vulnerability of the people and working families in Nepal is very high. UNFCCC, CoPs, Kyoto Protocol, Paris Agreement, Glasgow Commitments, IPCC Reports etc. have been quite important to Nepal. With Diverse and wide climatic zones, Nepal is considered as one of the most vulnerable countries even among the LDCs. The high risks and vulnerabilities as well as increased frequency of climate change disasters have generated several challenges and created high degree of seriousness. Hence policies, programmes and mechanisms in order to save our environment and protect people have been gradually developed, though not sufficient. Commitments of Nepal in International forums including those in Paris Agreement, Glasgow Conference and Egypt CoP are highly significant in spite of very low level of financial/technical capacity. Still the proper attention to the issues of working masses have not been witnessed in government policies and programmes.

Basically, the impact of climate change has been observed on working class families in major areas as follows:

- Mass level or location-based effects faced by the entire population and households, loss of agricultural land and fixed properties
- Employment and income effects through direct climate change impact in Agricultural Worker market
- Increasing inequality pushed up by climate crisis

- Health related effects on Humans, pets/livestocks and wildlife
- Low increase in productivity of Crops and declined food availability in forests
- Increased frequency of wildfire/forest fire
- Migratory effects in the form of displacement caused by climatic disasters

Informal sector workers, women, children and old-age workers are mainly victimised in addition to others. Every sector of work and employment has been under the impact of climate change.

In Construction sector, high and frequent price rise is being created by climate change ultimately generating adverse effects on the cost of living of workers. Climate change is causing floods, landslides, environment problems which has resulted into declines in agricultural products. On the other hand, transportation becomes more costly and price rise has affected the living conditions of construction workers. Workers earning their livelihoods on the banks of the river and living in the temporary huts on or near the banks are suffering most. However, construction work has gone up due to climate related disasters and it has generated more employment to them. Uncertain, unpredictable and heavy rainfalls have downsized the working days in construction sector. Regularity of employment in construction sector and its sub sectors have declined in past years. Brick-kiln sector is an example in loss of employment days. Forest related construction workers are directly affected due to frequent forest fire. Wages and facilities are being curtailed by construction companies and contractors on the one hand and rescue and relief to the catastrophe-victimised workers/families by local bodies are negligible.

Tourism sector workers particularly trekking helpers and guides, mountaineering and expedition support workers have been day-to-day observers of the changes caused by the climatic conditions. Weather patterns have significantly changed in recent decades. The blooming season of Rhododendron highly attractive to high hill trekkers has also changed as the rainy season is changed with visible effects in tourism industry and related employment.

Rapidly melting snow and glaciers have caused floods, erosion of land and landslides ultimately affecting the trekking and expedition paths being used for decades and decades. Loss of life has become an increasing phenomenon with increased high degree of danger to hill porters, trekkers, touring guides, expedition support workers, sherpas and tourists. The workers have faced avalanches more than in past losing their friends and serious injuries to those who could maintain at least their life. Rescue workers have also been facing extreme weather conditions more than in past..

Workers in the tourism industry are affected both from employment and income point of view in the context of climatic changes. With changed weather conditions, rainfall in the peak tourist season has caused reduction in number of tourist and more unemployment days to the workers. Out of 2,200 trekking agencies, 375 are already closed permanently and hotels in trekking routes are in closure. The immediate effect is on travel agencies with 145 witnessed as permanently closed.

Though internal tourism is expanding fast after COVID-19, the incomes of the workers have declined as international tourists are less in comparison. Income earned is not sufficient for hand-to-mouth because employment days have become more irregular. Due to adverse effects of climatic changes, life insurance and accidental insurance have become more essential, but

informal workers working as guide and porter do not have any insurance. Guides and porters are shifting towards other jobs due to increased risks of life in high mountains.

With reduced number of tourists and reduced stay days, workers in a number of sub-sectors have been facing job loss and income loss. Airport workers, hill porters, hotel workers, restaurant workers, peasants & farmers, transport workers, street vendors in tourist places and so on are affected in the chain of employment both wage workers and self-employed ones. Sales of handicrafts and curio-goods as well as farm products decline due to less mobility of people in tourist destination and in entire routes.

Transportation sector has the most visible and effective option in the form of electric vehicles. However, government has still not realised the importance of the use of electric vehicles to cope up with climate change effects. Use of kerosene oil has been minimised by the people in their homes, but the government and business class are not serious to reduce the use of petrol and diesel from streets to highways which is continued by ignoring heavy carbon emission. As exposed in the transport, increased frequency of natural disasters mainly in rainy months is witnessed in roadblocks which cause unnecessary tension to the workers concerned. Their fooding, lodging and rest is badly affected. Costs of repairing and maintenance of automobiles increases on the one hand and the working life of the engine and vehicles deteriorates. Moreover, the life insurance and accidental insurance are not much effective as victims have to wait for long in spite of irritating administrative procedures.

The billions of Rupees invested in transport sector by private individuals and companies and mainly by self-employed transport workers have gone into danger zone increasing the risk of losses to them. Mostly the self-employed workers as investors have been in most difficult conditions with heavy burden of bank loans and interests.

### **Impacts to be addressed**

In spite of several highly significant initiatives, policies, programmes, institutional framework and mechanisms to address the serious issues of climate change both in international level and in national level, the impacts and adverse effects of worsening climatic conditions are more visible. In case of Nepal, we can point out those as follows:

- Extreme Heat, Hurricanes, Avalanches, Floods, Landslides, Wildfires etc. causing more hardships to the large sections of people
- Increased risk of Displacement of working people
- Loss of job, income and employment
- Injuries and occupational diseases with OSH problems
- Food insecurity and problem of safe water supply
- Epidemics and pandemics both foreseen and unforeseen
- Dengue virus infection in larger scale
- Malaria once eradicated now emerging again
- Wildfire incidents increasing with higher coverage of forest land
- Intervention of animals/birds in human settlements caused by food shortage in forests
- Disaster-caused changes in power equation of society aggravating inequality
- Lack of funds to address climate change impacts and adaptation
- Research and studies much lower than required on changing climate adversities

- Negligible investment on Research and Development for green technologies

## **Recommendations**

Efforts of single countries cannot make any significant difference, the whole world and entire humanity need to feel it with commitment to save the planet earth for future generation. Strong policies and concrete plans are essential, which require stronger commitments and effective mechanisms to implement zero GHG aim. Individual country like Nepal should give high priority to the use of national and international expertise as well as technical supports from international stakeholders for the purpose.

Involvement of trade unions, Agricultural Worker-friendly organizations and organizations working on climate change agenda in policy decision bodies of the federal government, provincial government and local governments along with organizations of business groups/ employers/producers is essential. However, the activities of individual organizations on their own or in cooperation/collaboration under bilateral or multilateral frame are equally appreciable.

As people's participation and hand-in-hand go ahead is the most important part of implementation, Campaigns to build awareness on climate change and overall effects in mass level are essential as the pre-disaster action.

During-disaster and post-disaster management to minimise loss of life, property and natural resources/surroundings is an unavoidable function. Mobilization of several actors and resources - local, national and international – is extremely important which requires a farsighted vision of the state to protect the victim families.

Broad-based study of the impacts of climate change and environment by the coordination of line ministries with especial focus on working population should be conducted.

Consumption of Fossil fuel as the major source must be reduced mainly in transportation. The nation needs to promote the use of electric vehicles to replace Petro-based vehicles.

Social protection for working families is to be ensured by the state through contributory social security schemes and through non-contributory welfare & social assistance measures with focus on working poor of informal economy and particularly to rural poor.

Livelihood-centred and broad-based employment generation programme of state is essential considering critical impacts of the climate change on working poor.

Awareness and trainings in local levels for Green job Generation in cooperation with investors/employers' organizations and all three tiers of government.

Measures to Protect crops and fruits and destruction from birds, monkeys, boar pigs, elephants etc. by scarecrows, fencing, driving away techniques, scaring sounds

For Expansion of tourism industry, new and comparatively safe destinations are to be explored to compensate losses in the existing destinations. Advertisement and publicity works are to be given high importance for new destinations.

Wildfire control measures should be made effective by technical solutions as well as effective awareness and involvement of masses. Community Forestry groups and their federation may be the real partner for the state.

Efforts for unconditional debt cancelation as a campaign put forward by Civil Society Organizations in international level should be given high emphasis by our tripartite plus partners and react accordingly with more strength in favour. The success of this campaign will definitely provide more financial space to work against adverse effects of climate change. Nepal may raise its voice more strongly for debt-free climate finance as a common and most relevant agenda of LDCs.

International campaign for Net Zero should be directed through more practical measures towards Real Zero. It implies that G to G, EOs to EOs, TUs to TUs and CSOs to CSOs cooperation in SAARC/Regional/International level should be given high priority by concerned organizations to fight against Climate crisis.

Common Action Points for all stakeholders:

- Best possible promotion to Greenery and Afforestation
- Minimization of the use of Fossil fuel
- Collaboration for disaster-risk management and post disaster management

Other action points should be identified by stakeholders within their jurisdiction.

