

Enhancing Institutional Meals in Armed Police Force, Nepal

Sachin Karmacharya

sachinkarmacharya777@gmail.com

Article History

Received: March 7, 2024

Accepted: April 15, 2024

Published: June 7, 2024

Keywords

Institutional meals,
meal practices,
nutrition, ration,
calories

Abstract

This study explores the historical evolution and contemporary implementation of institutional meals within the Armed Police Force (APF), Nepal, tracing back to the early 1900s, when British mess provided food for soldiers and civil servants. It investigates the linkages between the Armed Police Force, Nepal, and nutrition, emphasizing the importance of providing officers with adequate sustenance for their well-being and operational efficiency. Through the introduction of a cash ration allowance system, the APF aims to empower its personnel to procure ration items in accordance with established guidelines. This qualitative inquiry conducted as part of Masters Thesis in 2023, engages various APF personnel and stakeholders to examine the feasibility and challenges associated with institutional meal implementation. Employing both primary and secondary data collection methods, including semi-structured face-to-face interviews, key informant interviews, and focus group discussions, the study identifies key challenges

Corresponding Editor

Ramesh Raj Kunwar

kunwar.sangla@gmail.com

Copyright©2024 Author

Published by: APF Command and Staff College, Kathmandu, Nepal

ISSN 2616-0242

and proposes strategies to address them. Notably, it suggests diversifying ration items based on factors such as altitude, training needs, and dietary preferences.

Introduction

Scholars across various disciplines, including sociology, anthropology, philosophy, and psychology, have made significant contributions to the understanding of the concept of practice. Sociologists have played a significant role in the concept and development of practice. Bourdieu (1977) argued that practices are the collective activities that make up social life, guided by implicit rules and norms. Wittgenstein (1945), as cited by Schmidt (2014), maintained that practices are guided by sets of rules and principles. In addition, practices are both repetitive and creative, reproducing and transforming social structures (Giddens, 1984). The concept of practice is a complex one, but it is a powerful tool for understanding social life.

According to (World Health Organization [WHO], 2020), a meal is a regular occasion for having food as breakfast, lunch or dinner. A meal is a combination of foods that is eaten at a particular time of day. Meals can vary in size, composition, and purpose. It can be a social occasion or simply a way to refuel the body (Davidson, 2014). Military meals are nutritionally balanced meals provided to military personnel for health, energy, and duty performance (Department of Defence [DOD], 2015). Armed Police Force (APF), Nepal is providing 19 ration items to APF personnel based on nutritional requirements as allocated to the budget of the government (Government of Nepal [GoN], 2015).

The term "institutional meal" refers to large quantities of food prepared and served in cafeteria style settings, catering to nutritional and dietary needs in military facilities, hospitals, schools, and prisons (Payne-Palacio & Theis, 2005). Institutional meals can be categorized into two broad segments: the commercial or profit sector and the public sector, (Foskett et al, 2003). Davis et al. (1998) mentioned that these institutions serve a vital role in providing essential nutrition to a large population, significantly influencing the health and well-being of the individuals.

Food is a basic human need for survival, growth, development, and good health (United Nations Children's Fund, 2018). Food can also have distinct social and

cultural values (WHO, 2003) as can as any substance that can be ingested and digested by an organism (Davidson, 2014). Malinswoki (1994) argued that food fulfils the biological need for nourishment, is influenced by culture, and is crucial for social organization. Sheringham & Daruwalla (2007; in Kunwar, 2017) interpreted that food serves as a powerful language for communication, connecting individuals to culture and religion and symbolizing boundaries, enabling symbolic exchange and connection. This is because military personnel need to be able to rely on their food to be safe and nutritious, even in difficult conditions (DoD, 2015).

In order to know about diet, WHO (2021) defined it as the habitual intake of food and beverages by an individual. It includes the types of food consumed, the frequency of consumption, and the portion size of each food item (Food and Agriculture Organization, 2020). In this regard, Pollan (2013), Nestle (2015), and Bittman (2012) emphasized the importance of eating a diet that is based on whole, unprocessed foods. Furthermore, the Department of Food Technology and Quality Control (DFTQC, 2016) recommended a healthy diet that emphasizes whole grains, fruits, and vegetables. On the other hand, it has also been advised to avoid red meat, fizzy drinks, and processed meals.

So far as the concept of nutrition is concerned, Shrestha (2004) defines it as the process of utilizing food for growth, metabolism, and the repair of tissues. Similarly, nutrition is classified scientifically into five categories: protein, fats, carbohydrates, vitamins and minerals (Ministry of Health and Population [MOHP], 2016). Indeed, nutrition is one of the specific needs of each individual, which may vary depending on their age, sex, activity level, and health status (WHO, 2020). Besides that, a balanced diet is especially important for soldiers, as they need to be healthy and stressed soldiers (Carwelo, 2007; in Babusha et al. 2008).

Institutional meals have a long history dating back to ancient times. In the Roman Empire, public baths often had attached canteens that served food to patrons. The concept spread to monasteries, convents, and hospitals during the Middle Ages. The Industrial Revolution expanded institutional meal services, enabling large scale food preparation and service operations (National Restaurant Association, 2022). In terms of Nepal's history, institutional meals in Nepal date back to the early 1900s,

when British mess halls provided food for soldiers and civil servants (Nepal Health Research Council, 2018). According to Gurung (2014), the ration card of the Nepali Army, introduced in 1904, provides soldiers with a regular supply of nutritious food, regardless of their rank or location. The Nepali Army was the first organizations to use meals in 1904.

In today's globalized world, the tasks of the armed forces are increasingly challenging. Soldiers must be in excellent physical condition to perform their duties effectively, and they must be prepared for any unforeseen events. As a result, providing soldiers with a regular supply of nutritious food and water is essential. Dolan (2010) noted that soldiers must always be in a state of physical readiness, and that regular access to food and water is essential for achieving this goal. Gurung (2014) emphasized that a nutritive and balanced diet can help to increase their energy and feel healthier.

