



Asta-Ja USA Newsletter

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Message from the President

Greetings!

It is my great honor and privilege to present the fifth newsletter from Asta-Ja USA. Asta-Ja USA is continually striving to fulfill its mission of promoting sustainable development and management of natural and human resources through education, capacity building, charitable activities, applied research, policy decision support, and environmental conservation.

Asta-Ja Framework is a theoretically grounded grass-roots-based planning and management approach to conservation, development, and utilization of natural and human resources for accelerated economic growth and fast-paced socio-economic transformation of Nepal. Asta-Ja means eight of the Nepali letter “Ja” [Ja] (water), Jamin (land), Jungle (forest), Jadibuti (medicinal and aromatic plants), Janashakti (manpower), Janawar, (animals), Jarajuri (crop plants), and Jalabayu (climate)]. This issue of the newsletter covers diverse topics including human resources, cover crops, air pollution, economics, supply chain, dry foods, and virtual briefing to H.E. Ambassador Sridhar Khatri.

Asta-Ja USA has been engaged actively on various activities including agricultural and environmental research and development, community outreach, natural resource studies, relief works, climate change adaptation, organic agriculture, and community development in Nepal. Given the poor status of Nepalese agriculture and increasing environmental degradation, Asta-Ja USA is focusing its future activities mainly on agriculture and the environment. More specifically, climate-smart agriculture, food storage and reduction on food wastages and losses, women empowerment and enterprise development, nationwide environmental sustainability community awareness, and collaboration with various agencies and stakeholders in Nepal for research and development projects will be in high priority.

I would like to thank the Board of Directors and Executive Officers of Asta-Ja USA, Asta-Ja members associated with other Asta-Ja organizations including Asta-Ja RDC, Asta-Ja ICC, Asta-Ja Abhiyan Nepal, Asta-Ja Agriculture Cooperative, and Asta-Ja Vyas Bhumi Nepal, and all other Asta-Ja Campaigners as well as individuals and organizations who have been involved heavily on sustainable conservation, development and utilization of Asta-Ja resources for economic growth, environmental quality and socio-economic transformation of the communities.

Please visit our website <http://www.astajausa.org/> for more information.



Dr. Durga D. Poudel
President, Asta-Ja USA



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Human Resources: Retaining Trained Manpower is Critical for the Development of the Country

Countries in the world are often classified as developed, developing, underdeveloped and least developed based on the level of their economic development and quality of human life within the country. Development of a nation is achieved through proper planning and implementation of various programs that mobilize available resources in harmony with the environment. Human resources play the most crucial role in the development of a nation.

Many developed countries invest a huge amount of resources in developing human resources. These countries attract students with high potentials from around the globe through a number of scholarship/fellowship programs. Additionally, targeted programs are designed to lure highly quality skilled manpower through their immigration policies. These programs have attracted trained manpower, especially from less developed countries including Nepal. This naturally widens the gap between the developed and not-so-developed countries like Nepal in terms of human resource availability.

Nepal's trade deficit is alarming. its export commodities include medicinal herbs, ginger, tea, cardamom, and carpets. Human labor has become the major export commodity in recent decades. As per the 1850 treaty, Nepalese youths are recruited in the Indian or British army. Political parties and their leaders, when they were in the opposition, used to raise these issues very strongly. There have been a lot of political change in the country in last 30 years, and those leaders have reached to the highest office of the country. However, the situation has not changed for any better, rather over 1500 Nepalese leave the country daily in search of employment. It is estimated that about five million Nepalese are working abroad, mostly as physical laborers (in Malaysia and the gulf countries), and remittance contributes about 30% of Nation's GDP.

Government of Nepal has established the 'Ministry of Labor, Employment, and Social Security'. There are two Departments under this Ministry; one of them is the Departments of Foreign Employment. In addition to this, there is also the 'Foreign Employment Promotion Board'. Political leaders/parties, who once opposed the recruitment of the Gorkha army, now tend to take pride when more people go abroad in search of jobs. They used to call it 'shameful' act for the country when youths joined foreign armies (that came with some benefits such as pensions at the end of the employment). Majority of current 'foreign employment' is physical laborer without any benefits after the termination of job.

The country has already begun to experience lack of both skilled and unskilled manpower. Lack of workforce has already led to the abandonment of farming. Other sectors also have felt similar pinch. Most of the goods of daily consumption including food grain is imported. Much of

the remittance is spent either in the service sector or in non-productive sectors.

One of the silver linings of this outmigration from Nepal is the development of trained manpower with expertise in several disciplines at the international level. Many of these experts are interested to help their motherland, if provided with some opportunity. However, government has practically failed to formulate policies and develop programs to attract such human resources. Some of the East-Asian countries such as China, Cambodia, Japan, Korea, Thailand, and Vietnam have developed and adopted several strategies including attractive salaries, research facilities, and more support staff to attract good professors and scientists. Can Nepal develop similar strategies so that Nepali diaspora who can play key roles in the development of Nepal can be attracted back to the country? Needless to emphasize that manpower is the driving force of development. Nepali political leaders used to publicize political slogan against the recruitment of Gorkha army by foreign countries. Now, they achieved not only the political system of their interest, but also have written and promulgated Nepal's Constitution multiple times. Still, there is a dearth of human resources in the country and there is no sign of much needed socio-economic transformation of the nation.