*(Concerning the role of major stakeholders – Government, Employers’ Organizations, Trade Unions and Civil Society, Please go through the pages of Actor-based Recommendations)*

## 1. Introductory

### 1.1 Socio Economic situation and Agricultural Worker in political economy of Nepal

As a least Developed Country with ambitious target of successful transition to Developing country status in 2026, Nepal is going into fast changes in socio economic conditions in spite of the obstacles created by political instability. Per capita income has reached USD 1407

Annual growth rate of our population is declining, but Nepal is one of the Agricultural Worker exporting country. Employment generation is very weak due to policy instability caused by highly unstable political scenario. Investors are working under heavy uncertainties and hence unwilling to work in full capacity utilization. Therefore industries are in a status of under-capacity using less Agricultural Worker which pushes the human resource outside the international boarder. Agriculture has no more remained a reliable occupation to new generation. In spite of its contribution of 28% to GDP, it has given engagement to 2/3<sup>rd</sup> of the workforce (Wikipedia, 2021). However the formal records of engagement of 2/3<sup>rd</sup> population is not in actual reality in the field. Of the total workforce of 16.8 million as exposed by National Census 2021, those in large number considered as working in agriculture as self-employed are absentees and are already working as wage workers outside Nepal. Workers of new generation hate the traditional agriculture to plough the land using bullocks, rather they compel their fathers and grandfathers to mortgage the land in order to pay the manpower agencies for foreign employment. Thus the best period of demographic benefits having large number of young generation is being lost very fast in Nepal, which we will regret after a decade plus years.

Agriculture has been ignored by the new generation of workers, but state is not successful to attract them towards agriculture with new techniques to replace the traditional farming. In spite of investment in agriculture from the state, mismanagement has hindered the track to achieve larger/desirable land and Agricultural Worker productivity. The concept of land reform is not adequately redefined, redesigned and implemented by the state, nor the industries and services are effectively prioritised in practice. Whatever is written in the frequently changing policy papers about agriculture/industry/services, implementation in the real sense is always missing somewhere in the old/new files of ministries and departments/offices. Local bodies and district offices are also responsible for non-implementation.

The ultimate result is the outflow of workers, where push factors of frustration caused by internal scenario are combined with pull factors of globalization in the form of foreign employment. The concentration of looks is centred on international remittances whether they are Policy makers, bureaucrats and politicians or peoples, workers and middle class /working class families. At present the proportion of economically active working-age people within 15-64 years is 65.5% and the inactive ones are 34.4% (CBS, 2023). People abroad as recorded in the Census 2021 are more than 2.1 million, most of them from the working age and active-energetic-qualified ones. But the actual number working abroad is more than double of the absentee 2.1 million, because 56% of the total 6.7 million households receive remittances from abroad. Normally it is believed that 450,000 new workers enter Agricultural Worker market of Nepal, but our economy absorbs hardly 50,000 new entrants. Therefore,

workers are in compulsion in addition to their interest to join foreign employment. Current year statistics shows that within 8 months 337,144 workers have obtained work permission for foreign employment, which may reach or cross 400,000 in total at the end of this fiscal year. In totality the number of workers who obtained work permission for foreign employment had reached 3.2 million in 2015, which has gone above 5.5 million in the 8 months of current year (Economic Survey, 2022/23). Unemployment in the country is reflected in the enrolment of workers in Prime Minister Employment Programme, where 841,378 have applied for work this year, but in the eight only 14,084 workers have been employed, of course less than that of previous year. Previously in 2021/22, total enrolment in PMEPP was 782,445, of which 163,708 had been employed (Economic Survey 2022/23).

The salary and wage rate index shows good increase in last 15 years while considering the period after establishment of democratic republic. Average annual growth rate of wages and salaries from 2005/06 to 2020/21 as indicated by the national salary and wage rate index is 6.6%, sectoral breakdown is as follows:

Industrial	:	12.3%
Construction	:	3.6%
Agriculture	:	4.6%
Civil Service	:	7.1%
Public Enterprises	:	10.1%
Banks/Financial Institutions	:	28.2%
Army /police	:	16.1%
Education	:	9.1%
Private Enterprises	:	4.1%

(Source: Economic Survey, 2022/23)

In spite of significant increase in salaries and wages, the living conditions and standard are not dependent on earnings within the country because the salary and wage level are much lower. Both Consumption inequality (0.30) and Income inequality (0.32) are almost at same level as reflected by Gini Coefficient. For increased living standards, earnings remitted from abroad have contributed largely to individuals, households and economy as a whole. Hence our Agricultural Worker market is the supplier/exporter of workers and Foreign Employment law is functioning to regularise the migrating workers.

The economy of Nepal is driven basically by the fuel of international remittances. The remittance received has been as much as Rs.794 billion (Economic Survey, 2022/23) and is in increasing trend even during COVID-19 days. Our consumption pattern and consumerism are dependent on imports as domestic production is largely insufficient and import is backed up by remittances. Thus, living standard and socio-economic conditions are outward oriented, basically dependent on remittances and incomes from tourism industry. Gradually in past decades, the country has become a Agricultural Worker exporting country with larger and larger muscle drain, skill drain, and brain drain. It is also to be noted that expanding

depression in world economy has naturally affected Nepal, too. Thus, economic growth rate is estimated to go down to 2.16% compared to 5.8% of the last year, whereas inflation is estimated to stay at 7.8% in comparison to 6.3% of the last fiscal year (Economic Survey 2022/23).

It is to be noted that Agricultural Worker laws are worker-friendly to a larger extent and developed/revised after a long interaction of nearly 2 decades between employers' organization and trade unions through tripartite negotiations. The outflow of workers is not because of weaknesses in Agricultural Worker laws. Agricultural Worker laws provide timely review of minimum wages and good framework for collective bargaining for wage-increments. Fair working conditions tending towards decent work and social security framework has been ensured by Agricultural Worker Act 2017 and Social Security Act 2017, but implementation is very weak with no reliable mechanism for inspection and enforcement. Informal sector and workers in informal economy constitute as many as 66.5% of males and 59.7% of females (Wikipedia, 2021), who are not addressed by these laws to a larger extent. As a part of informal economy, child Agricultural Worker and forced Agricultural Worker are still significant though in a declining phase.

Moreover, Agricultural Worker Act 2017 and Social Security Act 2017 are basic laws in general, whereas sectoral rules and regulations are several including those for civil service and public enterprises. Workers in public sector are better protected and more benefitted which facilitates them to act more aggressively, whereas workers in private sector are in miserable conditions and with very low degree of aggressiveness. Workers' mobility from rural agricultural sector to urban informal economy and international mobility both from rural and urban areas is heavy in a mass scale. The economic implication is in rising living standard and diversified consumption pattern of working families based on mainly international remittances, which has pushed merchandise imports high up.

## **1.2. Climate change and its impacts in General and on Agricultural Worker**

Even in the beginning of 21<sup>st</sup> Century, people used to consider climate change as a future problem, but ultimately it has been witnessed as a problem of present-day life. Those few in international level, keeping an eye on the disastrous realities indicating danger in near future continued to work on the issue. The earlier initiatives may be summed up as follows:

- The first international environmental summit, Stockholm 1972
- The First World Climate Conference 1979
- Toronto Conference on Changing Climate 1988
- Establishment of Intergovernmental Panel on Climate Change (IPCC), 1988

As a result, UN Earth Summit in 1992 produced UN Framework Convention on Climate Change (UNFCCC) as the First Global Agreement on Climate Change to address the problem effectively. The sensitivity created by scientists from past decades was shared by 198 countries in ratifying the UNFCCC. It was designed with firm determination to prevent dangerous human interference in the climate system. After this realistic agreement on world level, Conference of Parties (CoP) to be held annually has become an international practice. CoP has been entrusted the role of decision-making body of UNFCCC, where countries

collectively review the convention and take appropriate decisions for implementation to the required extent.

Moreover, Kyoto Protocol was designed as a follow up instrument in 1997 signed by 192 parties. Various initiatives on the issue of climate change concerning the planet, life and humanity were carried on in the same track with broadened periphery and outlook. The Kyoto Protocol has been given high importance as international law in 2005. Kyoto Protocol could set GHG reduction targets for industrialised countries in a timebound frame.

Concerning the implications on workers and livelihoods, International Agricultural Worker Organization Paid high emphasis for the first time in 303<sup>rd</sup> session of international Agricultural Worker conference. the Governing Body issued Employment and Agricultural Worker Market Implications of Climate Change as the 4<sup>th</sup> item on the agenda. ILO analysed that developing countries and LDCs contributed least to emissions causing climatic changes, but are suffering the most, vulnerable and least able to adapt to extreme environmental events. ILO also observed that heavily populated areas and with economic sectors most dependent on weather like agriculture and tourism are most affected. Impact of climate change has negative gender dimension and women are suffering more than men. These poverty-suffering countries as the most vulnerable to natural disasters, also have migration outflows and political tensions, but have least social protection provisions and coverage. ILO also emphasized strategies for green jobs and the need for economic restructuring (ILO, 2008).

ILO discussed the issues related to climate change in 102<sup>nd</sup> session of international Agricultural Worker conference in 2013 and highlighted the importance of a transition to low-carbon world of work. As it is well known, action against climate change is central to the United Nations 2030 Agenda for Sustainable Development under Goal 13 including Goal 8 on Decent Work and Economic Growth.

Moreover in 2017, ILO came to the conclusion that uncontrolled climate impacts will cause damage to infrastructure, disrupt economic activities and destroy jobs and livelihoods on an unprecedented scale (ILO, 2017).

Doha Amendment was successful to extend Commitments of Kyoto Protocol to 2020 (Rauniyar 2022).

Finally Paris Agreement was reached as the outcome of 21<sup>st</sup> Conference of parties to the UNFCCC, which proved to be a landmark agreement. Altogether 175 world leaders signed Paris Agreement in 2016 and 194 countries unanimously ratified it.

Millenium Development goals had not directly addressed the issue, but the succeeding Sustainable Development goals covered Climate Action as its Goal 13.

CoP 26 held in Glasgow has been very important to follow up the Paris Agreement with more realistic and strong commitments. Ambitious plan of Carbon emission minimising and pressurising the Big Polluters like USA, China, India, Australia has been highly significant during and after Galsgow Conference. A 2-weeks continued discussion of the world leaders on climagte change, its impacts and how to save earth and humanity was unique compared to past. However the Glasgow climate Agreement could not satisfy the actual concerns of LDCs for higher flow of climate finance and compensation. No new funds for the purpose could be

be declared in spite of strong efforts. The commitment of USA and China to work jointly for low carbon emission and that of China and India to reduce the use of coal and mineral fuel have not been witnessed in real practice in 2022 and 2023. The issue of Loss and damage was at the top in all discussions during the summit, but no agreement was signed (e-kantipur, Nov 14, 2021). The request to developed and powerful countries to double their financial assistance to LDCs and developing countries remained just a request mainly because of their unwillingness and partly because of COVID-19 and Russia-Ukraine war.

