Review on Effect of Nutrition during Flood on Children

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ABSTRACT

Purpose: *Nepal is a highly disaster-prone country, experiencing earthquakes, floods, landslides, drought, hot and cold waves, and vector-borne diseases on a regular basis. Monsoonal floods and landslides affect the most vulnerable communities in the hills and plains every year. The paper is aimed to review the effects of nutrition during floods on children.*

Design/Methodology/Approach: *It is a review-based study. In this review, the researcher attempts to recommend a pragmatic solution for the time being through the systematic literature. The researcher uses deductive logic reasoning at large during the review. In-depth archival analysis followed by an intensive review would be strategies adopted during the scientific review.*

Findings/Result: *The floods affected children, mothers' and elders in Nepal. June to September is the main monsoon month in Nepal. Floods damage houses, foods, agricultural crops, livestock, poultry, and cloth. Floods affect the Terai area of Nepal. There is found floods affected 3-5 years children in Bhutan, Bangladesh, Bhutan, India, and Nepal. At the flooding time floods damage houses, food, crops, livestock, and cloths. In Nepal all the family members' victimised time more vulnerable found mothers, children and elders. June to July summer time floods affect more in the Terai districts children nutrition. It is needed to do research study in seven provinces of Nepal. Central, Province, and Local government allocate special funds for flooding victim children, mother, and elders.*

Originality/Value: *The paper provides pragmatic solutions to the effect of the disaster on Children's nutrition status which might be the foundation for a healthy society overcoming the issue of flood in Nepal.*

Paper Type: *Review paper*

Keywords: Disaster, Effect, Flood, Nutrition, children, monsoon.

1. INTRODUCTION :

Nepal Red Cross society groups wrote in country plan Climate change is already affecting the environment in Nepal; species ranges are shifting to higher altitudes, glaciers are melting, and the frequency of extreme precipitation is increasing. A nationwide strategy was developed by Nepal Red Cross Society organizations. Climate change is already having an effect on Nepal's environment, with species ranges shifting to higher elevations, glaciers melting, and the frequency of intense precipitation increasing. When heavy rainfall occurs in the northern Himalayan and hills regions or upstream areas, all falling rainwater is collected and comes downstream and flows in rivers. The level of water rose in the river, and then the flood converted into flooding in the human residence area of Terai. Natural hazards such as drought, heat waves, river flooding, and glacial lake outburst flooding are all projected to intensify over the coming years, potentially exacerbating disaster risk levels and putting human lives at risk (IFRC, 2023, p. 4) [1]. IFRC network Nepal wrote in their country plan that Nepal is a highly disaster-prone country, experiencing earthquakes, floods, landslides, drought, hot and cold waves, and vector-borne diseases on a regular basis. Monsoonal floods and landslides affect the most vulnerable communities in the hills and plains every year. The main problem is floods in the Terai, or plain area, and landslides are more challenging in the hills area of Nepal (IFRC, 2023, p. 5) [1].

Geographically, Nepal is divided into three parts. High hills, hills, and terai The Himalayan Range is a water tour of Nepal. It is located in the northern part of Nepal. The rivers of Nepal can be broadly classified into three types in accordance with their origins: The first category comprises the four main river systems of the country: the Koshi, Gandaki, Karnali, and Mahakali river systems, all of which originate from glaciers and snow-fed lakes. Rivers of the second category originate from the Mahabharat range, which includes Babai, West Rapti, Bagmati, Kamala, Kankai, Mechi, etc. Streams and rivulets originating mostly from the Chure Hills make up the third category; these rivers cause flash floods during monsoon rains and remain without any flow or very little flow during the dry season (WECS, 2011, p. 2) [2].

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2. STATEMENT OF PROBLEMS :

The flood affects the down-steam area and damages all houses, completely destroying food, clothes, and crops. In flood areas, people have no food, clothing, or housing at flood time. There are health problems like diarrhea and fever among children, elders, and mothers. Because of these problems, childrearing is not managed scientifically. The role of the mother in child-rearing depends upon the mother's knowledge of health check-ups during pregnancy, delivery, and child-rearing during flood times, when the health condition of children is directly affected. Among most of low-income community, mothers have less practice with regular check-ups, so the children are underweight, obese, stunted, wasting, and malnourished. Similarly, their children have not been practicing well for school readiness. Thus, the present study focuses on reviewing the literature to analyse the effects of flood on children nutrition during flood to provide pragmatic solution based on inference of existing global exercise. The study aims to explore the nutritional status of 3-5-year-old (ECD) children in flood-affected areas, mothers' attitudes and practices toward child rearing, and school readiness in the area using a literature survey (ESCAP, 2018, p. 22) [3].