The Nepali Army is one of the oldest security agency, having a glorious and pioneering history. The Nepali Army has a pivotal role in safeguarding sovereignty and territorial integrity and protecting the nation from various external attacks while fulfilling the core national interests of the country (Pandey, 2019). After the establishment of democracy, the government provided ration facilities to the Nepal Army in 1951 (Karki, 2019). In 1955, the police personnel of the armed guard and training center were arrange to receive ration facilities as an allowance of Rs. 25 per month. Later, the government provided rations to police personnel in 1973. Ration facilities have been arranged for the armed police personnel as per (GoN, 2015). Armed police personnel need a varied diet according to geographical conditions and vigorous physical activity to keep their morale high and perform effectively (Singh, 2020).

APF, Nepal was established in 2001. APF, Nepal, is serving the country and its nationality, sovereignty, and integrity by maintaining peace and safeguarding the nation and its citizens. Institutional meals play an important role in the APF. It provides the nutrition that soldiers need to stay healthy and perform at their best in the operational field. Moreover, it also helps to boost morale and improve unit cohesion. APF, Nepal, is constantly working to improve its institutional meal system, and it is committed to providing its personnel with the best possible meals

(APF, Nepal, 2020). The purpose of these individual rations is to make soldiers independent in their ability to work, fight, and survive on their own or in small groups but, at the same time, ensure that individuals receive adequate food and nutritional requirements (Darsch & Faso, 2006).

The provision of ration is in the regulations of all security forces. Provisions have been made to manage rations for security bodies. In accordance with Chapter 8 and Rule 88 (Public Procurement Regulation, 2007) each public entity is required to go through quotation forms or tender documents for procuring ration. While the Nepal Army still follows the same procedure, the APF, Nepal, and Nepal Police are no longer required to follow the tender document procedure after the Government of Nepal (GoN), by cabinet-level meeting on January 18, 2015, decided to provide rations in the form of cash. However, the preparation and approval of the cost estimate procedure remain the same (Singh, 2020).

The highest rate of ration money is Rs. 863.65 per day in Humla district and the lowest is Rs. 181.70 per day in Sindhuli district according to the accessibility of the items and services. This rate was reviewed and increased by the decision of GoN on 25 October 2021 (APF, Nepal, 2023).

APF, Nepal had adopted the policy of ration procurement by inviting sealed quotations or bids from the interested supplier on the first day of the month of *Magh* (mid January). Since, 2015, the organization has been changed and established a major shift in its history by adopting a cash ration allowance in replace of a tender system. In this system, the Government directly provides cash to APF personnel in normal condition (Singh, 2020). The Nepali Army is involved in distributing various types of operations, training, UN missions, and disaster management operations. GoN has been continuously providing dry ration Meals Ready to Eat (MRE) to the Nepali Army since 2019 (Karki, 2019).

APF, Nepal is playing a crucial role in maintaining law and order, safeguarding the border and protecting citizens' safety (APF, Nepal, 2020). Therefore, ensuring the nutritional well-being of APF personnel is vital to maintaining their health, fitness, and operational readiness. After the government's decision, APF personnel are

receiving the cash ration on an individual basis. It has added flexibility in terms of choosing suppliers and buying quality food items on the part of units in procuring rations. The units can also buy various ration items or the same ration item from multiple suppliers. Moreover, the units no longer have to go through the lengthy process of tender documents and depend on a single supplier for procuring ration (Thapa et al., 2020).

The study provided valuable insights into the implementation of institutional meal policies and guidelines at the ground level. This information can help identify areas for improvement, potential barriers, and challenges in implementing institutional meal programs in similar organizations. The study addresses questions like the fundamental provision and practices of existing institutional meals, analyze the total calories, carbohydrate, protein and fat of APF ration scale and examines the existing practices of institutional meals in other organizations.

Review of the Literature

Devkota et al. (2021) focused that Nepal is richest country over 700 plant species that are known as herbs and species. There are frequently used in Nepali kitchen due to their potential health benefits and ability to enhance food taste. Kunwar et al. (2010) described that the herbs and species have long been customary kitchen ingredients, added food to improve flavor and provide various health advantages. In addition to their usage as food preservatives, flavorings, and colors, herbs and spices are also utilized medicinally.

Sharma (1999) studied of the Mahabharata highlights the importance of food in ancient Indian culture, including survival, religious rituals, and conflict resolution. Basnet (2016) and Aryal et al. (2017) explored the cultural and historical dimensions of food. However, contrasting views exist on the relevance of ancient texts to contemporary food practices. The historical narratives should be critically analyzed and contextualized within their historical and socio-cultural contexts (Reddy, 2016). Additionally, discussions on food as a weapon of war in ancient texts may intersect with broader debates on food security, conflict, and human rights.

Kunwar (1999) revealed that the Sherpa community's food choices are influenced

by environmental patterns, cultural beliefs, and traditions. Their staple foods include potatoes, rice, and buckwheat, with obesity being common. They consume green vegetables, fruits, milk, and cheese during the monsoon season. In the context of the global nutrition transition, as highlighted by Pokhrel et al. (2015), there is a growing concern about the impact of changing dietary patterns on the health of populations worldwide. Recognizing the need for culturally sensitive nutrition studies and interventions, as emphasized by Popkin et al. (2012), is crucial in addressing the health issues faced by communities like the Sherpas. Given the relationship between dietary choices, cultural norms, and health outcomes, tailored interventions can be developed to promote healthy eating habits while respecting the unique cultural legacy of communities.