Latest IPCC report issued on March 2023 has issued an alarming report concerning climate change. This synthesis report provides the most comprehensive and scientific assessment of climate change. Key findings (Boehm and Schumer, 2023) can be summarised as follows:

- Human-induced global warming of 1.1 degree C has spurred changes to the earth's climate that are unprecedented in recent human history. Last decade is warmer than any period for 125,000 years.
- Climate impacts on people and ecosystems are more widespread and severe than expected, for example 950 million people at the drylands will experience water/heat stress and desertification, whereas share of the global population exposed to flooding will rise by 24% even if global temperature rise will limit at 1.5-degree Centigrade.
- Ecosystem-based Adaptation measures can effectively build resilience and protect lives and livelihoods, but more finance is needed.
- Some climate impacts are already so severe which cannot be adapted and lead to losses and damages. Urgent action is needed to avert, minimise and address these losses and damages.
- Global GHG emissions will be at 1.5 degrees C before 2025 under a high-emissions pathway.
- The world must rapidly shift away from burning fossil fuels as it is the number 1 cause of the climate crisis.
- We need urgent systemwide transformation to ensure a climate-resilient future by ensuring strict measures (Retire coal plants, invest in clean energy, decarbonise buildings, shift to electric vehicles, increase public transport-cycling-walking, decarbonizing aviation/shipping, halt deforestation, reduce food loss/waste and eat more plants - less meat)
- Climate finance must be increased for both mitigation and adaptation.
- Just transition is to be ensured as top 10% income gaining households emit 45% of the world's GHGs, while those with bottom 50% of the income emit 15% of the world's GHGs.

Thus, the report not only exposes a horrifying picture of the climate realities, but also identifies effective measures to address the negative impacts for a secured future. The world is not moving towards limiting the global warming to 1.5 degree C as committed in Glasgow Conference CoP 26, hence the target of Net Zero emission seems quite far and needs full-fledged action worldwide.

Moreover, Carbon Dioxide emission is around 50 billion metric tons at present, which is the major source of Climate crisis. Global GHG Emissions by human activities are horrifying if we go to view the data:

By Gas: Carbon Dioxide (through Fossil Fuel & industrial processes)	65%	
Carbon dioxide (through Forestry and other land-use)	11%	
Methane	16%	
Nitrous Oxide	6%	
Fluorinated Gases	2%	
By Sectors: Electricity and Heat Production	25%	
Agriculture, Forestry & other land use	24%	
Industry	21%	
Transportation	14%	
Buildings	6%	
Other types of energy	10%	
By Country: Global Carbon dioxide emissions from Fossil Fuel and Industrial processes		
	2014	2018
China	30%	26.1%
USA	15%	13.4%
EU	9%	7.6%
India	7%	6.5%
Russia	5%	5.6%
Japan	4%	2.6%
Others	30%	

(Source: United States Environmental Protection Agency, Global GHG Emissions Data, February 15, 2023, [www.epa.gov](http://www.epa.gov)) and GHG emissions 2018 by Country, Centre for Climate And Energy Solutions, [www.c2es.org](http://www.c2es.org))

GHG emission by human activities is the largest driver of adverse climate change. About 60% of GHG emissions is contributed by 10 countries including China, USA, India, Indonesia, Brazil, Japan, Iran, Canada, Saudi Arabia and Germany. On the contrary, the 100 least emitting 100 countries contribute less than 3 %. Looking at per capita GHG emission, statistics show that USA, Russia, Japan, China, European Union, Brazil and India are the top emitters in the planet (Climate Watch, 2023).

Larger Natural disasters basically caused by climate changes generated by human activities during last 5 decades as revealed by UN Report in March 2023 have been 11,778 in number during 1970-2021, of which 90% of these have been faced by LDCs and developing countries. The loss of human lives has been as much as 2 million and economic loss is approximately \$ 4.3 trillion, (Kantipur, May 23, 2023).

The Synthesis Report of 6<sup>th</sup> Assessment Report of United Nations mentions the prescription by the research of 8 Berkeley scientists. The research concludes that Renewable Energy, Energy Efficiency, Electric Vehicles, Recyclable Materials and Carbon Capture & Storage across all sectors are needed to slow the pace of climate change (Dugue, 2023)

We in the Himalayan region are more vulnerable as the temperature of Himalayan range is increasing at a higher rate compared to average rate of the entire world. The adverse impact is more visible and critical in Trans-Himalayan range as the climate change is more aggressive with 1 degree C higher at every 160 meters of altitude (Adhikari, 2023). But the analysis of the results, effects and impacts of climate change also makes us to think about the past and current activities responsible for this climate crisis. The world order based on profit greed of multinational companies and power politics in international level is responsible for extreme exploitation of nature and natural resources. War and militarization have further aggravated the crisis.

As overwhelming majority of population everywhere consists of the working-class people, the adversities created by the climatic changes victimise working people. Workers in every sector of work and employment, of livelihood and earnings from subsistence farming to modern ones are being affected increasingly every year.

### **1.3. Objectives of the study**

- To Assess the impact of climate change and transition in socio-economic sectors and Agricultural Worker market with specific focus on tourism, transportation and construction sectors
- To capture various perspectives of policy framework and also highlight good practices and identify gaps and accordingly propose action points.
- To keep way forward the effective recommendations including Nepal Government, Business and Employers and Trade Unions to mitigate the negative impacts of climate change in the Agricultural Worker market and to the workers.

### **1.4. Methodology and Limitations**

The Proposed Study is not focussed to the grassroots data collection and analysis in a broader frame but limited to the understanding of central level stakeholders. The assumption is that their knowledge is based on grassroots realities being witnessed at the present time.

Hence, the methodology has been confined to

- Stakeholders' consultation to capture their understanding, current situation, initiatives and policy level thinking.
- Key Informant Interviews
- FGDs covering basically workers and trade union leaders in Kathmandu

These three levels of interaction with tripartite partners plus relevant NGOs working on the issue of climate change will be summed up and conclusions derived.

On the basis of the sum up and conclusions through consultation, KIIs and FGDs, recommendations in two tracks have been put forward – Policy Recommendations and Recommendation to shape the role of major stakeholders.

Considering the extremely short time frame for the study, only a rapid assessment was possible. Qualitative method has been adopted with no statistical and mathematical tools to use for the analysis. Field work has been limited to Kathmandu valley based on central level of concerned organizations and stakeholders.

## 2. Impact of Climate Change: Situation in Nepal

### 2.1. Review of the general situation in Nepal

LDCs have been more vulnerable to climate disasters and are facing larger impacts compared to developed countries. African LDCs are under hardest hit by droughts and famines, whereas coastal and island LDCs have become increasingly vulnerable to storms more than in past. The UN-defined 46 LDCs within 2017-2021 have suffered roughly 67 weather, climate and water-related hazards in an average, with adverse effects on 25 million peoples (LDC Watch, 2023). The LDCs with nearly 1 billion population in total are collectively responsible for just 1.1 of global emission but are at the frontlines of climate catastrophe. Key regional impacts of climate change in LDCs (LDC Watch, 2022) can be summarised as follows:

Asia Pacific	More intense cyclones and droughts Failure of subsistence crops Spread of diseases like Dangué and Malaria Extreme climate events affecting health, security and livelihoods
Africa	Temperature increase and heat waves Extensive floods and tropical cyclones Prolonged droughts Sea-level rise causing loss of lives and property Displacement in mass scale
Island & Coastal	Sea-level rise and Degradation of Fresh ground water More intense cyclones Losses of coral reefs

Though LDCs are least contributors of GHG emission, the big emitters have not supported yet to a visible extent for loss and damage caused by the climate change impacts in LDCs.

From Seoul, on May 3, 2023, the 56<sup>th</sup> Annual Meeting of Asian Development Bank has declared an ambitious but realistic programme Innovative Financial Facility For Climate In Asia & The Pacific with allocation of \$ 3 billion (IF-CAP). It is designed in accordance with the target of providing \$ 100 billion as climate Finance during 2019-2030 to developing countries. ADB has aimed at developing action programmes to ensure the target of Paris Agreement within 2025. ADB is determined to invest zero in coal and invest more and more in renewable energy. Founding partners of IF-CAP are Denmark, Japan, South Korea, Sweden, UK and USA. As ADB 56<sup>th</sup> meeting has reconfirmed a total

of 40% climate disasters have been witnessed in Asia-Pacific during 2000-2022, which caused casualty of 1 million persons and 3.5 million have been affected by the disasters (ADB, May 2, 2023). ADB has declared that this programme is the first by size and coverage and that this programme will ensure drastic change in climate finance. Definitely Nepal will be one of the beneficiary nations of the programme. Nepal is in a difficult geographical point of the globe having unique altitude range with diverse climatic and weather conditions.

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**BOX 1 : Climatic Zones of Nepal**

Zones	Category	Altitude	Average Annual Temperature
High Himal	Tundra and Arctic	Above 5,000 meter	3-10 degree C
High Mountains	Alpine and sub alpine	3,000-5,000 meter	3-10 degree C
Mid Mountains	Cool and warm	1,000-3,000 meter	10-20 degree C
Siwalic (Chure)	Sub-tropical	500-1,000 meter	20-25 degree C
Terai (Plain Area)	Tropical	Below 500 meter	20-25 degree C

(Source: Government of Nepal MoFE, Nepal's National Adoption Plan Process: Reflections on Lessons Learned and The Way Forward, 2018, <https://www.Napglobalnetwork.org>)

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The diverse and wide-ranging climatic zones reflect the actual vulnerability of Nepal with fast changing climatic and environmental conditions. The impacts of such changes are more visible with high degree of clarity in recent years having far-reaching effects on livelihood and life of the people in addition to land, resources, infrastructures and development process.