3. OBJECTIVES :

The overall aim of the paper is to assess the effect of floods on Children's nutrition status.

4. METHODOLOGY :

This research adopted the process of scientific review as Meta synthesis to get a solution of annual flood effects on children's nutrition as pragmatic research philosophy. Flooding is an evidence-based empirical issue in Nepal. Every flood is different, but one consequence is a basic need, particularly food. In this review, the researcher attempts to recommend a pragmatic solution for the time being through the systematic literature. That is why the research may be considered pragmatic, philosophy-based research. The researcher uses deductive logic reasoning at large during the review; however, the observation experience of the researcher is arranged as inductive logic reasoning during inference confined to adductive in a single sense for the completeness of the objective. In-depth archival analysis followed by an intensive review would be strategies adopted during the scientific review. Depending on the nature of the availability of data, qualitative and quantitative research approaches would be effective. The review was systematically conducted through the collection of research papers along with reports and data's.

5. LITERATURE REVIEW AND ANALYSIS :

There are three themes in the review and analysis, these are nutrition and flood, nutritional status of children and nutrition and flood.

5.1 Nutrition and Flood:

Nutrition and flood focused literature have been reviewed and summarised in table1.

Table 1: Nutrition and Floods

S. N.	Area focus of research	Outcomes of research	Reference
1	Nutrition and flood	Nepal is a highly disaster-prone country, experiencing earthquakes, floods, landslides, drought, hot and cold waves, and vector-borne diseases on a regular basis. Monsoonal floods and landslides affect the most vulnerable communities in the hills and plains every year. Geographically, Nepal has a northern to southern slope. At summer time, all floods flow from the northern to the southern parts. It affected every summer in the Terai area of Nepal (WFP, Country Strategic Plan, 2023) [5].	Country Strategic Plan Nepal, 2023
2	Nutrition and flood	Nepal's heavy rainfall caused floods and landslides across 17 districts, causing 134 deaths and affecting over 45,000 families. Four districts of Nepal's Mid-Western Region witnessed the most severe devastation, with nearly 29,000 affected families and 28,000 damaged houses. Every year, a flood comes with a landslide and damages Terai area houses, food, and the bodies of men, women, and children. Completed (UNOCHA, 2019) [6].	Nepal: Monsoon Flooding Contingency Plan, 2019
3	Nutrition and flood	A disaster is "a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability, and capacity, leading to one or more of the following: human, material, economic, and environmental losses and impacts", according to the UN's Sendai Framework (UN, 2018) [7].	UNISDR, 2018
4	Nutrition and flood	Agriculture is highly vulnerable to climatic conditions due to its dependence on monsoon rains and short growing periods. This is accentuated by the structure of agricultural production and the concentration of agricultural activity in vulnerable areas. Around 30% of agricultural production takes place on slopes that are vulnerable to landslides and soil erosion. Nepal's main source of food is rice. Everywhere in Nepal, rice-related foods are prepared. If paddy crops are lost by flood, they can either be exported from other countries or taken grains donated to countries. If we construct a flood that could not damage Godam, it is more effective (Bank, World, 2021) [8].	Bhutan, World Bank Group Washington DC, 2021
5	Nutrition and flood	The DRRM Act 2074 identifies snowfall, hailstone, avalanche, glacial lake outburst flood (GLOF), extreme rainfall, low rainfall, flood, landslide, soil erosion, inundation, storm, drought, cyclone, cold wave, heat wave, lightning, earthquake, volcanic eruption, forest fire, or other disasters from natural causes as "natural disasters." Hydrological disasters are floods, urban floods, inundation flash floods, landslides, heavy rainfall, cloudbursts; low rainfall, glacial lake outburst floods (FLOF), and avalanches (Bhandari, Neupane, Hayes, Regmi, & Marker, 2020) [9].	Dinanath Bhandari, Sachita Neupane, Peter Hayes, Bimal Regmi and Phil Marker, 2020
6	Nutrition and flood	One of the nation's most vulnerable to natural disasters and numerous threats is Nepal. The nation experiences significant loss of life and property damage every year as a	