Meiselman et al. (1974) studied the food preferences of the armed forces to maintain quality institutional meals. The menu, based on personal preferences and cost considerations, is crucial for food service systems. The military recognizes the importance of good nutrition for soldiers' physical and mental health, boosting happiness and motivation, and ensuring access to the best food even in challenging conditions. Gómez-Pinilla (2008) and Jacka et al. (2014) further reinforce this notion by highlighting the positive impact of nutritious diets on cognitive function and mood regulation, crucial factors for soldiers operating in challenging conditions. However, contrasting views, as articulated by scholars like Kahn & Wansink (2004) raised valid concerns about the practicality and efficiency of accommodating individual food preferences within large-scale military food service systems.

Wellborn et al. (1976) emphasized the importance of Meals, Medicine, and Munitions (M3) in military units for soldiers' health, effectiveness, and safety in combat. Meals provide energy and nutrients, while medicine prevents and treats illnesses. The military invests in research to improve M3 quality and availability, ensuring soldiers' survival and success. Meals are crucial for troop morale, battlefield effectiveness and timely supply of logistics items (Clausewitz, 1832). Likewise, Patton (1975) highlighted the importance of M3 in military circles, which is widely recognized for its critical role in soldiers' health, combat readiness, and mission success.

Food and Agriculture Organization (1996) expressed that food security is the availability and accessibility of quality food for all, ensuring active and healthy lives. It is crucial for public health and can be caused by factors like natural disasters, economic shocks, conflict, and inequalities. Food insecurity can lead to malnutrition, non-communicable diseases, and mental health issues (Smith et al., 2020). According to Lang et al. (2009) debated that food security often intersects with environmental sustainability, with some academics highlighting the potential for unsustainable agricultural practices to worsen environmental degradation and long-term food insecurity. The different perspectives highlighted the complex and multifaceted nature of food security as public health issue.

The Indian Brahmanical tradition categorizes food into three types: sattvic, rajasic, and tamasic. Sattvic diets are vegetarian, promoting saintliness, rajasic enhances power, and tamasic may lead to uncontrollable passions. Sattvic food is offered to deities and consumed by devotees (Lowdin, 1998). However, Douglas (1966) argued that these perspectives are not universally accepted and that contrasting views exist. Studies by Benton (2007) and Jacka et al. (2014) explore the relationship between diet and mental health, acknowledging the influence of various nutrients on brain function.

Institutional meals are crucial in military bases, hospitals, schools, and prisons, providing safe, nutritious food (Payne-Palacio and Theis, 2005). Institutional meals should be safe, nutritious, and satisfying. This can be achieved by careful planning, preparation, and execution (Foskett et al., 2003). Edwards & Hartwell (2009) explored the classification of institutional meals, their key characteristics, contracting out, and alternative production and service methods. Despite financial constraints, improving their nutritional content is vital for health and well-being (Payne-Palacio & Theis, 2005). Similarly, Souza et al. (2021) highlighted the importance of nutrition meals in school settings in promoting food security and enhancing students' dietary intake. By offering tasty and nutritious meals, schools cannot only improve students' dietary intake but also reduce food waste (Ishdorj & Higgins, 2015).

Across history, military rations have evolved significantly, from canned goods in the

19th century US (Solbergrand, 2018) to diverse ingredients in the history of Indian military food. Studies even show a positive impact on health, like the Falklands War (Crawford et al., 2007). Recent research continues this exploration, examining logistical challenges (Stephen & Jardine, 2023).

Ministry of Health and Population (2016) suggested a balanced diet for all age groups in Nepal. Department of Food technology and Quality Control (DFTQC, 2016) defines a healthy diet as one that provides vital nutrients, aids in weight control, and lowers the chance of developing chronic diseases. According to Chopra (2005), food is any substance that furnishes nutrition and energy for the body, including carbohydrates, fats, proteins, vitamins, minerals, and water. So, the critical role of food and nutrition education is important for promoting health and wellbeing.

DFTQC (2018) pointed out that the history of institutional meals in Nepal can be traced back to the early 1900s, when the British introduced the concept of mess halls, which were originally set up to provide food for British soldiers and civil servants stationed in Nepal. So far, Karki (2019) stated that the Nepali Army formulated the first ration scale on December 15, 1952, for up to the rank of Subedar (Warrant Officer Class 1). On July 14, 1969, the provision of rations was extended up to the rank of major, and on December 16, 1975, it was extended to the Chief of Army Staff.

Public Procurement Regulation (2007) clearly mentioned that each public office shall arrange ration rations by the end of the month of Bhadra (mid-August) every year. In accordance with the chapter 8, Rule 88 of Public Procurement Rules 2007, the government approved a ration quota or scale for their respective offices. However, the preparation and approval of the cost estimate procedure remain the same. The cost estimation process considers various factors, including the consumer price index of the relevant sector, as published by the Nepal Rastra Bank. Additionally, it takes into account the price index set by the governmental body overseeing agricultural product pricing, road facilities, local market rates, the previous year's procurement contract rates, and any guidelines issued by the Public Procurement Monitoring Office.

Nepal APF Hospital (2019) conducted a comprehensive investigation into the energy intake of macronutrients and essential micronutrients in the daily diet of APF soldiers during their basic training. The study's primary focus lies in providing evidence-based data on the existing ration scale and nutrient intake among these soldiers during training. By doing so, the research aims to assess the sufficiency of nutrient intake concerning the recommended dietary allowances (RDA). Moreover, the study seeks to lay the groundwork for further research in to establishing the Dietary Reference Intake (DRI) tailored to military personnel during both training and non-training periods in various terrains.

Research Methodology

This study used the autoethnography method. An autoethnographic is an ideal approach for exploring paternalism as it allows researchers to draw on their personal experiences within a particular culture to gain a deeper understanding of the dynamics of themselves or other interactions (Koot, 2019). Based on a literature review conducted by different scholars in different settings McLaurin's (2003), Butler-Kisber (2010), Nethsinghe (2012), Carano (2013), as cited by Adams, Jones & Ellis (2015), Liu & Lin (2018), this study adopted the autoethnography method.