Technically, Nepal is exporting trained manpower by establishing a separate Ministry, the Ministry of Labor, Employment, and Social Security. While Nepali diaspora is bringing a significant amount of money into the country, it is not being used in the country wisely. The foreign remittance should be used as a seed money to have a multiplicative effect in the economy rather than using it in importing goods and construction materials from other countries. Nepal certainly needs to develop a clear plan in utilizing its human resources effectively in its overall development. When can the nation absorb trained manpower and keep them inside the country in a big question? While the Gorkha army is working in India, the UK, and other countries, they are working with dignity, majority of Nepali workers in the middle east, Korea, Malaysia, and other parts of the countries do not feel as dignified as the Gurkha army. It is not the purpose to compare between these two groups of people, the point here is that how to retain the trained manpower in the country and use it in nation-building. Human resource is a key factor for nation building and should be utilized properly.



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Cover Crop Benefits on Ecosystem Services

Cover crops are usually grown during the fallow periods without chemical inputs and irrigation to cover the soil surface and reduce soil erosion. During cover crop termination, cover crop residues are returned to the soil without harvesting biomass. Cover crops provide many ecosystem services, such as improved soil health, reduced environmental degradation, and increased crop yields, depending on cover crop species. Enhancement in soil health due to cover crops include increased soil aggregation, water holding and infiltration capacities, soil organic matter, nutrient cycling, microbial activity, and biodiversity. Reduced environmental degradation include decreased N leaching to groundwater and increased carbon sequestration that reduce global warming potential and mitigate climate change. Cover crops also reduce weeds and pest infestations.

Legume cover crops increase succeeding crop yields by supplying nitrogen through nitrogen fixation from the atmosphere. As a result, legume cover crops reduce nitrogen fertilization rates to succeeding crops, which is a substantial saving to producers for crop production. Depending on cover crop growth, some legume cover crops have been reported to provide as much as 200 kg N ha⁻¹. In contrast, nonlegume cover crops reduce N leaching and increase soil organic matter through enhanced above- and belowground biomass production. Enhanced root growth extract more soil residual nitrogen, thereby reducing nitrogen leaching. Greater biomass production increase soil organic matter through increased crop residue input. Because legume and nonlegume cover crops do not provide all ecosystem services alone, a mixture of legume and nonlegume cover crops is sometime grown together to provide most of these services. It has been reported that cover crop biomass is usually greater in a mixture of legume and nonlegume species than either species alone due to their mutual benefits. While legumes supply N to nonlegumes, nonlegumes provide physical support to legumes, thereby increasing the overall biomass production of the mixture.

There are some constraints in growing cover crops. Producers have to purchase seeds and plant them, which is an additional cost of crop production. Cover crops are usually grown in the winter, although some are grown in the summer. Winter cover crops require mild winter with adequate precipitation for growth and biomass production. As a result, cover crops may not perform well in arid and semiarid regions with harsh winter climate and limited precipitation.

Nepal usually has a mild winter weather with adequate precipitation, especially in mid hills and the Terai region. Cover crops can be grown in the winter after summer crop harvest, such as after rice harvest in Terai and maize or other summer crops in

the mid hills. It has been known that continuous cropping of as much as two crops a year and removing all aboveground biomass has decreased soil fertility by reducing soil organic matter. Furthermore, continuous application of nitrogen fertilizers to crops, sometime above the recommended rates, increased soil acidity, which further reduced soil fertility, as crops do not respond to increase yield with excessive nitrogen fertilization. It is

time to increase soil organic matter and reduce nitrogen fertilization rates to crops by growing cover crops in Nepal. Although removal of crop residue after grain harvest provides some benefits to producers for using them for energy and beds for livestock, it can reduce soil health and quality by reducing soil organic matter. Therefore, more emphasis should be given to return crop residues to the soil and reduce nitrogen fertilization rates to crops so that soil health and environmental quality can be enhanced and crop yields can be sustained in Nepal. This can be achieved by growing a mixture of legume and nonlegume cover crops in the winter or summer when lands are fallowed, especially in regions with mild cold weather and adequate precipitation. Another option for producers who employ integrated crop-livestock system is to let animals graze in the cover crop field during the flowering period, as animal grazing can improve soil health compared to no animal grazing by returning feces and urine returned to the soil. This can also reduce the cost of animal feed to the producers. ***



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A cover crop mixture with clover, triticale, and radish.