		result of natural and man-made disasters such as floods, landslides, thunderbolts, fires, road accidents, and. Due to the country's unfavourable geography, vulnerable geology, climate variability, and climate change, it is susceptible to natural disasters like earthquakes, floods, landslides, soil erosion, inundation, lightning, droughts, snowstorms, hailstorms, avalanches, glacial lake outbursts, heavy rainfall, rainfall deficits, windstorms, cold waves, and heat waves. Nepal is ranked fourth in terms of climate change and thirty-first in terms of flood risk vulnerability (OXFAM, 2011) [10].	OXFAM, 2011
7	Nutrition and flood	According to the government of Nepal, the socioeconomic impact of natural disasters and floods from 1990 to 2019 in Nepal was 4796 deaths, 1417 injuries, 4839811 affected, and damage of USD 909 929 000. Hydro-metrological hazards, including droughts and floods, have already caused widespread damage, and loss of livelihoods, lives, and property, but the intensity of such hazards is expected to increase in the future. By the mid-century, it is suspected that the amount of precipitation will have increased by 15-20% (adpc, 2019) [7].	adpc, 2019
8	Nutrition and flood	According to the Central Bureau of Statistics, Nepal Multiple Indicator Cluster Survey, 2019, the percentage of underweight children under the age of five is 24.3 percent in the country, 37.4 percent in Karnali Province, and 11.1 percent in Bagmati Province. Similarly, the percentage of children under the age of five (stunting) is 31.5 percent in the country, 47.8 percent in Karnali Province, and 22.9 percent in Bagmati Province (Council, National Child Right, 2020) [11].	National Children Right Council, 2020
9	Nutrition and flood	Caroline Noel and their friends wrote about the impact of foods on undernutrition. Generally, stunting was the most frequently reported form of undernutrition in areas affected by food. Nine of the 14 studies reported significant undernutrition outcomes due to food exposure. Six of the nine studies reported significant effects on stunting, four on wasting, and three on underweight (Noel A. C., 2022) [12].	Caroline Noel Agabiirwe, Noel A. C., Peter D., Constance M.T., Phalkey, R. K, 2022
10	Nutrition and flood	According to Damar Bahadur Khadka, various fermented foods such as Sel roti, jand, mascara, kinema, gundruk, sinki, khalpi, dahi, mohi, gheu, chhurpi, somar, sidra, sukuti, and sukkako machha are prepared and consumed in Nepal. They are important to support the livelihood and economy of local people and form a strong link with sociocultural beliefs and ethnic identity. In spite of their consumption at a local level since time immemorial, their nutritive benefits and nutraceutical potentiality are somewhat hidden or not explored. According to the Constitution of Nepal, there are 123 castes and ethnic groups. Their cultures also vary. All castes have their own traditional cultural activities and cultures, for example, the Newar of Kathmandu, the Bhote of the Himalaya, the Santhal of Jhapa, the Janakpur of Mithila, etc. This chapter presents a critical review of the nutritive values and possible nutraceutical and health benefits of those fermented food products to widen their use and application in a much broader sense (Khadka, 2022) [13].	Damar Bahadur Khadka, 2020

Table 1, "Nutrition and Floods," demonstrates Nepal's high susceptibility to natural disasters. Earthquakes, floods, landslides, heat and cold waves, and vector-borne diseases frequently occur as a result of these catastrophes. The villages in the hills and plains are most susceptible to monsoonal floods and landslides each year Natural disaster floods occur in Nepal during the summer and move from its northern to southern regions. In the summer, it has a greater impact on Nepal's Terai region. The floods cause damage to homes, food, infrastructure, agricultural crops, cattle, forests, and biodiversity. They also destroy human (children, women, and men) materials.

According to the government of Nepal, the socioeconomic impact of natural disaster floods from 1990 to 2019 was 4796 deaths, 1417 injuries, 4839811 affected, and USD 909 292 000 damaged. In the Nepal Multiple Indicator Cluster Survey, 2019, the percentage of underweight children under the age of five is 24.3 percent in the country, 37.4 percent in Karnali Province, and 11.1 percent in Bagmati Province. Similarly, the percentage of children under the age of five (stunting) is 31.5 percent in the country, 47.8 percent in Karnali Province, and 22.9 percent in Bagmati Province.

According to constituents, there are 123 caste and ethnic groups in Nepal. They have different traditional foods, cultures, and dresses. In the Himalayan region, people are more vulnerable to snowfall and glacial lake outburst floods (GLOF); landslides are more affected in hills; and flood and sedimentation challenges exist in the Terai area.

5.2 Nutritional Status of Children:

The table 2 shows that during the flooding time, the affected of floods are losses of home, food, livestock, chickens and clothes. Pregnant women, elder citizens, disable and children are more adverse impacted by housing and nutrition. The malnutrition is a major problem in Nepal.