The primary data was collected through Key Informant Interview (KII) and Focus Group Discussion (FGD). Additionally, virtual methods were used, where the researcher communicated with participants through mobile phones, WhatsApp, Facebook Messenger and E-mail. The researcher conducted remote KII with APF personnel using the online Zoom meeting platform. The researcher's existing work experience within the organization, specifically with ration management, proved to be extremely beneficial during the data collection phase of the research. The nature of this research is descriptive and analytical, as the information originates from various sources that have been synchronized and analyzed properly.

The research was based on primary data, followed by secondary data. For the primary data, the research was conceptualized during the Internal Study Tour (IST) in various units of APF, Nepal from 11-17 December 2022. The second phase field study was conducted from 19-30 May 2023 and investigated with 152 respondents in total. The researcher was visited various APF, Nepal units located in different

district. The secondary data for this study was sourced from a diverse range of published material, including books, literature, journals, and articles. The research conducted by adopting the general principles of ethics as responsibility, justice and the respect for intellectual property rights being conscious of multiple roles, the rule of consent, confidentiality and privacy.

Findings and Discussion

APF, Nepal is following the cash allowance system to manage ration since 2015. The current practices of institutional meal management system in APF, Nepal is applying one of the unique and effective method to monitor and supervise the mechanism (Singh, 2022). The policy framework and guidelines of APF, Nepal, have played a significant role in shaping and regulating the institutional meal practices within the organization. When asked about the meal management in APF, Nepal, participants expressed the following.

According to APF, Nepal Mess Operation Directives (revised version) 2079, ration items follow regulations in APF Regulation 2072, Schedule 16, with cash allowances deposited into bank accounts, subject to 1 percent government tax deduction.

APF's cash ration system is widely seen as effective, providing high-quality food. However, maintaining this standard within budget constraints poses challenges for suppliers.

Weather and poor road conditions are major hurdles in ration management, sometimes resulting in substitutes like bitten rice, noodles, and biscuits. Ration rates are Rs. 246.10 per person per day in Rasuwa and Rs. 255.30 in Nuwakot district.

Food consumption is a symbolic bridge between the inner self and the external world, embodying the essence of the exchange of culture, tradition and food taste (Kunwar, 2017). The food menu incorporates a variety of items, including cereals, pulses, vegetables, dairy products, meat, eggs, and fruits (Babusha et al., 2008). Within each unit, a comprehensive meal plan consisting of four daily meals are diligently implemented. In accordance with the unique geographical conditions

and food availability in each province, the menu varies to cater to distinct culinary preferences and regional specialties. From the mountainous regions, where hearty dishes like dal, bhat and tarkari (rice, lentils, and vegetables) with locally sourced ingredients are prevalent, to the terai plains, where aromatic rice, spicy curries, and delectable sweets dominate the palate, the menu is thoughtfully crafted to showcase the culinary heritage of each province.

Food Quality

APF, Nepal has set standards for food safety protocols. As per the rule, the authority should conduct regular audits to obtain quality certifications, conduct awareness campaigns, prioritize the quality of food by implementing regular checks and inspections by the ration management committee. The attention given to the quality of the mess and food is indeed commendable, including the cook's awareness, mess cleanliness, and the use of quality ingredients and kitchen utensils (Mess Management Directives, 2022).

Ordinary and Festival Food

The relationship between food and culture is deeply connected, as different societies have developed unique culinary traditions shaped by their ecological and environmental contexts. The cultural significance of food is evident in its classification into two categories: sacred and secular. Examining food habits, dietary patterns, and dining customs therefore, emerges as a cultural artefact that offers a lens through which we can better understand and appreciate the complexities of human society (Kunwar, 2017). APF, Nepal is celebrating various types of festivals by sharing happiness within the members of unit. One of respondents mentioned that

The security forces have a vital role in safeguarding and promoting the rich cultural heritage, traditions, and customs of Nepal. Deployed across the 77 districts, APF units embrace and celebrate a wide range of national and local festivals.

APF, Nepal is promoting the richness Nepali culture and traditions through celebration of vibrant festival. The name of festivals and foods are mentioned below.

Table 1*Ordinary and Festival Food of APF, Nepal*

S.N.	Month	Festival	Food Items
1.	Asar 15 (June)	<i>Dhaan Diwas</i> (National Paddy Day)	<i>Dahi, Chiura</i> (Yoghurt and Beaten rice)
2.	Sawan 15 (July)	<i>Kheer Khane Din</i> (Rice Pudding Day)	Rice Pudding, Potato and Pickle etc.
3.	Bhadra (August-September)	<i>Janai Purnima</i>	<i>Kwati</i> (Sprouted Lentils Soup) and meat
4.	Bhadra(August-September)	<i>Teej</i>	<i>Dar</i>
5.	Kartik (October-November)	Bada Bhoj Dashian)	Special food
6.	Kartik (October-November)	Tihar	<i>Roti</i> (Bread)
7.	Magh (January-February)	<i>Maghe Sankranti</i>	<i>Ghee, Chaku</i> (Ghee, Molasses)
8.	Magh 7	APF Day	Special food
9.	Chaitra (March-April)	<i>Chaite Dashain</i>	Special food
10.	Chaitra (March-April)	<i>Fagu Purnima</i>	Special food
11.	First week of month	Central Cook	Ordinary Food

Source: Field Study, 2023

APF units are organizing variety of foods based on availability in the local geographical setting. Special meal generally consists of dalbhat (rice and lentil) green vegetable, meat, fish pickle, papad, salad and appetizer.

Kitchen Structure and Dinning Space

The kitchen layout and dining space in APF, Nepal are carefully designed to support the efficient and smooth operation of food preparation and service. The layout is typically organized into distinct areas to facilitate optimized productivity, food safety and adherence to hygiene standards (Mess Management Directives, 2022).

Dining space is equally significant in providing a comfortable and pleasant environment for APF personnel to enjoy their meals. The dining area should be

spacious enough to accommodate all personnel and provide them with a conducive atmosphere to relax and socialize during meal times. The Central Mess is necessary to cultivate a strong sense of closeness, unity, and professionalism among officers. It serves as a hub for fostering professional relationships and strengthening bonds, ultimately enhancing the overall welfare and cohesiveness of the officers.