Hence Nepal is considered as one of the most vulnerable countries among the LDCs to the effects of climate change. Floods and landslides destroy tens of thousands of houses and vast areas of farmland and roads ever year. Germanwatch's Climate Risk Index judged Nepal as the 9<sup>th</sup> hardest-hit nation by climate related calamities during 1999-2018. Likewise, the analysis of trend from 1971 to 2014 by the Department of Hydrology and Meteorology has shown that average annual maximum temperature is increasing by 0.056 degree C per year (Wikipedia). Naturally effects of Green House Gases are mostly responsible for the adverse situation which basically comes from forestry sector. The alarming consequences of global warming are resulting directly into floods, soil erosion, landslides and drought in several parts of the country.

Another important terrible generator of carbon emission is forest fire or wild fire in Nepal. Forest fire is a disaster causing heavy environmental and ecological impacts on wildlife, human life and livelihoods. Between 2001-2018, a total 7.2 billion hectares of forest land in average 400 million hectares per year have been burnt worldwide. The incomparable loss caused by the most terrible forest fire in Australia in 2021/22 is always memorable, which could not be end up by human efforts and continued for 5 months. Finally nature itself put an end to the Australian wild fire by heavy rainfall. The share of

wildfire is 40,000 hectares of forest land in Nepal every year as recorded in 2021 (Misra & others, 2023). Based on recent information, the district of Gulmi alone has suffered wildfire in 51 places within Jan-Mar 2023 with casualty of 4 persons (Kalakarmi, Apr 22, 2023).

Nepal designed its Climate Change Policy explicitly in 2011. However in 2001, MDGs initiatives and in 2003 Sustainable Development Agenda for Nepal, the issue of Climate Change was addressed as early initiatives. Kalapatthar Declaration through Cabinet meeting of Nepal in remote snowy altitude in 2009 may be considered as one of the milestones in this regard. Similarly, South Asian Regional Climate Change Conference entitled From Kathmandu To Copenhagen was held and MoU was signed by 14 donors and Development Partners to support Nepal on climate change activities. For the first time Status paper on climate change situation was prepared targeting CoP 15. During the same year, Climate Change Council was formed under the chairmanship of Prime Minister. Interim Constitution of Nepal 2007 and Constitution of Nepal 2015 also addressed the issue of climate change. Various economic plans from interim 3-year plan (2008-10) to the present planning process also included the issue as an important part of development process of Nepal.

In 2010, Climate Change Management Division was established under the ministry of forest and environment. National Adaptation Programmes of Action as well as Local Adaptation programmes of Action have been launched forward.

The Climate Change Policy issued in 2011 (Unofficial translation approved by Government of Nepal, 2011) highlights the following problems considering the context of climate change impacts in Nepal:

- Very few studies on effects and likely impacts
- Lack of scientific evaluation on types and degrees of impacts on geographical and development sectors.
- No detailed surveys and monitoring continuity of melting of snow & glaciers lake outbursts.
- No detailed impact assessment of climate change on agriculture, water resources, forest & biodiversity, public health, disaster incidences, tourism and other sectors.

Hence, the Policy has been focused on 5 major challenges:

- Challenges related to data, evaluation and assessment.
- Minimizing the lack of an effective framework to address the adverse impacts of climate change
- Designing programmes for avoiding, minimizing or adapting to the changing climate by developing appropriate technologies for risk reduction and disaster preparedness
- Capacity building and desirable organizational structure
- Challenges concerning always insufficient human and financial resources

However, it could not pay attention to the impacts being faced by the working people. The Climate change policy was issued with the Vision of limiting the impacts of climate change through environmental conservation and sustainable development. The Mission set by the policy paper in general is to address the adverse impacts of climate change and to encourage climate-friendly change with focus on livelihoods protection/improvement

(Government of Nepal, 2011). Based on the vision and mission, 7-Policy areas were identified:

- Climate adaptation and disaster risk reduction
- Low carbon development and climate resilience
- Access to financial resources and utilization
- Capacity building, peoples' participation and empowerment
- Study and research
- Technology development, transfer and utilization
- Climate-friendly natural resource management

Based on these significant policies/activities to address the climate change impacts, Nepal has redesigned Climate Change Policy in 2019. In addition to it, several policies and plans have been launched forward in combination to deal with the cross-cutting issues relevant in the changing/worsening climatic conditions. We can mention those including Environment Protection Act 2019, National Environment Policy 2019, Environment Protection Regulation 2020, Framework of Local Adaptation Plans of Action 2019 based on National Adaptation Programmes of Action 2010, Disaster Risk Reduction National Strategic Plan of Action 2018-2030 and so on.

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#### BOX 2 : Key Policy Priorities of Nepal on Climate change

- Formulation of Climate Change Strategy and Action plan by 2021
- Formulation of Climate Resilient Planning and Budgeting Guidelines by 2021
- Formulation of National Adaptation Plan by 2021
- Developing a NAP Monitoring, Reviewing and Reporting Framework by 2022
- Updating of NAP in an interval of every decade
- Carrying out Vulnerability and Risk Assessment every five years
- Formulating a Climate Finance Strategy and National Capacity on Climate Finance Management by 2022
- Establishment of Climate Information System by 2025
- Establishment of Institutional mechanisms by 2025 including Environment Protection and Climate Change Management National Council, Inter-Ministerial Climate Change Coordination Committee, Thematic and Cross-Cutting Working Groups, Climate Change Research Centre, Climate Change Coordination Committee in Province Levels and relevant local level institutional structures
- Preparation of strategy and action plan for gender-responsive climate-smart technologies by 2025
- Inclusion of Climate-change related education in secondary schools and mobilization of 2000 climate change adaptation resource persons in schools
- Integration of climate and weather information in Climate-sensitive diseases surveillance systems by 2025
- Formulation of national strategy and action plan on loss and damage concerning the impacts of climate change by 2025
- Establishment of a multi-hazard monitoring and early warning system in all 7 provinces by 2030
- Ensuring the preparation and implementation of climate resilient and gender responsive adaptation plans in all 753 local bodies by 2030

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During Glasgow Conference, the CoP-26, bilateral and multilateral agreements on climate change and low emission were witnessed. Nepal also signed an agreement to sell 30 million tons of carbon from three provinces – Bagmati, Lumbini and Gandaki and to get \$ 360 million at a rate of \$ 10 per ton of carbon. Nepal has gained the benefits of community forests of Nepal which has been the successful model in recent decades. Along with Nepal, Ecuador, Ghana, Vietnam and Costa Rica have also signed the agreements. Previously in February 2021, Nepal has signed to get Rs. 5 billion with World Bank in exchange for 9 million tons of carbon from Bagmati Province to western districts of Terai (e-kantipur, Nov 14, 2021)

But if we continue to use the fossil fuel as the major source of energy in our widely expanding transportation, other efforts will be useless to minimise GHG emission and air pollution. In recent years before COVID-19, there was steep increase in the consumption trend of fossil fuel while viewing statistics of imports of petrol and diesel from FY 065/66 to FY 074/75. The 10-year data in total shows that import of petrol increased by 280%, that of diesel by 225% and LPG by 220% based on Nepal Oil Corporation (Digo Bikas Institute, 2020). The Government of Nepal and people in the cities have responded seriously and based on commitment for Paris Agreement as well as electricity ease by zero load-shedding position, the use of fossil fuel has started to decline. At least the promotion to electric vehicle imports by Bagmati Province government to reduce fossil fuel in use in most populated Kathmandu valley may be more effective in days to come.

However, it is really unfortunate that incidents of wildfire or forest-fire are in increasing trend. Based on the information of Department of Forest & Soil Conservation, every year 200,000 hectares of forest area is damaged by forest-fire. In the year 2079 B.S.(2022/23) there was wildfire in 3010 places of forest-land, where 109 persons lost lives, 394 injured and 3,723 households were victimised. The loss in money terms was as much as Rs. 2.51 billion (e-kantipur, April 25, 2023). Air pollution in total is the cause of death of 42,100 persons annually in Nepal out of 7 million deaths worldwide as WHO exposes. Kathmandu Valley has air pollution 5 times higher than the standard set by WHO, mainly caused by dust particles and smoke from brick factories and automobiles (ekantipur, April 25, 2023).

GHG emission in Nepal is also increasing with increased population and urbanization. In 1990 , it was 20 million metric ton, which has gone up to 48.4 million metric ton in 2019. However in spite of increasing trend, it is less than global average. Though commitments are highly significant, but budgetary arrangements are only slightly changed. In the year 2075/76, climate change budget was 4.61% which increased to 5.90% of the total annual national budget. Indirect financing on climate change was 32.62% in 1975, which declined to 28.08% in 2079/80 (Economic Survey, 2022/23). It indicates that direct financing through annual budget has increased, and indirect financing has gone into direct budgeting. Initially 8 Municipalities are operating Climate Model Programmes. In 2021/22, Government conducted monitoring and supervision of environmental pollution in 68 big enterprises. Environment impact assessment of every project has been made regular. Air pollution by automobiles is being monitored and penalties are strict.

Altogether 29 air pollution measuring centres are functioning. Likewise at local municipality level, 241 climate adaptation plans are being implemented.