Table 2: Nutrition Status of Children

S. N.	Area focus of research	Outcomes of research	Reference
1	Nutrition status of children	Malnutrition remains a concern in Nepal. More than 40 percent of Nepalese children younger than five years of age are stunted in their growth and 10 percent suffer from wasting as a result of acute malnutrition. Pregnant and lactating women also suffer from malnutrition, as well as micronutrient deficiencies. Forty-one percent of women in Nepal suffer from anaemia. During the floods time, the entire human affected because of floods losses home, food, animals, chickens, and clothes. Pregnant women, the elderly, the disabled, and children are more negatively impacted by housing and nutrition (WFP, 2019-2023) [5].	WFP, 2023.
2	Nutrition status of children	**Riverine (fluvial) flooding** is the most common kind of flooding is riverine (fluvial). It results from water in a river or drainage channel that cannot be constrained within its stream channel or by constructed structures (e.g., levees) and inundates the floodplain. Riverine flooding is frequently seasonal (e.g., happens during the rainy season) and can result from strong or prolonged periods of rainfall and quick snowmelt. Overtopping/bank flooding is caused by an increase in water volume within a river channel, which overflows natural or constructed banks, flooding adjacent areas. Riverine flooding is frequently connected to this kind of flood. **Flash flooding t**ypically, rivers and streams, particularly those in ordinarily dry valleys, are inundated by heavy or torrential rain that lasts for a few minutes or perhaps several hours. As they are typically not caused by meteorological conditions, flesh floods provide a variety of predictions and	USID, Nepal, 2016

		detection issues. While there will always be heavy rain, whether or not it will cause a flash flood will depend on the hydrological characteristics of the watershed where it is raining. Flash floods happen when favourable hydrological and meteorological conditions combine. There is more problem flesh floods in Nepal (USAID, 2016) [14].	
3	Nutrition status of children	Chronic malnutrition is particularly prevalent in the regions of Karnali (55%), Lumbini (39%), and Masesh (37%) and is least prevalent in the provinces of Gandaki and Bagmati (29%). Karnali occasionally has unfavourable weather brought on by natural disasters like hailstones rather than snowfall. Karnali does not have enough food because the majority of its area is in the Himalayas (Sharma H. K., 2021) [15].	Sharad, H. K., 2021
4	Nutrition status of children	The findings highlight that well-structured policies and strategies focusing on maternal and child nutrition provide an enabling policy environment to scale up nutrition interventions. Evidence on the implementation of programmes is needed to aid policy recommendations. The lack of an institutional mechanism for professional nutrition education highlights the great need for action in Afghanistan for public health nutrition and education (Sharma J. L., 2021) [16].	Sharma, J, Ludin, H., Chauhan, M., Zodpey, S., 2021
5	Nutrition status of children	As a result, Nepal is one of the most disaster-prone nations in South Asia, with numerous risks and disasters occurring each year in addition to earthquakes, regular flooding, and landslides (CFE-DM.,2020) [17].	Gabrielle, E.et al., 2020
6	Nutrition status of children	Malnutrition is one of the main problems with public health in underdeveloped countries with insufficient resources. The main causes of malnutrition include a lack of availability to nutritional food, poor breastfeeding practices, offering improper foods, and failing to ensure that the child eats enough nourishing food. The high rate of child malnutrition that is currently common is one of the primary causes of under-five mortality in the entire nation. The standard of parenting in terms of finances affects how well kids are fed. Parents who work can buy food for their children, but if they possess the land, they can also grow it for their children (Shing, 2010) [18].	Shing, P. R., Gaire, T., Pathak, D. P., 2010
7	Nutrition status of children	Chronic childhood malnutrition in India has been decreasing, but its different impacts on the poor continue to raise concerns, according to a study by Barun Kanjilal and colleagues. The socioeconomic gradient of children's long-term nutritional status requires specific attention, particularly in states where chronic malnutrition among children appears to indicate a lower prevalence. In the document, state-specific plans are requested that are prioritized in their development and implementation while taking into account both the national trends in child malnutrition and their regional variances (Kanjilal, 2019) [19].	Kanjilal, B., Mazumdar, P. G., Mukherjee, M., Rahman, H. R. 2019
8	Nutrition status of children	The research's participants, according to Mohit Goyal and associates, had a high rate of under nutrition. Furthermore, estimating the prevalence of malnutrition exclusively based on weight for age may be inaccurate. The results have	Goyal, M., Sing, N., Kapoor, R., Verma, A., Gedam, P., 2023

		important implications for prospective programs and medical care for children in India (Goyal, 2023) [20].	
9	Nutrition status of children	Droughts and floods are two instances of weather-related risks that have already caused extensive destruction, the loss of lives, and property damage. The intensity of such hazards is expected to increase in the future. By the middle of the century, precipitation is predicted to increase by 15-20%, which will exacerbate the effects of water-related disasters (Ministry of the Environment, 2010). Climate change has a direct influence on people's lives because a significant portion of Nepal's economy and employment are reliant on climate-sensitive activities. Agriculture and the environment are related, claims the Ministry of Science, Technology, and Environment (2014). The livelihoods of millions of people may be put in danger by changes in the weather or production cycles, which account for 35% of the GDP (Khanal, 2020) [21].	Khanal B. N., 2020
10		The design, implementation, and maintenance of plans for irrigation, river control, forest management, schools, healthcare facilities, drinking water, and sanitation will be carried out with the cooperation of local users, community organizations, and community members under the government of Nepal's national policy for disaster risk reduction (UNDP, 2018) [22].	UNDP, 2018

Nepalese under five year's children age are 40% stunted and 10% wasting. According to the literature review malnutrition was in Karnali province 55%, Limbini 39%, Madesh 37%, Bagmati and Gandaki 29%.