Nutrition and APF

Macronutrients are essential nutrients for achieving a balanced diet and maintaining good health. They emphasize the importance of consuming appropriate amounts of carbohydrates, proteins, and fats to meet the body's energy and nutritional needs (WHO, n.d.). Firstly, Carbohydrates are the body's primary source of energy, providing fuel for the brain and muscles. (American Heart Association, n.d.). Secondly, Proteins are important for building and repairing tissues, supporting immune function, and producing enzymes and hormones. The Recommended Dietary Allowance (RDA) for protein is 0.8 gram per kilogram of body weight per day for adults (National Academies of Sciences, Engineering, and Medicine, 2005). Lastly, Fats are vital for the absorption of fat-soluble vitamins, protecting organs, and providing insulation. The American Heart Association recommends limiting saturated fat intake to less than 7 percentage of total daily calories (American Heart Association, n.d.).

During the rigorous training phase, the personnel recognized the need to supplement their meals with extra food items to meet their energy requirements. In high altitude, APF personnel are feeling dehydrated and preferring hot food items to keep warm. The same food items that have been used across all geographical locations may not always be suitable due to the varying altitudes at which the force is deployed. The details of the nutritive calculation of the institutional meal of APF, Nepal is mentioned as follows:

Table 2*Caloric Value of Ration Items Per Day Per Person (APF, Nepal)*

S.N.	Items	Quantity (gram)	Protein (gram)	Fats (gram)	Carbohydrates (gram)	Total Calories
1.	Rice	720	48.96	3.6	564	2484
2.	Dal (Black gram)	113.5	28.3	0.7	267.5	387
3.	Cooking Oil	25 ml	0	25	0	225
4.	Ghee	30	0	30	0	270
5.	Sugar	30	0	0	30	120
6.	Condense Milk	15	1.5	1.5	11	63
7.	Atta	56.8	6.7	0.9	38.7	190
8.	Green Vegetable	170.3	3	0.17	8.1	45.9
9.	Beans	50	10	2	29.2	175
10.	Potato	125	2	0.1	25.8	121.25
11.	Meat (Goat)	30	5.5	4	0	60
12.	Meat (Chicken)	25	4.7	4.4	0	58
13.	High Energy Biscuit	6 pieces	8.4	22.8	64.5	497
14.	Egg (in a week)	4 pieces	6.6	6.6	0	86.5
Total			126	102	1039	4783

Source: Adopted and modified from DFTQC (2012) and Nepal APF Hospital (2023)

Table 2 indicates that ration items provided to APF personnel primarily include rice, black gram, cooking oil, ghee, meat, and beans. Based on researcher knowledge, total calories in all the security forces in Nepal are comparable. The calculated daily calorie intake per APF personnel is 4783 calories.

Perception Towards Meal

APF personnel both in plains and at high altitudes shared their happiness regarding the existing ration items and meal provisions. The research revealed that current ration scales adequately meet the nutrient requirements but the composition of ration items should vary based on the altitude of the unit. APF demonstrates its commitment to ensuring the well-being and satisfaction of its personnel while

upholding fairness and accountability within the organization (Mess Management Directives, 2022). One of the participants expressed the value of the initiative of the organization.

In all messes of the APF, a consistent standard of high-quality rice, excellent food and a wide variety of delicious dishes is prepared at the same level for all officers and other ranks. They also expressed their utmost appreciation and gratitude for the strong leadership and vision for providing the best possible dining experiences. The flavours are exquisite, with a perfect balance of spices and seasonings.

Provision and Practices of Other Organization

Nepali Army has implemented a ration tender system that has been in place for a considerable period of time. This system involves categorizing ration items into five packages: dry ration items, meat items, fresh food items, dairy products, and cooking fuel, specifically Liquefied Petroleum Gas (LPG). The contracts for supplying ration items are valid from the beginning of Magh (January/February) to the end of Poush (December/January) of the following year and the rate of ration is revised every year during the tender process. The Meals Ready to Eat (MRE) in the Nepali Army are prepared based on internal suggestions, the dietary preferences of Nepali people and the best practices of foreign forces. Typically, they are provided for three days under normal circumstances and twice a year during sensitive situations. However, MRE access is limited to a certain number of formation who deployed for special tasks. The procurement of MRE is carried out through the standard contract process. Additionally, there is a mandatory provision to use dry ration before their expiration (Nepali Army, 2019).

Nepal Police receives a cash ration allowance similar to APF, Nepal. However, the ration items provided are different from those of the APF, Nepal. In training institutions and at battalion levels, there is a ration management committee responsible for overseeing the distribution of rations. In other units, volunteer police personnel take charge of managing food for their respective staff and collect money from each person at the end of the month. The cash allowance does not undergo annual revisions, although prices may fluctuate in the market. National

Investigation Department follows a similar system as Nepal Police. The ration rates remain unchanged unless the government decides to make adjustments and increase those (Rajbhandari et al., 2022).

Prisoners or detainees in Nepal receive a daily ration for their food management. Adults are provided with 700 grams of rice and Nepali Rupee (NPR) 80 per day, while children receive a ration based on their age, with up to 600 grams of rice and NPR 50 per day. Pregnant women receive the same ration and special provisions from 30 days before childbirth until 60 days after delivery, including 700 grams of rice, 100 grams of ghee, 100 ml of cooking oil, and 50 grams of Jwano (Omum) each day (Department of Prison Management, 2023). The Division Forest Office takes charge of procuring and supplying ration to their staff, excluding the divisional officer. The District Rate Committee plays a crucial role in setting minimum prices for essential goods and services, ensuring that they are affordable for the public. This process is also followed by other agencies such as the Nepali Army. Each year, suppliers are selected through a contract system to renew the contract and maintain a smooth supply of rations.