As the world commits for efforts to Net Zero Transition, Nepal as a part of the world community needs step by step planned moves towards Net Zero carbon emission. However, in order to move effectively in the real sense towards Net Zero Emission, the earth needs to reduce energy and material waste and ensure sustainable land use in a new policy-frame. The world needs move towards zero use of fossil fuel. It requires heavy investment to finance this transition. The investment should pave way for clean energy, clean industry and clean manufacturing which is necessary for Net Zero Cities (World Economic Forum, 2023). Efforts of Nepal are essential condition for us, and global efforts must prove to be sufficient condition. Even if Nepal works seriously in full fledged manner on climate agenda, we cannot save our environment, Himalayas, our land and people unless the entire world moves towards Real Zero.

## **2.2. Impact on the lives of Nepali workers**

As far as the policies of the government of Nepal are concerned, these climate change policies and adaptation plans and strategies are of highly technical nature and hence less responsive towards the day-to-day problems of workers and livelihood.

Normally impact on workers and working families can be categorised into the following broad categories:

- Mass level or location-based effects faced by the entire population and households, loss of agricultural land and fixed properties
- Employment and income effects through direct climate change impact in Agricultural Worker market
- Health related effects on Humans, pets/livestock and wildlife
- Low increases in productivity of crops and declined food products from forest causing increased degree of food insecurity
- Increasing incidents of wildfire/forest fire
- Migratory effects in the form of displacement caused by climatic disasters

Climate Change has adversely affected females, children, disadvantaged people, poor, marginalised and small land holding farmers as these groups have very weak coping capacity (Anup KC, 2017)

Tourism industry was hard hit by the COVID-19 crisis. Only in last quarter of 2022 and this ongoing first half of 2023, it has started to revive significantly. At the end of 2022, in 6-months period, unexpected increase in number of tourists has been witnessed as 614,869 in total. However, the average stay days is more or less stable and is 13.2 days. Last year in mountaineering/expedition also, altogether 1,952 groups and 8,468 persons entered Nepal (Economic Survey, 2022/23). These numbers cannot be maintained in the current situation of climate change aggravating the risks. The infrastructure developed before COVID-19 in terms of number of hotels and beds has been 1401 hotels of tourist standard, of which star hotels are 173, while number of beds are 53,365, of which 16,335 are in star hotels

(Economic Survey, 2022/23). With increased climate risk and possibilities of disasters, the occupancy rates may go downwards sharply. climate is highly significant for tourists in choice of their destination; hence climate crisis has adverse effects in number and stay-days of tourists. Suffering of workers not only in trekking-mountaineering-rafting sub sectors, but also in hotels-restaurants-catering sub sectors are increasingly witnessed where job-loss and even the loss of seasonal employment is quite visible.

Adversely changing climate conditions have been pushing multiple vulnerabilities against the people. Livelihoods are more sensitive to changing climate conditions as our agriculture and farming still function under rain-fed dependency. Floods in rainy seasons and shortage of water from traditional sources in all seasons have impacts on humans as well as pets. Forests have nowadays become foodless for wild animals as well as pet livestock. Livestock farming has not much developed in modern frame, but it is downsizing in traditional household frame. Thus livestock-based employment is going down. Combined effects of all natural catastrophes having close links with climate change are basically reflected in food insecurity at household level in mass scale as climate impact is deepening on rural subsistence production. Traditional Role of Forests as food producer is declining which pushes animals and birds including parrots, boar pigs, monkeys, elephants, deer to human dwellings and farm areas in the form of destruction of crops (IFRC- Climate Centre, 2021).

On the other hand, tourism industry has been understood to generate seasonal employment and additional incomes for rural population, but climate change has created negative pressure on tourism industry ultimately causing the non-farm livelihood of rural households. The threat by climate change to the tourism infrastructures mainly hotels, roads, trekking pathways and cultural heritages hit finally the livelihood of people.

Looking at the transport sector, it is one of the fastest growing sectors in Nepal, same as in the world, because more than 90 % of the fuel used in transportation consists of different varieties of fossil fuels. Globally, 27 % of the total GHG emission as recorded in 2020 was from transport sector. As transport sector is growing very fast compared to all other sectors in Nepal, altogether 36% of Nepal's total energy-related GHG emission is contributed by transport alone. In Between 2011-2016, carbon emission by road-transport had a surprising growth rate of 113.5 %, which Placed Nepal at the top-10 country in terms of projected transport sector growth heading towards 2050 (Budhathoki 2022).

Mortality, injuries, diseases and direct/indirect health effects continue to increase due to climate change. Nepal is the 20<sup>th</sup> among the most disaster-facing countries and 44<sup>th</sup> in ranking among countries highly vulnerable to climate change. As estimated, Nepal faces nearly 500 disaster events every year (IFRC, 2021).

Likewise, under the current situation of fast increasing emission, heat-related deaths as analysed by WHO may increase from 4 deaths to 53 deaths per 100,000 people every year by 2080 (IFRC 2021). It indicates that currently heat-related deaths are 1164 in total population of Nepal, which may rise above 15,423 even in the same ratio. Climate change may push up vector-borne diseases like dengue fever, Japanese encephalitis, malaria etc. all over Nepal also in high mountain areas. On the other hand, the frequent extreme weather events may damage our poor water supply infrastructure in addition to contamination of existing water sources. Increasing temperature is resulting into drying up of traditional natural water sources. Poorest groups and naturally the working people become the first to suffer of water

supply problems, who are suffering at present, too. Water supply problem definitely further aggravates the sanitation problem causing higher expansion of diseases, malnutrition and deaths. It implies that expenses on health which are beyond the affordability of working-class households even today will go to a sharp upward shift. These impacts will be naturally concentrated on majority of the working people mostly in informal sector and also in the formal sectors of employment.

Poor Agricultural Worker-absorption capacity of Nepal's Agricultural Worker market, as observed in past and present, naturally pushes new entrants of Agricultural Worker market to cross the international borders of Nepal, both by land and by air. The displacement effect of climate change is continuously resulting into rural to urban mobility of working families and as a second stage to cross border mobility. Young generation in urban centres is directly mobile to foreign land, most of them educated. Weak capital expenditure of government on development works as witnessed in past fiscal years limited to nearly 50% of the annual budget and almost stagnant character has become a continued phenomenon. Manufacturing sector is unable to create more jobs in Agricultural Worker market. This situation is aggravated by climate change by further contraction of tourism industry resulting into more loss of jobs. Disasters generate jobs in construction sector, but poor capital expenditure of the government is the major obstacle to generate more employment in construction sector. Displacement caused by climatic disasters effects not only wage employment but also self-employment.

Agricultural Worker market in Nepal is naturally an unfair Agricultural Worker market which is tilted towards existing income inequality. Gini coefficient reflects this inequality. Unfair Agricultural Worker market can be transformed into a fair Agricultural Worker market through broad-based collective bargaining system and effective Agricultural Worker inspection system at grassroots in addition to timely wage increases, reduction in gender pay-gap, comprehensive social protection framework and efficient disaster management capacity of the state and institutions. In the context of weak effectiveness of these factors, climate change impacts become more and more victimising.

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**BOX 3: Losses in 23 days**

During 23 Days in the beginning of monsoon from June 14 to July 6 in 2023, altogether 64 districts faced damaging effects of rainfall, flood and landslide. Mainly in Koshi Province, 34 persons lost life and 25 disappeared. Whereas 21 persons were rescued of which 15 by helicopter. Number of totally damaged houses is as much as 54 and partially damaged 20 with loss of NRs. 61.6 million. People lost 264 livestock in these 3 weeks.

In highways of the country, road damage was in 66 places. Number of Bridges in the highways completely broken was 9, and suspension bridges gone with the water in flooded rivers are 22. The loss estimates of road and bridges has been as much as NRs. 521 million.

On the other hand, damaging effect to the micro hydel projects is nearly 1496.5 KWs with a loss of NRs. 9,000 million. The loss in drinking water supply projects was equivalent to NRs. 9.2 million. Irrigation projects in several places now need millions of Rupees to maintain normal functioning as a result of flooding.

*(Based on online news of Baarahkhari, [www.baahrakhari.com](http://www.baahrakhari.com), July 7, 2023)*

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### **2.3. Stakeholders' consultation and Key informant interviews**

Climate change has created crisis for the entire planet mainly due to emphasis on physical development based on exploitation of nature and natural resources on the surface of earth as well as within the earth. Human Development and Happiness to all has been ignored by the advanced countries in their power games which has always promoted the profit-race of MNCs and big companies/corporations. Capital-led globalization has always ignored the sufferings of working masses and governments have tilted towards interest of capital by suppressing rights and interests of workers in the real sense. Key informants with analytical thoughts have thus gone into the depth of root cause of climate crisis. Majority of Development projects/activities and mega investments have been violating the norms of sustainable development. The conflicting/violating relation with nature has exploited resources worldwide, which has directly affected the livelihood and lifestyles and living conditions of people everywhere. Hence overwhelming number of workers and working families have been the victims of climatic disasters.

Key informants also opined that even among the workers, women are more victimised, but the researchers have not gone into gender dimension of the climate crisis.

Fast changing bio-diversity scenarios have caused floods and landslides (in dry seasons also) with immediate effects on Natural beauty of the hills and mountains. It is common observation of high mountain tourists and assisting workers that Himalayas are turning into black from snow white form. Heavy melting of snow and non-seasonal heavy rains have changed the environment as a part of climate change. Risks in high mountain trekking and expedition are more visible.

Weather conditions in mountains and high hill areas have become more uncertain and unpredictable, which naturally distracts the tourists. Stakeholders have observed that even the base camps mainly Everest Base Camp (EBC) and Annapurna Base Camp (ABC) are affected adversely because of hurricanes, heavy rainfalls and avalanches. Number of tourists and their staying days may go to decline causing reduced employment days to guides, trekking helpers, rafting workers, porters, hotel-restaurants-lodge workers and other concerned workers. Agricultural Worker in tourism sector has declined these days as a combined effects of climate change and COVID-19. Investment of the employers has lost the possibility of profits downsizing the employment of the workers (however in short period after COVID-19 at lowest point, number of tourists has increased at the end of 2022).