The biggest issues are in public health in the poor countries with few resources of malnutrition. Lack of access of nourishing food or inadequate food distribution, lack of health service, inadequate breasting feeding techniques, and serving inappropriate foods are the main causes of malnutrition. Prepare and prioritise long term nutritional policy, plan, and strategies for malnutrition programme design and implementation in seven provinces of Nepal.

5.3 Flood affected Children:

The table 3 shows that the natural disaster is inevitable in any part of the world, irrespective of any level of development and status.

Table 3: Nutrition Status of Children

S. N.	Area focus of research	Outcomes of research	Reference
1	Flood affected children	A natural disaster is inevitable in any part of the world, irrespective of any level of development and status. The casualties and the fatalities, however, also depend upon the precautions, and communication is most vital for preparedness. Nepal has tried to implement the disaster risk reduction management plan and the activities of the line agencies in the government, and national and international humanitarian actors. It develops processes and progresses on the localization of policies, resources, and capacities for effective disaster risk reduction and emergency management. Nepal has been included in the 2018-2030 DRR strategic plans. The upstream community can provide	Shah, D. B. & Mishara, A. K., 2018

		information to the downstream community when raise in river water level of the rivers (Shah, 2018) [23}.	
2	Flood affected children	In the districts affected by the flooding, UNICEF continued to assist in the implementation of initiatives targeted at preventing and treating malnutrition. For 81,397 children aged 6 to 59 months (39,453 males and 41,944 girls), multiple micronutrient powders (MNP) have been given, and 432,742 main caregivers of infants and young children have received counselling on infant and young child feeding (IYCF). The flood-affected regions evaluated a total of 531,168 kids for malnutrition, and of them, around 6% (31,228) were found to be severely acutely malnourished (SAM). 30,602 SAM kids, including 13,744 boys and 16,858 girls, have been accepted for treatment with Ready-to-Use Therapeutic Food (RUTF) at 356 Outpatient Therapeutic Program (OTP) centers supported by UNICEF, which are located in 38 of the government's calamity declared districts (UNICEF, 2022) [24].	UNICEF, Pakistan, 2022
3	Nutrition and flood	UNICEF wrote flooding causes water contamination, and tropical cyclones and storms' strong rains increase the spread of vector-borne diseases. Septic tanks that have overflowed and flooded toilets can taint water sources and make the water hazardous. The biggest issue in areas affected by flooding during a flood is water. Think about the installation of drinking water infrastructure and pit latrines in the setting of Nepal. For short-term use in emergencies, there is a water reserve in the Terai area. For a very long period, a unique hand pump was built for those who were above 15 feet long. The safety tank for toilets ought to be permanently installed (UNICEF, 2023) [24].	UNICEF, 2023
4	Nutrition and flood	Research findings showed that breastfeeding and complementary feeding practices for IYC were poor and inappropriate due to a lack of knowledge, time, and resources in normal times and worse during flooding. One coping strategy developed by mothers purposely to protect their IYC's nutritional status was to decrease their personal food intake. Our research findings suggest that mothers perceived the negative impact of flooding on their IYC's nutritional health but did not have the means to prevent it. They could only maintain their health through coping strategies which had other negative consequences. The results suggest a holistic approach combining Counseling to mothers to save children from cold, use safe drinking water, and beast feeding techniques and time (Goudet, 2021) [25].	Goudet, S. M., Griffiths, P. L., Bogin, B. B., Selim, N., 2021
5	Nutrition and flood	Niamul Naser and S.M. Nazmul Alam authored Bangladeshis enjoy traditional cuisine because it helps them maintain a healthy diet and active lifestyle. The nutritional quality, location, and availability of food in a household all have an impact on the health and happiness of its inhabitants. Rice is a key component of the traditional Bangladeshi diet. While tubers and roots are good sources of minerals, small local fish are vital sources of vitamins, minerals, and protein in addition to protein. Farm-grown trees, shrubs, and herbs have therapeutic properties. The availability of food varies	UNOCHA, 2019