Discussion

Institutional food services are responsible for providing meals to specific groups of people within organizations like hospitals, schools, nursing homes, the military, and industries. Among the three basic requirements for a human being, along with food, clothing and shelter, food plays a vital role, especially in militaries such as APF, Nepal where soldiers are deployed in diverse settings, including from plain field operations like Border Out Post (BOP), Kechanakawal, Jhapa (200 feet) to high mountains like Nechung, Mustang (15092 feet) (APF, Nepal, 2023).

APF, Nepal manages the ration distribution to its personnel in the barracks through a committee, following the guidelines outlined in the revised Mess Operation Directives of 2079. GoN currently considers ration money as income, subjecting it to a one percent tax on the total income. However, in India, the government has announced tax exemptions on ration money allowance and risk and hardship allowance provided to paramilitary personnel, specifically for non-gazetted ranks (Seventh Central Pay Commission, 2015). Therefore, it is recommended to that the

GoN grant tax exemptions on rations and other allowances for ranks ranging from Junior Commissioned Officers (JCOs) to followers.

The cash ration allowance policy in APF, Nepal has proven to be highly beneficial for the organization, providing a comfortable and efficient means of managing ration related issues through a dedicated committee. The cash allowance system implemented in APF, Nepal has brought significant advantages to the organization, including the ability to maintain food quality, support the local market and ensure transparency.

APF units play a crucial role in preserving and promoting Nepal's rich cultural heritage. They actively participate in national and local festivals celebrated across the country's 77 districts (APF, Nepal, 2023). The celebration of festival including collective activities such as central annual day of unit, central cook system and birthday celebrations, strengthens unity within the entire APF personnel. Additional food items are procured for festive occasions. However, these additional expenses are managed using the ration allowance provided, as there are no extra allowances. Hence, the additional allowance should be provided by the government to celebrate various types of festivals in the unit.

During the rigorous training phase, the personnel recognized the need to supplement their meals with extra food items to meet their energy requirements. APF personnel often experience weakness and prefer hot meal products to maintain warmth when working at high elevations. The same food items that have been used across all geographical locations may not always be suitable due to the varying altitudes at which the force is deployed, ranging from 200 feet to over 9000 feet. It is important to consider factors such as the availability of local products, nutritional balance, and variety of choices when selecting the ration items. Most of the participants suggested categorizing the ration items based on altitude levels (below 9000 feet, above 9000 feet, above 12000 feet), training requirements, and options for both vegetarian and non-vegetarian personnel.

Good health encompasses not only the absence of disease but also complete physical, mental, and social well-being. Food plays a crucial role in supporting overall well-being as it provides our bodies with essential nutrients. To maintain

optimal health, our bodies require more than 45 different nutrients, and a deficiency in any of these can lead to health issues and a weakened immune system (WHO, 2021). Recognizing the importance of food, it is listed as one of the six fundamental rights of human beings, alongside access to water, air, clothes, shelter, and security. It is vital for everyone to have access to sufficient, balanced, and safe food that caters to their nutritional needs and cultural preferences (DFTQC, 2012).

Conclusion

The study illustrates that the provision of institutional meals demands careful consideration of various factors such as quality, nutrition, planning, and execution. The significance of these aspects is expressed by numerous researchers across different studies. Efforts to enhance institutional meal provision should include promoting self-management and local agriculture, implementing nutrition education programs and conducting regular audits. Accommodating cultural dietary needs and maintaining high standards in kitchen and dining facilities are essential for ensuring the well-being of personnel. Furthermore, the inclusion of balanced and nutritious meal options, particularly in challenging environments, can contribute to the physical fitness and performance of individuals. Exploring opportunities to introduce herbal-based products and collaborating with relevant organizations for quality certification can further improve food management practices and nutrition standards. In addressing these considerations comprehensively can lead to the development of effective strategies for enhancing institutional meal provision, thereby benefiting the overall health and performance of personnel within the organization.

References

- Adams, T.E., Ellis, C. & Jones, S.H. (2019). Autoethnography. *The International Encyclopedia of Communication Research Methods*. 7(2), <https://www.researchgate.net/publication/318858682>.
- American Heart Association. (n.d.). Carbohydrates. <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition/basics>
- American Heart Association. (n.d.). Fats. <https://www.heart.org/en/healthy-living/>

healthy-eating/eat-smart/fats

Angelou, M. (1969). *I know why the caged bird sings*. New York, NY: Random House.

Armed Police Force (APF), *Nepal*. (2020). APF day special publication [Special Publication].

Armed Police Force, *Nepal*. (2023). Report of ration rate of all districts, 2080. [Unpublished].

Armed Police Force, Nepal. (2023). Details study of APF, Nepal in Border Security. [Unpublished]. APF, Nepal Headquarters, operation department. Kathmandu.

Aryal, K. P., Poudel, B. K., & Thapa, B. B. (2017). Traditional knowledge and practices on wild edible plants in Baitadi and Darchula districts, Nepal. *Journal of Ethnobiology and Ethnomedicine*, 13(1),32.

Babusha, S.T., Singh, V.K., Shukla, V. & Prasad, N.N. (2008). Assessment of ration scales of the armed forces personnel in meeting the nutritional needs at plains and high altitudes- I. *Defence Science Journal*, 58(6), 734-744.

Basnet, S. (2016). A study on traditional and ethnic foods of Nepal. *International Journal of Advanced Research*, 4(7), 1103-1112.

Benton, D. (2007). The impact of diet on anti-social, violent and criminal behaviour. *Journal of Neuroscience & Biobehavioral Reviews*, 31(6), 752-774.

Bourdieu, P. (1977). *Outline of a theory of practice*. England. Cambridge University Press.

Campbell, T. C. & Campbell II, T. M. (2006). *The China study: The most comprehensive study of nutrition ever conducted and the startling implications for diet, weight loss and long-term health*. BenBella Books. ISBN 978-1932100662.