Flooding in the rainy season and even in dry season months are in increasing trend, whereas the desirable sources of water are declining resulting into lack of even drinking water. Naturally the hardship and sufferings are concentrated in low-income groups both in rural and urban employment. Conflicting scenario of flooding and desertification are moving parallel with result of loss of agricultural land, displacement of families, low paddy production and other food crops, deteriorating quality of drinking water to majority people and loss of livelihood to the people.

Moreover, occupational safety and health agenda including various occupation diseases has become more relevant in the context of climate change. GHG emission and air

pollution have caused increases in respiratory problems, urological and kidney problems, heart-related problems, depression and mental problems affecting the health and productivity of the workers.

Increased inequality is also aggravated by climatic change with worsening weather conditions due to loss of livelihood and incomes. The farm-based and forest based poor households with no other options are the most marginalised segment of the society in climate crisis. The climate crisis has affected farming significantly in combination with changing attitudes of young generation, hence people from subsistence farming are mostly outflowing to Malaysia and gulf countries making large number of households dependent on remittances.

Though expansion of road transport is faster, the cost of road building and bridge building has gone up and up. Frequent repairing and reconstruction have been highly cost-pushing on the one hand and always hindering the smooth flow of transporting goods and people being witnessed more and more. Frequent damages in road-infrastructures and obstruction in road transport has been a common phenomenon as prior preparation to cope with the climate-caused events is weak. Hence accidents and health hazards have multiplied both for transport workers and passengers. With increased worsening climatic incidents, income insecurity and wage-theft for wage workers and indebtedness for self-employed workers are more visible in recent days. Though stakeholders talk about need to push up the use of EVs, Government has not prioritised the development of infrastructures for operation of EVs. In addition to direct mobility of commodities, transportation problem is affecting production and supplies as well as human mobility and Agricultural Worker mobility. Therefore, New transport policy in consultation with employers and trade unions as well as with other stakeholders is an urgent demand.

Worsening climatic conditions have further aggravated the expansion of Dangué Fever not only in terai belt but also in Hilly region. Malaria was eradicated few decades ago, but it re-emerged probably due to worsening climatic conditions. Mosquito caused Dangué has become a threat to the people. Though all segments of population are affected by Dangué fever, Agricultural workers and construction workers are more victimised among the workers.

Similarly, Key informants observe that increasing wildfire in forests mainly in hilly areas is also a visible impact of climate change. The loss of forest land and jungle-food sources have caused aggressiveness in monkeys and other wild animals with increasing crop damage and home theft of food materials.

As it is believed, the adaptation to climate change and measures to minimise GHG emissions can generate cleaner and greener jobs. In order to save our Himalayas, biodiversity, wildlife, natural beauty and safe living conditions to the millions, environment protection must be a top priority agenda of the country. Hence every stakeholder should be serious in practical terms, of course, state must be the real leader to ensure clean energy, clean industry, green jobs and nature-friendly development activities.

Key informants pointed critically that knowledge development work is always in preference in the case of climate change, but realistic policies, rules/regulations, plans and activities have not been designed in Nepal for actual implementation, most of these are normally developed for public consumption. Hot indoor discussions are being conducted for nearly 2 decades, whereas practical response to climate crisis is still too weak. It is because of the fact that we do not focus our attention on local level realities of climate change, but accept whatever is analysed/prescribed by the studies/publications of outsiders. Thinking and action on needs of local level people and their endowment is always lacking.

In case of transportation and mobility of people in local level, use of fossil fuel can be reduced through change in the existing habit of consumer/citizens. For instance, engine can be stopped in red signal stoppage. More increased use of bicycle is an easy alternate, too. Moreover, what new life-styles are essential in the new context of climate change must be identified and widely disseminated among the people both in rural and urban areas.

Electricity should be made cheaper (lower price – higher use) so that the life style of people may be diverted towards maximum use of electricity in place of diesel, petrol, cooking gas, firewood etc. The Pricing policy of government should be revised. Simultaneously, at the top political level, interaction and agreement with India is essential to export electricity in good prices. Currently, India is not ready to import our electricity of those hydel projects which are under bilateral/multilateral agreement with third countries. It is also a fact that India is not producing electricity in the hydel projects under Nepal-India Cooperation and just makes agreement to engage us not to produce in actual practice. For cheaper and sufficient hydro electricity production to replace fossil fuels, Policies of both Nepal and India need to be changed.

Stakeholders also highlighted the need to insert issue of climate change in high school courses for basic knowledge and awareness considering the overall impacts of climate-adversities on every aspect of living and working conditions of people. How to make daily work of the people environment friendly is an important issue which needs proper attention by the government/employers and needs intensive sectoral research.

#### **2.4. FGDs in 3 Selected sectors**

Construction sector participants have been of the view that high and frequent price rise is being created by climate change ultimately generating adverse effects on their cost of living. Climate change is causing floods, landslides, environment problems which has resulted into declines in agricultural products. On the other hand, transportation becomes more costly and price rise has affected the living conditions of construction workers. Workers earning their livelihoods on the banks of the river and living in the temporary huts on or near the banks are suffering most. However, they also pointed the fact that construction work has gone up due to climate related disasters and it has generated more employment to them. But uncertain, unpredictable and heavy rainfalls have downsized the working days in construction sector. Regularity of employment in construction sector and its sub sectors have declined in past years. Brick-kiln sector is an example in loss of employment days. Forest related construction workers are directly affected due to frequent forest fire. Wages and facilities are being curtailed by construction companies

and contractors on the one hand and rescue and relief to the catastrophe-victimised workers/families by local bodies are negligible.

Due to increasing heat and heavy rainfalls even in dry seasons, the working-capacity and productivity of construction workers is badly affected. On the other hand, the workers in construction sector are always under dust, smoke, mud etc adverse unhealthy environment. Their health and safety is always ignored in spite of their inevitable involvement in those locations where there are landslides, erosions, floods, destructions and so on. It is said that 1.7 million workers are working under the member contractors of FCAN and additional 1.3 million are informal/scattered workers in construction sites. Dust and smoke-caused respiratory problems and other occupational diseases to them. They are losing both employment and health. Similarly, the construction workers based on forest are losing jobs because of increasing deforestation.

The tourism sector workers particularly trekking helpers and guides, mountaineering and expedition support workers have been day-to-day observers of the changes caused by the climatic conditions. As FGD participants have observed weather patterns have significantly changed in recent decades. The blooming season of Rhododendron which is highly attractive to high hill trekkers has also changed. Likewise, the rainy season is also changed. Though not much significant, a flexible variation of 1-2 months has been witnessed. But this less significant change of seasons in terms of time has significant effect in tourism industry and related employment.

Rapidly melting snow and glaciers have caused floods, erosion of land and landslides. Their trekking and expedition paths being used for decades and decades vanish and create problems and high risks of life. Loss of life has become an increasing phenomenon with increased high degree of danger to hill porters, trekkers, touring guides, expedition support workers, sherpas and tourists. The workers have observed, and many have faced avalanches more than in past losing their friends and serious injuries to those who could maintain at least their life. Trade union leader Dorje khatri who put the flag of GEFONT, ITUC and several global union federations on the top of the Mount Everest Sagarmatha had lost life along with 6 colleagues due to avalanche during expedition few years back. Rescuers have also faced extreme conditions increasing more than in past days.

Workers in the tourism industry are affected badly due to climatic changes. Weather conditions have changed and rainfall in the peak tourist season has caused reduction in number of tourist and more unemployment days to the workers. Out of 2,200 trekking agencies, 375 are already closed permanently and hotels in trekking routes are in closure. The immediate effect is on travel agencies with 145 witnessed as permanently closed. The adversities have been multiplied by the sudden arrival of COVID-19.

Though internal tourism is expanding fast after COVID-19, the incomes of the workers have declined as international tourists are less in comparison. Income earned is not sufficient for hand-to-mouth because employment days have become more irregular. Due to adverse effects of climatic changes, life insurance and accidental insurance have become more essential, but informal workers working as guide and porter do not have any insurance. Guides and porters are shifting towards other jobs due to increased risks of life in high mountains. Similarly due to declined incomes and anxieties generated by loss of income, mental tensions have gone up in working families.

With reduced number of tourists and reduced stay days, workers in a number of sub-sectors have been facing job loss and income loss. As an example if we take the case of high-hill porters and trekking guides, Participants of tourism sector informed that majority of nearly 75,000 porters of Nepal are underemployed facing several unemployed days even in the best seasons, whereas nearly 10,000 out of the total 22,000 trekking guides have already gone for foreign employment due to frustrating underemployment here in Nepal. Likewise, Airport workers, hotel workers, restaurant workers, peasants & farmers, transport workers *including taxi drivers*, street vendors in tourist places and so on are affected in the chain of employment *consisting of* both wage workers and self-employed ones. Sales of handicrafts and curio-goods as well as farm products decline due to less mobility of people in tourist destination and in entire routes. Thus job-loss is being witnessed on the one hand and due to cross-border outflow of workers, shortage of workers in tourism, transport and construction including agriculture is being seen more clearly on the other hand.

One of the leaders of UNITRAV, Dorje Khatri has been awarded in Climate summit in South Africa for outstanding work in airing the flags of trade union organizations and creating awareness among the workers. In continuation of his commitments, he lost life in an avalanche in the Everest along with his 6 colleagues and ITUC started an award in his name. GEONT has launched one campaign named *Save Climate Save Himalyas* under which various initiatives were taken including documentary for motivational publicity. NTUC and ANTUF are also working effectively against the adverse effects of climate change through their concerned affiliates. The national trade union centres are on common stand and position in case of climate change. All national trade union centres both in ITUC-NAC and JTUCC have been supportive of climate campaign. However, the centres and federations need to identify what actual priority actions they should undertake themselves and what to be conducted by employers and governments of local, province and federal level.