		geographically due to factors including economic capacity, climate change variables, and famine. Scientific study and stringent regulations could, in the future, affect the nutritional status of the public through the systematic use of traditional foods. Traditional foods can help people achieve nutritional security, according to the Sustainable Development Goals of the United Nations (UNOCHA, 2019) [6].	
6	Nutrition and flood	Motivating factors: The development goals of ISPP are to (i) increase mothers' usage of services for children's nutrition and cognitive development, and (ii) improve local governments' ability to provide safety nets. There are three parts to it: (A) For recipient moms receiving cash transfers, eligibility will be based on the following two factors: households must, (b) fall under the poorest two quintiles of expenditures, and (c) contain mothers of infants younger than 60 months of age or pregnant women. The following services must be used in order to receive cash transfers: ANC services for expectant mothers, monthly growth monitoring for infants ages 0 to 24 months, quarterly growth monitoring for infants ages 25 to 60 months, and monthly CNCD (child nutrition & cognitive development) sessions are just a few examples of the services offered. (B). Building the ability of local-level governments: This part would give LGD the information it needs to make the proposed financial transfers easier to implement. Monitoring and evaluation are done to determine how well the project's goals are being met as well as how cash transfers affect outcomes for child nutrition and cognitive development (CNCD) and family poverty (Dizon, 2019) [26].	Dizon, F., Chaudhaery, D. Rahman, T., 2019
7	Nutrition and flood	Despite Bhutan's generally high levels of food sufficiency, food access and nutrition remain problems in the country, as highlighted by climate risk. With wasting rates of 4.3% for children under 5 and a significant prevalence of anaemia, 21.2% of children under 59 months were stunted (twice as many in rural regions as in urban ones). The number of people in Bhutan who are in danger of going hungry is expected to change as a result of climate change's effects on global food security (World Bank, 2021) [8].	World Bank, 2021
8	Nutrition and flood	According to FAO, Kathmandu, small neighborhood shops, specialty stores (bakeries, dairies, etc.), mobile door-to-door vendors, wet markets, and street vendors were favoured by low-income households (monthly income less than NPR 20 000). Respondents from households with monthly incomes between NPR 20,000 and NPR 50,000 made similar choices known. Grocery stores were also included as the preferred merchants for households in the high-income groups (NPR 50 000 to 100 000 per month and above NPR 100 000 per month) (FAO, 2022) [27].	Food and Agriculture Organization, Kathmandu, 2022
9	Nutrition and flood	In these rural areas in Orissa, India, Jose Manuel Rodriguez_Llanes wrote that long-term malnutrition is linked to exposure to floods. Early-life flood exposure in children was associated with greater levels of chronic malnutrition. Flood-prone areas should adopt long-term	Rodriguez-Llanes, J. M., Ranjan-Dash, R., Degomme, O., 2011

		malnutrition prevention programs after flooding (Rodriguez-Llanes, 2011) [28].	
10	Nutrition and flood	The current study, according to Chandrama Baruah and Daisy Sharma, was conducted in flood-affected communities close to the banks of the rivers Brahmaputra, India, and Assam to evaluate the nutritional health of those who work mostly in agriculture and are crucial to the productivity of the country. A comprehensive medical and dietary history, as well as information from a physical examination, was used to acquire nutritional information. The most crucial current technique for determining the type, severity, and degree of malnutrition is a community's nutritional status assessment. According to Saisy Sharma, the goal of the current study was to assess the nutritional health of flood-affected residents living close to the banks of the Brahmaputra and Assam rivers in India and Assam. The majority of these citizens work in agriculture, which is crucial to the nation's output. Nutritional information was gathered through meticulously compiling medical and dietary histories, physical examination, and information correlation. An evaluation of a population's nutritional status is the most important modern method for figuring out the kind, severity, and degree of malnutrition (Baruah, 2019) [29}.	Baruah, C., Daisy, S., 2023
11	Nutrition and flood	The absence of food is not the only cause of under nutrition. The proximal to distal levels of the dynamic causes of under nutrition and various types of malnutrition. The primary determinants of poor household access to sufficient, nutritious, and safe food, inadequate maternal and child care, and feeding practices, as well as poor household access to and use of quality health services, as well as a healthy and hygienic environment, including water and sanitation, are the immediate causes of maternal and child under nutrition (WHO, 2019) [30].	WHO, 2019

The casualties and the fatalities also depend upon the precaution and communication is most vital for preparedness. In Pakistan 2023 flood affected total kids were 531,168 from malnutrition; among them, 6% were severely acute malnourished (SAM). UNICEF treated malnourished children through Ready-to-Use Therapeutic Food (RUTF). Rice is a main traditional diet in Bangladesh, while tubers and roots are good sources of minerals, small local fish are the sources of vitamins, minerals, and protein. Such food can help people achieve nutritional security. Research linking COVID 19 and Nutrition [31], Operational status and site condition [32 & 33] and nutrition, Fire and Nutrition [34] should be also empirically analysed in the case of Nepal.