Chopra, P. (2005). *Food and nutrition education*. New Delhi, India. Sakura publishing corporation.

Clausewitz, C. V. (1832). *On War*. Posthumously.

- Crawford I. P., Abraham P., Brown M., Stewart J. B. & Scott R. (2007). Lessons from the Falklands Campaign. *J. R. Army Med. Corps*, 13(6), 74–77.
- Darsch, G. A., & Faso, R. M. (2006). The socio-cultural construction of meal patterns: An analysis of the literature. *Appetite*, 47(2), 125-133.
- Davis, B., Lockwood, A. & Stone, S. (1998). *Food and beverage management*. Oxford: Butterworth Heinemann.
- Davidson, A. (2014). *The Oxford companion to food*. England: Oxford University Press. ISBN- 978-0199677337.
- Department of Defence (DoD). (2015). *Army food service regulation*. Washington, DC: Department of Defence.
- Department of Defence (DoD). (2023). Meals ready to eat <http://www.dla.mil/DispositionServices/ProductsServices/MealsReadytoEat.aspx>.
- Department of Food Technology and Quality Control (DFTQC). (2012). *Food composition table for Nepal, 2012*. <https://dftqc.gov.np>
- Department of Food Technology and Quality Control (2016). *National dietary guidelines for Nepal*. <https://dftqc.gov.np>
- Department of Food Technology and Quality Control (2018). *Report on importance of diet and nutrition for Nepal*. <https://dftqc.gov.np>
- Department of Prison Management (2020). *Prison Rules*. Ministry of Home Affairs. Kathmandu.
- Devkota, H.R., Adhikari, R., Kaundininnyayana, S. (2021). Culinary herbs and spices in Nepal: A review of their traditional uses, chemical constituents, and pharmacological activities. *Ethnobotany Research and Applications* 21(40). <https://doi:10.32859/era.21.40.1-18> .
- Dolan, R. (2010). *The business of institutional foodservice*. Hoboken, New Jersey: Wiley.
- Douglas, M. (1966). *Purity and danger: An analysis of concepts of pollution and taboo*. Routledge.
- Drewnowski, A., Hess, J., Finley, J.W., & Ingram, J.S.I. (2020). Towards Healthy

Diets from Sustainable Food Systems. *Journal of Current Developments in Nutrition*. 10(4). <https://www.researchgate.net/figure/cu.A-Complex-Adaptive-Systemshowing-points-of-intervention-actors>

- Edwards, J. S. A., & Hartwell, H. J. (2009). *Institutional meals*. Woodhead Publishing Limited.
- Ellis, C. (2013). *Carrying the Torch For Autoethnography*. In S. H. Jones, T. E. Adams., and C. Ellis (eds.) *Handbook of Autoethnography* (pp. 9-12). Left Coast Press.
- Food and Agriculture Organization. (1996). *Rome declaration of world food security and world food summit plan of action*. <http://www.fao.org/docrep/003/w3613e/w3613>
- Food and Agriculture Organization. (2020). *Diet, nutrition and the prevention of chronic diseases*. <https://www.fao.org/3/i3753e/i37.pdf>
- Foset, J. M., Peeters, G., & De Vries, N. K. (2003). The relation between dietary fat intake and risk of breast cancer: A meta-analysis of prospective cohort studies. *American Journal of Epidemiology*, 157(1), 76-80.
- Foskett, D., Ceserani, V. & Kinton, R. (2003). *The theory of catering*. Oxon: Hodder and Stoughton.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. University of California Press.
- Gomez-Pinilla, F. (2014). Brain foods: The effects of nutrients on brain function. *Nature Reviews Neuroscience*, 9(7), 2008. <http://dx.doi.org/10.1038/nrn2421>
- Government of Nepal. (2015). *Armed Police Force Regulation 2015*. Ministry of Home Affairs, Kathmandu.
- Gurung, D. (2014). The ration card system in the Nepalese army: A historical overview. *Journal of the Nepal Army*, 56(1), 1-12. doi:10.3126/j.nja.2014.01.01
- Ishdorj, A. and Higgins, L. (2015). Children's food security and participation in the national school lunch program. *Applied Economics and Finance*, 2(1).

<https://doi.org/10.1114/aef.v2i1.655>

- Jacka, F. N., Mykletun, A., & Berk, M. (2014). Moving towards a population health approach to the primary prevention of common mental disorders. *BMC Medicine Journal*, 8(1), 1-9.
- Kahn, B. & Wansink, B. (2004). The Influence of Assortment Structure on Perceived Variety and Consumption Qualities. *Journal of Consumer Research*. 30(4). <https://www.researchgate.net/publication/24099228>
- Karki, S.K. (2019). *Effect of diet system in BMI of Nepali Army personnel*. Unpublished Thesis. Army Command and Staff College. Shivapuri, Kathmandu.
- Khan, M.A.F., Sohaib, M., Iqbal, S., Ali, A. & Chaudhry, M. (2022). Revision of ration scale for Pakistani servicemen according to geographical deployment and physical activity level. *Journal of Food Science Technology Campinas*. 42(10), DOI:[https://doi.org/ 10.1590/fst.37521](https://doi.org/10.1590/fst.37521)
- Koot, S.(2019), Autoethnography and the power in a tourist researcher position in Andrews, H ; Jimura, T. & Dicson, L. (Eds.) *tourism ethnographies* (pp 56-56), London column. Routledge.
- Kunwar, R. R. (2017). Food Tourism Revisited. *Journal of Tourism and Hospitality*, 8(1). <https://www.google.com/search?q=Food+Tourism+Revisited+ramesh+raj+kunwar+reference>.
- Kunwar, R.M., Shrestha K.P., Bussmann R.W. (2010). Traditional herbal medicine in Far-west Nepal: A pharmacological appraisal. *Journal of Ethnobiology and Ethnomedicine* 6(35)
- Kunwar, R.R. (1999). *Fire of Himal. An Anthropological Study of the Sherpas of Nepal Himalayan Region*. New Delhi: Nirala Publication. ISBN-81-85693-64-1.
- Lang, T., Barling, D., & Caraher, M. (2009). *Food policy: integrating health, environment and society*. Oxford University Press.
- Lowdin, P.(1998). *Food, Ritual and Society*. Kathmandu: Mandala Book Point.
- Malinowski, B. (1944). *A Scientific Theory of Culture and Other Essays*. England:

Oxford University Press.