Transportation sector has the most visible and effective option in the form of electric vehicles. However, government has still not realised the importance of the use of electric vehicles to cope up with climate change effects. Use of kerosene oil has been minimised by the people in their homes, but the government and business class are not serious to reduce the use of petrol and diesel from streets to highways which is continued by ignoring heavy carbon emission. As exposed by the transport sector FGD participants, increased frequency of natural disasters mainly in rainy months is witnessed in roadblocks which causes unnecessary tension to the workers concerned. Their fooding, lodging and rest is badly affected. Costs of repairing and maintenance of automobiles increases on the one hand and the working life of the engine and vehicles deteriorates. Moreover, the life insurance and accidental insurance are not much effective as victims have to wait for long in spite of irritating administrative procedures.

The billions of Rupees invested in transport sector by private individuals and companies have gone into danger zone incurring heavy losses to them. Mostly the self-employed workers as investors have been in most difficult conditions with heavy burden of bank loans and interests. It is also a fact that global warming and increased temperature has pushed costs of the transport-investors as air conditioning has become essential to be installed in the vehicles, which was not necessary in previous years. Likewise, the

emphasis on EVs by civil society, policy makers and government/non-government entities/organizations have pushed up the worries of self-employed workers of transport sector. The greed of commission also works behind the emphasis on import of EVs without proper infrastructure arrangement. Currently number of existing EVs is not more than 1% of the total vehicles in our road transport. If petro-based vehicles are displaced without proper alternatives, the employment and income effects will be highly problematic. Jobs in auto-workshops and petrol pumps will also be deleted in addition to direct jobs in transport sector. Therefore, best solution may be the transformation of existing petro-vehicles into EVs, which requires innovative technological work. Government and employers of the transport sector should invest jointly for the purpose. Trade Unions in national level must concentrate their pressure to government and transport-employers for transformation of automobiles into EVs. If we look at international level, why developed and middle-income countries do not take fast steps to maximise the number of EVs is an important issue. The political and economic/financial benefits of Fossil fuel may be playing role against climate friendly policies.

Participants also pointed out that organic productions have declined as traditional farming is in downsize nationwide. Pesticides are ineffective to control insects and crop diseases, while human health is badly affected, and cancer is increasing. As a result of climate change, disasters pushed people in displacement and have come to work as informal economy workers in urban areas with miserable living conditions.

The participants of FGDs also focussed their attention on what they request the unions to safeguard their interests. Participants paid emphasis on regular and timely consultation among the tripartite actors which is ignored by the government, hence they urged JTUCC to take the leading role for consultation as an important agenda. In addition, the coverage of Social Security Fund is to be extended to informal workers of construction, transportation and tourism sectors, which needs serious attention of JTUCC. They feel that the voice of trade unions in recent years has become weak and hence unions should be serious to intensify climate concerning activities and lobbying with the government. NATA, TAAN and HAN are to be pressurised to build awareness among their members and also to respect the rights and interest of the workers concerned. Federal, provincial and local government should be pressurised to build awareness among the people in grass-roots through continuous campaigning on climate change in coordination with line ministries. It is essential because the adverse impacts of climate change have become more visible and it seems that the difficulties caused by climate change will continue to become more and more painful in every succeeding years. Therefore, climate finance arrangements in annual budget from local municipality level to province and federal government level is one of the issues to be put forth by unions as their own demand. Formation of safe resting points in various places and proper management if undertaken by the Municipalities, it will be appropriate and appreciable. The unions and non-government organizations working in favour of workers and those working on the issue of climate change should be involved in the policy design process as well as in the process of implementation.

Participants also highlighted the role of municipalities to undertake seriously the issues of workers. They prescribed to establish Agricultural Worker inspection unit in every municipality. Permanent structure in Local bodies, may be Agricultural Worker Desk or

Agricultural Worker Inspection Committee or Agricultural Worker Relation Committee, to monitor the problems/issues of workers and to solve those without delays is urgently needed.

### **3. Sum up of Findings : General and Sectoral**

In spite of several highly significant initiatives, policies, programmes, institutional framework and mechanisms to address the serious issues of climate change both in international level and in national level, the impacts and adverse effects of worsening climatic conditions are more visible. In case of Nepal, we can point out those as follows:

- Extreme Heat, Hurricanes, Avalanches, Floods, Landslides, Wildfires are the disasters causing more hardships to the large sections of people, both in rural and urban areas
- Increased risk of Displacement of people is in an increasing trend in mass scale where majority is of working people
- Food insecurity and problem of safe water supply is being intensive more and more in succeeding years among working class masses
- Epidemics and pandemics both foreseen and unforeseen as a result of fast changing climate conditions in spite of improved health infrastructures have been observed/faced in recent decades
- Dengue virus infection in larger scale is being witnessed even in cold winter season and also increasingly in the high hill areas like Darchula
- Malaria once eradicated has now emerged again particularly caused by fast climatic conditions.
- Wildfire incidents increasing with higher coverage of forest areas affecting forest products currently and in future
- Food for wild animals has been in shortage in forest land and the result is intervention in human settlements, like that of problem created by monkeys and others
- Changes in power equation of society caused by incidents of climate disasters aggravating inequality in an increasing rate being reflected in Gini coefficient
- Lack of funds to finance the programmes to address climate change impacts and adaptation is our present reality
- Very few Research and studies much lower than required on changing climate adversities and impacts on lives and environment
- Almost none or negligible investment on Research and Development to develop green technologies for production, living and conditions and employment of working people
- Construction workers at the forefront of disasters in order to clear the road, landslides, erosion and many other incidents, always on heat, cold, wet to build immediate relief/rescue structures at low-paid jobs with life at high risk.
- Tourism sector workers mainly in high mountains at high risk of life and of job-loss
- Transport workers always on mobile position with less rest and high risk of life
- Priority to be focussed on Greenery, Electric vehicles, and efficiency in disaster management

Finally, involvement of trade unions, Agricultural Worker-friendly organizations and organizations working on climate change agenda in policy decision bodies of the federal government, provincial governments and local governments along with organizations of business groups/ employers/producers is essential. However, the activities of individual organizations on their own or in cooperation/collaboration under bilateral or multilateral frame are equally appreciable.

#### **4. Recommendations**

##### **4.1. Policy Recommendations**

As Bill Gates has put forward - 'There are two numbers you need to know about climate change, the first is 52 billion and the other is zero.' The world adds 52 billion tons of GHGs annually to atmosphere. Zero is the quantity of GHG after maximum possible effort of reduction in order to avoid a climate disaster (Bill Gates 2022, p 3). Bill Gates recommends that we need to channel the world's passion and its scientific IQ into deploying the clean energy solutions, so that entire world could fully stop adding greenhouse gases to atmosphere. So by the use of present technologies of clean energy and by new innovation, clean energy should be made as much as cheaper and reliable in order to stop the use of fossil fuels. Efforts of single countries cannot make difference, the whole world and entire humanity need to feel it with commitment to save the planet earth for future generation. Strong policies and concrete plans are essential, which require stronger commitments and effective mechanisms to implement zero GHG aim.

Individual country like Nepal should give high priority to the use of national and international expertise as well as technical supports from international stakeholders for the purpose. In Nepal, we need to address 3 basic questions while making recommendations on climate agenda:

- How to ensure Disaster Free living and working conditions at minimum risks ?
- How to ensure Clean Energy, clean Industry and climate-friendly production ?
- How to achieve Decent Livelihood for working people

As people's participation and hand-in-hand go ahead is the most important part of implementation, Campaigns to build awareness on climate change and overall effects in mass level are essential. In this area of action, government should design action programmes in cooperation with non-government organizations and civil society organizations including trade unions and employers' organizations both at national/provincial and local municipality level.

Managing the disaster displaced families in a planned way from long-term point of view is the inevitable action. During-disaster and post-disaster management to minimise loss of life, property and natural resources/surroundings is an unavoidable function. Mobilization of several actors and resources - local, national and international – is extremely important which requires a farsighted vision of the state.

Broad-based study of the impacts of climate change and environment to be conducted by the coordination of line ministries with especial focus on working population should be conducted by the government.

Consumption of Fossil fuel as the major source must be reduced mainly in transportation sector. Here the nation needs to promote the use of electric vehicles to replace existing Petro-based vehicles.

Social protection for working families is to be ensured by the state through contributory social security schemes and through non-contributory welfare & social assistance measures. Social Security Fund established in 2015 has already gained momentum in contributory schemes of social security. Non-contributory social assistance and welfare programmes through government budgets are in continuation but need more focus to working poor of informal economy and particularly to rural poor.

Prime Minister employment programme is insufficient by concept, scope and annual budget to address the need of the working masses. Hence livelihood centred and broad-based employment generation programme of the federal government is essential, where federal government should involve provincial and local governments. Considering the critical impacts of the climate change on working poor, climate change should be kept in view while designing and implementing the employment programmes.

Awareness and trainings in local levels for Green job Generation in addition to Green-job programmes in cooperation with investors, employers' organizations and all three tiers of government.

Measures to Protect crops and fruits, also seeds, and destruction from birds, monkeys, boar pigs, elephants etc. by scarecrows, fencing, driving away techniques, scaring sounds

For Expansion of tourism industry, new and comparatively safe destinations are to be explored to compensate losses in the existing destinations. Advertisement and publicity works are to be given high importance for new destinations.

Wildfire control measures should be made effective by technical solutions as well as effective awareness and involvement of masses. Community Forestry groups and their federation may be the real partner for the state.

Efforts for unconditional debt cancelation as a campaign put forward by Civil Society Organizations in international level should be given high emphasis by our tripartite plus partners and react accordingly with more strength in favour. The success of this campaign will definitely provide more financial space to work against adverse effects of climate change. Nepal may raise its voice more strongly for debt-free climate finance as a common and most relevant agenda of LDCs.