6. CONCLUSIONS AND SUGGESTION :

According to the constituents of Nepal, the *Tharu* caste is the ethnic group of the Terai. They are probably the oldest and original inhabitants of the Terai region of Nepal. Tharu communities have dense habitats founded in Kailai, Kanchanpur, Banke, and Bardia districts of the western Terai of Nepal. They are either hilly areas or *Madhesi,* they are separate, but they are a tribe community of *Terai*. The empirical research is needed to be conducted at a higher-level 1st time in disaster and nutrition research in their community in Kailari Rural Municipality of Kailali district of Nepal.

The review on effect of nutrition during the floods on child nutritional status different articles of Bangladesh, Bhutan, India, and Nepal literature are reviewed. There is found floods affected 3-5 years children in Bhutan, Bangladesh, Pakisthan, India, and Nepal. At the flooding time floods damage houses, food, crops, livestock, and cloths. In Nepal all the family members' victimised time more vulnerable founded mothers, children, and elders. June to July summer time floods affect more in the

Terai districts children nutrition. It is needed to do a research study in seven provinces of Nepal. Central, Province, and Local governments allocate special funds for flooding victim children, mother and elders.

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REFERENCES :

[1] IFRC, Nepal (2023). IFRC network country plan (MAANP001), pp. 01-21. https://reliefweb.int/report/nepal/nepal-2023-ifrc-network-country-plan-maanp001

[2] Expert Group on Disaster-related Statistics in Asia and the Pacific (2011). Water Resources of Nepal in the Context of Climate Change. https://www.unescap.org/sites/default/files/ESCAP.CST_.2018.CRP_.2_Disaster-related_Statistics_Framework.pdf

[3] ESCAP (2018). Disaster-related Statistics Framework. https://www.unescap.org/sites/default/files/ESCAP.CST_.2018.CRP_.2_Disaster-related_Statistics_Framework.pdf.

[4] WECS, (2011). Disaster-related Statistics Framework. https://www.unescap.org/sites/default/files/ESCAP.CST_.2018.CRP_.2_Disaster-related_Statistics_Framework.pdf

[5] WFP, (2023). Country Strategic Plan, https://www.wfp.org/operations/np02-nepal-country-strategic-plan-2019-2023.

[6] UNOCHA, (2019). Nepal: Monsoon Flooding Contingency Plan. https://reliefweb.int/report/nepal/nepal-monsoon-flooding-contingency-plan-may-2019.

[7] adpc, (2018). Disaster Risk Reduction annual report. https://www.undrr.org/publication/united-nations-office-disaster-risk-reduction-2018-annual-report.

[8] Bank W. (2021). World Bank Group Lunches New Country Partnership Framework for Bhutan. https://www.worldbank.org/en/news/press-release/2021/01/14/world-bank-group-launches-new-country-partnership-framework-for-bhutan.

[9] Dinanath Bhandari, Dinanath; Neupane, Sanchita; Hayes, Peter; Regmi, Bimal; Marker, Phill (2020). Disaster Risk Reduction and Management in Nepal. https://www.opml.co.uk/files/Publications/a1594-strengthening-the-disaster-risk-response-in-nepal/delineation-of-responsibility-for-disaster-management-full-report-english.pdf?noredirect=1.

[10] OXFARM, (2011). Disaster risk reduction and management in Nepal: Delineation of roles and responsibilities. www.opml.co.uk.

[11] Nepal Children Right Council, (2020). Public information. http://childrights.gov.np/_uploads/publication/4/715f5a637b7c1f074bfdb5aaa71ec65a.pdf

[12] Agabiirwe, C. N., Dambach, P., Methula, T. C., & Phalkey, R. K. (2022). Impact of floods on undernutrition among children under five years of age in low-and middle-income countries: a systematic review. *Environmental Health*, *21*(1), 98, 01-28. Google Scholar↗

[13] Khadka, D. B. (2020). Traditional fermented food of Nepal and their nutritional and nutraceutical potential. *Nutritional and health aspects of food in South Asian countries*, ISBN: 9780128200117, 165-194. DOI: https://doi.org/10.1016/B978-0-12-820011-7.00022-8.