Meiselman, H. L., Waterman, D., & Symington, L. E. (1974). *Armed forces food preferences*. <http://www.stuff.nz/armed-food-preferences/7038621>

Mess Management Directives. (2022). Issue No.4. Armed Police Headquarters, Halchowk, Swoyambhu.

Ministry of Health and Population.. (2016). *Nepal Demographic and Health Survey 2016: Key Indicators Report*. Kathmandu, Nepal: Ministry of Health and Population.

National Academies of Sciences, Engineering, and Medicine. (2005). *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (Macronutrients)*. Washington, DC: The National Academies Press.

National Restaurant Association. (2022). *The state of the industry: Institutional foodservice*. Washington, DC.

Nepal APF Hospital. (2019). *A Study Protocol on Determination of Dietary Intake of the soldiers during Armed Police Force (APF) Basic Training: A Mixed Approach*. Unpublished Report. Kathmandu, Nepal: Nepal APF Hospital.

Nepal Health Research Council. (2018). *Nepal health profile 2018*. Kathmandu, Nepal.

Nepal Police. (2023). Ration management system in nepal police. [Unpublished]

Nepali Army. (2019). *Nepali Sena ma dry ration (MRE) ko bebasthapan sambandhi nirdeska, 2077*.

Nestle, M. (2015). *What to eat: The guide to healthy eating that's based on science*. New York, NY: Basic Books.

Pandey, B.B. (2019). *Tyas Bakhatko Nepal*. Kathmandu, Nepal: Phoenix Books. ISBN: 9789937705455

Patton, G. S. (1975). *War as I Knew It*. Houghton Mifflin Harcourt.

Payne-Palacio, J. & Theis, M. (2005). *Introduction to foodservice*. upper saddle river, New Jersey: Pearson.

- Pokhrel, R., Bhatta, L. D., & Thapa, G. (2015). Food consumption pattern and nutritional status of indigenous people: A case of Chepang households of Nepal. *The Indian Journal of Nutrition and Dietetics*, 52(3), 267-275.
- Pollan, M. (2013). *Food rules: An eater's manual*. New York, NY: Penguin Press.
- Popkin, B. M., Adair, L. S., & Ng, S. W. (2012). Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews*, 70(1), 3-21.
- Public Procurement Regulation. (2007). Chapter8, Res, 88 and 93. Kathmandu. Government of Nepal.
- Rajbhandari, B., Shilpakar, O., Gurung, M. & Poudel, L. (2022). The impact of basic police training and scale diet on body composition and aerobic performance of police officers trainees. *Journal of Nepal Health Research Council*. 19(53). pp 830-7.
- Reddy, U. (2016). *Feeding the dead: ancestor worship in ancient India*. Oxford University Press.
- Schmidt, M. (2014). *Wittgenstein's philosophy of language*. England: Polity Press.
- Seventh Central Pay Commission. (2015). Indian Pay Commission. (2019). Report of the seventh central pay commission. Government of India. https://doe.gov.in/files/cenentral-pay_document/7cpc_report_eng.pdf
- Sharma, R. S. (1999). *Indian food: A historical companion*. New Delhi, India: Oxford University Press.
- Shrestha, S. R. (2004). *Community medicine*. Kathmandu, Nepal: Tribhuvan University.
- Singh, B. B. (2020). *Ration management system in Armed Police Force, Nepal*. Unpublished Thesis. APF Training College.Kakani, Nuwakot.
- Smith, K. R., Woodward, A., Campbell-Lendrum, D., Chadee, D. D., Honda, Y., Liu, Q, & Sauerborn, R. (2020). *Human health: impacts, adaptation, and co-benefits*. Intergovernmental Panel on Climate Change. (IPCC).
- Solberggrand. (2018). *A history of military food: rations, cuisine, and nutrition*. Routledge.

- Souza, S., Shetty, P., & Shetty, G. (2021). Nutritional status of mid-day meal program on government and private school students: a comparative study. *International Journal of Community Medicine and Public Health*, 8(10), 4982. <https://doi.org/10.18203/2394-6040.ijcmph20213806>
- Stephen, C. M., & Jardine, D. (2023). *Feeding the Army: Logistics and Subsistence from the Seven Years' War to the First World War*. Cambridge University Press.
- Thapa, M., Pandey, D.B., Singh, S.B. (2022). Ration management system in Armed Police Force, Nepal; Review on the basis of calories food and balanced diet. Unpublished Group Research Paper. APF Command and Staff College, Sanogaucharan, Kathmandu.
- United Nations Children's Fund (UNICEF). (2018). *The state of the world's children 2019: Children, food and nutrition: Growing well in the 21st century*. New York: UNICEF.
- Wellborn, S.T. Malhotra, M. S., Chandra, U., & Sridharan, K. (1976). Dietary intake and energy requirement of Indian submariners in tropical waters. *Ergonomics*, 19(2),14-18
- World Health Organization(WHO). (2003). *Diet, nutrition and the prevention of chronic diseases* <http://who.int/news-room/57864/diet/detail/nutrition>
- World Health Organization. (2020). *Nutrition*. <https://www.who.int/news-room/fact-sheets/detail/nutrition>
- World Health Organization. (2020). *Healthy diet: Fact sheet*. <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>
- World Health Organization. (2021). *Healthy diet*. <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>
- World Health Organization. (n.d.). *Nutrition*. https://www.who.int/health-topics/nutrition#tab=tab_1