International campaign for Net Zero should be directed through more practical measures towards Real Zero. It implies that G to G, EOs to EOs, TUs to TUs and CSOs to CSOs cooperation in SAARC/Regional/International level should be given high priority by concerned organizations to fight against Climate crisis.

Common Action Points for all stakeholders:

- Best possible promotion to Greenery and Afforestation
- Minimization of the use of Fossil fuel
- Collaboration for disaster-risk management and post disaster management

Other action points should be identified by stakeholders within their jurisdiction.

## **4.2. Role of Major Stakeholders**

### **Government**

The biggest polluters are developed countries like USA, Australia and biggest developing countries like China and India. So, the governments of these and other alike countries should be the first to minimise their GHG emission. Paris agreement and Glasgow commitments should be implemented to the best possible extent. Every country and the respective governments with their entire mechanisms must play active and effective role for enforcement in the real sense.

In Nepal also, based on our international commitment, all 3 tiers of government – federal, provincial and local – should take actions on climate change considering it as the most crucial sector. The line ministries are expected to work in coordination where focus ministry is Ministry of Forest and environment. In Glasgow summit, Nepal government has committed to move towards GHG - Net Zero through its goals with full commitment against the diversities of climate change. Making laws, policies and agreements are easy, but full-fledged implementation is quite difficult. Focus in energy, agriculture-forest-land use and waste management is as follows in the government commitment (Ghimire, 2023).

- Clean Energy production by the utilisation of solar, water, air and to increase from 1400 MW to 15,000 MW by 2030
- Ensuring 25% electric vehicles among 2-wheelers, 3-wheelers and 4-wheelers in private sector within 2025
- Installation of Bio-gas plants in 200,000 households and replacement of gas-stoves by electric stoves in 25% households within 2030
- Forest covered area to be increased to 45% of the total land area of Nepal within 2030
- Daily purification of water as much as 3.8 billion litres within 2030

These commitments need serious and continuous strives from government in all three tiers by mobilization of peoples' participation to the best possible extent. The mobilization of Nepali Army, Armed police and Nepal police have been highly

appreciable during disasters, but it should be made more systematic with proper mechanisms and trainings. Recent Himalaya cleaning campaign of Nepali Army within 3 months of 2023 was successful to collect plastic garbage as much as 25,788 quintals. Following recommendations may be put forward:

- Research and innovation in addition to import of climate-friendly technologies
- Incentives to low carbon emission products and delivery of services
- Discouraging the fossil fuel by tax-policy
- Promoting the use of electric vehicles with free-tax or low-tax policy
- Financial/Technological Assistance for transformation of automobiles into EVs
- Conservation of nature with high priority on Greenery
- Wildfire and forest fire control by mobilising entire local communities along with relevant government mechanism including army and police
- Replacement of villages and of rural working people from high-risk areas to safe places
- Strict laws and regulations through amendment/formulation of existing/new laws
- Introducing basic course on climate change in high school level for better understanding and awareness to everyone in new generation
- Time-bound targets to be set by the governments in every tier of governance in order to fulfill the commitments made by Nepal in Glasgow summit.
- Designing climate friendly Agricultural Worker policy for green jobs, employment generation and livelihood assurance
- Plan for shifting workers to new skills and jobs from job-losses
- Ensuring social security for all with more focus on informal workers and covering the excluded families through social assistance and welfare programmes
- Cooperation with trade unions and employers' organization for rescue, relief, rehabilitation and employment for the protection of victimised working families under climate-disasters
- Agricultural Worker Desk and/or Agricultural Worker Inspection Committee in Municipal level in order to ensure right and welfare to the workers in grass-roots level and to tackle the issue of climate change in favour of workers at grassroots.

### **Employers and employers' organizations**

- Minimization of GHG emission in industrial productive activities based on clean industry vision.
- Prioritise low-carbon emission from factories & workplaces.
- Awareness building activities among all sorts of producers from small to multinational enterprises.

- Emphasis to more investment in Research & Development for innovation of useful, climate-friendly and green technologies through cooperation with universities and relevant research institutes.
- Extension of technical/financial cooperation on climate adaptation agenda with employers' organizations of outside world in R & D
- Supportive mechanism for workers & families to protect from occupational diseases in addition to responsive arrangement of OSH
- Lowering the import of vehicles using fossil fuel, simultaneously replacing those by EVs with priority to transforming existing vehicles into EVs
- Ensuring no chemical waste to the rivers and promoting appropriate solid waste management and wastewater treatment
- Promoting/financing Greenery and afforestation
- Sharing finance in welfare programmes to support climate victim workers' families
- Focus corporate social responsibility in climate change adaptation activities

### **Trade Unions**

- Putting Climate Change as trade union agenda and inserting the issues of climate change in collective bargaining and social dialogue
- Awareness building works to be continued on climate issues and measures to save workers and families from adverse impacts and disasters
- Forming the pools of active climate campaigners in every province from trade union members
- Identify a single effective Climate Action point for the entire decade and activate all activists
- Mobilise transport workers against the use of fossil fuels and in favour of EVs
- Creating pressure to employers' organization and Government to transform existing vehicles into EVs
- Create pressure for generation of green jobs and for the use of renewable energy in the process of production and services
- In order to study impacts on workers in general and sectoral levels, cooperation with university, research institutes and academia is to be established with a long-term view. Action-based research and studies of climate change impacts may be undertaken on each of the sections of working people covering agriculture to modern manufacturing and service sectors
- Pressurising for expansion of social protection in order to cover all sorts of informal economy workers with high priority to woman workers
- Lobbying and pressurising for Agricultural Worker Inspection System and Agricultural Worker Desk in Municipal level backed up by federal law
- Action programme in collaboration with those organizations/groups which are working especially on the issue of climate change for Net Zero / Real Zero.
- Mobilising international cooperation through ITUC, WFTU, GUFs and ILO including various national centres not only in financial aspects but also in technical aspects of project work

## CSOs including NGOs, Cooperatives Consumers and Citizens

- Pressurising for the use of electric vehicles
- Campaigning for the use of electricity in cooking and minimise the use of firewood
- Avoid the use of fossil fuels as much as possible
- Try to participate actively in the political process of decision-making
- Campaigning for low-carbon emission, greenery promotion, afforestation, recycling wastes as much as possible
- Close cooperation with local level – Municipalities to save climate
- Media to play pro active role with climate agenda at top priority
- Various programmes and activities in cooperation in a bilateral as well as multilateral frame, in addition to the role of individual organizations

### Role of major Stakeholders: Actor-Activity Sum up

Government of Nepal	<p>Promotion to climate-friendly and Green technologies            Tax policies to discourage the use of fossil fuel and promotion to EVs            Incentives for low carbon emission            Conservation of nature with priority to Greenery and forest-fire control            Replacement of villages and working people from high risk to safe areas            Time-bound targets for climate-commitments of state            Environment audit of industries            Formulation of climate-friendly Agricultural Worker policies.            Operation of Agricultural Worker-desk or Agricultural Worker Inspection committee in every Municipality            Ensuring social protection by combining social security, social assistance and welfare programmes.            Cooperation with TUS and Employers’ organizations for rescue, relief, rehabilitation, resettlements and employment of climate-victim working families.            Basic course on climate change in high school level</p>
Employers and Organization	<p>Implementing clean Industry vision in practice            Awareness building among producers.            R &amp; D for innovation against climate crisis            No chemical waste to rivers            Investment in EVs with top priority            Responsive to OSH and Occupational diseases            Financing welfare programmes            CSR to include climate change</p>
Trade unions	Climate change agenda in bargaining and dialogue

	<p>Focussed activities based on Just Transition Policies</p> <ul style="list-style-type: none"> <li>Building awareness among workers</li> <li>Transport workers to campaign for EVs</li> <li>Develop groups of active climate campaigners</li> <li>Pressurising for social protection for all</li> <li>Cooperation with academia</li> <li>Mobilising international cooperation</li> </ul>
Consumers, Citizens, Cooperatives and CSOs	<ul style="list-style-type: none"> <li>Campaign for No to Fossil Fuels</li> <li>Campaigning for low carbon emission, afforestation &amp; recycling of wastes</li> <li>Minimising the use of firewood in cooking and to promote electricity</li> <li>Active participation in political decision making</li> <li>Close cooperation with municipalities</li> </ul>

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## **Annexure**

### **1. Key Informants from the Stakeholders**

Tourism Sector	Suman Parajuli, UNITRAV Hom Nath Bhattarai, TAAN
Transport Sector	Dipak Adhikari, National Transport Federation Dharma Bhandari, President, Nepal Transport Workers Union

	Bidur Karki, Vice-President of GEFONT and Former General Secretary of ITWAN
Construction	Roshan Dahal, General Secretary, F-CAN Pradip Acharya, President, CAWUN Shanta Basnet, President CUPPEC
GEFONT	Binod Shrestha, President
NTUC	Yogendra Kunwar, President
ANTUF	Jagat Shinkhada, President
FNCCI	Hansa Ram Pandey, Director, FNCCI
NGOs	Dr. Netra P Timsina, SAAPE Om Thapalia, HNN

## **2. Participants of FGDs**

11 each from GEFONT, NTUC and ANTUF

## **3. Stakeholders in Consultation**

Ministry of Forest & Environment, Nepal Government

Rural Reconstruction Nepal

South Asian Alliance for Poverty Eradication

HomeNet Nepal

Hotel Association of Nepal

National Trade Union Centres – ANTUF, GEFONT, NTUC

Joint Trade Union Coordination Centre

Federation of Nepalese Chamber of Commerce & Industries

Trekking Agents Association of Nepal

Mountaineering Association of Nepal