[14] USAID Nepal (2016). USAID Paani Program: Monitoring, Evaluation and Learning Plan. https://pdf.usaid.gov/pdf_docs/PA00W6R3.pdf

[15] Sharma, S. K. (2021). Trend and Determinants of Knowledge and Practice of Birth Registration in Nepal: Evidence from Nepal Multiple Indicator Cluster Survey. https://www.opmcm.gov.np/wp-content/uploads/2022/04/3_finalOPMCM_Determinants_of_Knowledge_and_Practice_of_BR_Final_Draft.pdf

[16] Sharma J. L. (2021). Public health nutrition in Afghanistan-policies, strategies and capacity-building: current scenario and initiatives. *Eastern Mediterranean Health Journal*, *27*(7), 728-737. Google Scholar↗

[17] CFE-DM. (2020). Nutritional Nepal Disaster Management Reference Handbook. https://www.preventionweb.net/publication/nepal-disaster-management-reference-handbook-2020

[18] Shing, P. R., Gaire, T., Pathak, D. P. (2021). Nutritional status assessment of under five years' children of Magar Community of Nisdi Rural Municipality, Palpa. *International Research Journal of MMC, 2*(1), 127-141. Google Scholar↗

[19] Kanjilal, B., Mazumdar, P. G., Mukherjee, M., Rahman, H. R. (2019). Nutritional status of children in India: household socio-economic condition as the contextual determinant. *International Journal for equity in Health*, *9*(1), 1-13. Google Scholar↗

[20] Goyal, M., Sing, N., Kapoor, R., Verma, A., Gedam, P. (2023). Assessment of Nutritional Status of Under-Five Children in an Urban Area of South Delhi, India. *Cureus*, *15*(2), 01-09. DOI: http://dx.doi.org/10.7759/cureus.34924. Google Scholar↗

[21] Khanal B. N., (2020). Nepal: A brief country profile on Disaster Risk Reduction and Management. *Ministry of Home Affairs, Government of Nepal*. 01-34. Google Scholar↗

[22] UUNDP, (2018). National Policy for Disaster Risk Reduction. DRR Policy (Nepal).pdf

[23] Shah, D. B. & Mishara, A. K. (2018). Assessment of Emergency Communication Number Used in Nepal. *Journal of Disaster and Business Continuity Management*, *1*(1), 01-10. Google Scholar↗

[24] UNICEF, (2022). Country Office Annual Report, Pakistan 2022. file:///C:/Users/mayan/OneDrive/Desktop/Srinivas%20University/Postdoc_Article/Nutritional%20Status%20of%20Children/24.%20Pakistan-2022-COAR.pdf

[25] Goudet, S. M., Griffiths, P. L, Bogin, B. B., Selim, N. (2021). Impact of flooding on feeding practices of infants and young children in Dhaka, Bangladesh Slums: what are the coping strategies? *Maternal & child nutrition*, *7*(2), 198-214. Google Scholar↗

[26] Dizon, F., Chaudhaery, D. Rahman, T. (2019). Food for Improved Nutrition in Bangladesh. P168176. https://documents1.worldbank.org/curated/pt/689051571053857824/pdf/Food-for-Improved-Nutrition-in-Bangladesh.pdf

[27] World Bank, (2022). Climate Risk Country Profile Bhutan. www.worldbank.org

[28 Rodriguez-Llanes, J. M., Ranjan-Dash, R., Degomme, O., (2011). Child malnutrition and recurrent flooding in rural eastern India: a community-based survey, pp. 01-68. https://doi.org/10.4060/cb8630en. Google Scholar↗

[29] Baruah, C., Daisy, S. (2023). Nutritional Status of Flood Affected Population near Bank of Brahmaputra, Assam: A Case Study. *International Journal of Pure & Applied Bioscience (IJPAB), 7*(3). 122-132. DOI: http://dx.doi.org/10.18782/2320-7051.7442. Google Scholar

[30] WHO, (2019). Adapting to Climate Sensitive Health Impacts Undernutrition. https://www.jstor.org/stable/resrep32983.

[31] Mishra, A. K., Pokharel, A., & Aithal, P. S. (2023). Safety Measures Implemented at Siteduring COVID-19: A Case from Nepal. *International Journal of Management, Technology, and Social Sciences (IJMTS), 8*(2), 71-82. Google Scholar↗

[32] Mishra, A. K., Adhikari, R. & Aithal, P. S. (2022). Linkage of Safety Site Conditions with Accidents. *International Journal of Health Sciences and Pharmacy (IJHSP), 6*(1), 17-34. Google Scholar↗

[33] Mishra, A. K., (2021). Operational Status of Safety and Health in Construction. *Empirical Economics Letters, 20*(9, Special Issue 1), 125-142. Google Scholar↗

[34] Mishra, A. K., Shrestha, A. (2017). Assessment of exit requirements for fire safety of commercial buildings, Kathmandu, Nepal. *International Journal of Emerging Technologies and Innovative Research, 4*(10), 248-255. Google Scholar↗

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