Environmental Scientists: Manpower for Rebuilding the Nation

Environmental Science is an interdisciplinary field that encompasses multiple disciplines, ecology, biology, physics, chemistry, and other social and behavioral sciences. It delves into understanding the earth's natural processes and solving problems using a holistic approach. The interdisciplinary nature of the field led to the development of concepts such as sustainable agriculture, green/ecofriendly products, green buildings, sustainable /green transport, smart city, biomimicry, circular economy, and green economy. The Federal Democratic Republic of Nepal is lagging in development and economic prosperity. To overcome poverty and rebuild the nation after the pandemic will be challenging. The euphonious slogan "Prosperous Nepal, Happy Nepali" for the resilient future of the people and the country will come to fruition with green investments and mobilizing a skilled workforce. The significance of environmental scientists, managers, environmental health specialists, and environmental engineers thus cannot be overstated in rebuilding the nation post disasters and post-pandemic by designing and/or utilizing emerging sustainability concepts and adopting well-established best practices.

To date, Nepal's developmental framework is weak and unsustainable. Nepal's majority of the developmental budget spending takes place towards the end of the fiscal year allowing no sufficient time to execute plans or projects in an organized and resource-efficient manner. Thus money spent on development has been like pouring water into the sand. About 66 % of the development expenditure is financed through donations, assistance, and loans from foreign countries. Therefore genuinely speaking there is no room for wasteful imprudent spending. Well-thought planning and wise spending policies could maximize better outcomes from it.

Nepal's global sustainable development goal "Envisioning Nepal 2030" is to make cities and villages livable emphasizing clean air, clean water, waste management, and availability of green spaces. To fulfill this goal environmental scientists and environmental engineers can play a significant role. Ecotourism is another avenue where environmental scientists can help to increase revenue generation for the country. For this,

they can contribute by sharing concepts, making or designing green accommodations with amenities run on renewable energy, making

eco-friendly transportation, promoting the use of local resources and locally grown farm produce, promote nature adventures such as bungee jumping, sky diving & parachuting, paragliding, hand gliding, hiking, camping, rafting, bouldering, Zip-lining, snowmobiling (sledding), and canyoning. Tourism contributed about 7.9 % to the total GDP of Nepal in 2018 and 2019. Promoting and enhancing sustainable tourism will accrue more revenues as it draws the attention of more and more visitors. Similarly, environmentalists have a big hand to play in the feasibility study of projects, in energy generation and energy usage, infrastructure development and choice of building materials, aware public and advising government authorities about environmental problems, their mitigation measures, and provide solutions to the environmental problems, protecting biomes and biodiversity and many other entities of nature. Environmental health experts are critical in need during natural disasters, epidemics, and pandemics. They can guide planners in tackling health crises, form health guidelines, and go out in the field for emergency response or humanitarian support ensuring optimal sanitary conditions availability. They can oversee the clean-up of polluted areas, collect health statistics, and invigilate industries for ensuring occupational safety and protection of workers and being accountable to the health of the public. Likewise, environmental scientists or environmental biologists have a very important role to play in the wake of an increasing number of emerging infectious diseases such as novel coronavirus through research.



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The universities which produce postgraduates in environmental science, environmental health, environmental management, and environmental engineering in Nepal are Tribhuvan University affiliated Central Department of Environmental Sciences (CDES), Khwopa College, Goldengate International College, and College of Applied Sciences, all of the offers Masters of Science in environmental sciences while the earlier offers M.Sc. Environmental Health in Disaster and Ph.D. in Environmental Science as well; Kathmandu University offers Masters & Ph.D. in Environmental Science, Masters in Environment and Natural Resources, and Masters & Ph.D. (of Technology) in Environmental Engineering; School of Environmental Science and Management (SchEMS) of Pokhara University offers Masters of Science in Environmental Management; and Purbanchal University offers Masters in Environmental Administration and Management. These educational institutions produce educated and trained manpower in the very field. Many of these are absorbed in NGOs and INGO and few are tapped in governmental positions such as environmental officer, environmental inspector but many of them end up unemployed due to the lack of creation of job opportunities by private and government sectors. These highly potential educated human resources become the prey of favoritism, nepotism, and political unwillingness which led to an inferiority complex, depression, and brain drain. This is evident from Pew research center analysis of 2016 data, which showed that Nepal is among the eight highest diversity visa lottery filing countries and many of the applicants are well-educated manpower. This is a really unfortunate situation for the country, and it should be a matter of shame for the leadership.

There are many career opportunities in this field. The most prominent ones are assessing the project's Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA), and Strategic Environmental

Assessment (SEA) which eventually determine the feasibility of the project. However, the lack of enough development projects, no green initiatives (renewable energy, green transport, green buildings), last-minute planning and unsustainable development works, corruption, favoritism such as consultancies run by relatives or environmental enthusiasts or non-experts who are party affiliates receiving the contract become a critical player of approving or disapproving the project are the major setbacks for educated career seekers. One example of failure of green transport initiative was reported by Nepali times is presented here. The contemporary prime minister during the inauguration of 5 BYD electric buses announced in 2018 that in two years' time Nepal will have 20% electric vehicles (EV) plying on the road. Looking after 2 years, none of those 5 new EVs were permitted to operate nor was an excise tax on EVs reduced to promote them. Instead, the excise tax was raised 40 % on top of a 60% additional raise on custom duty on battery-powered cars by the government.

In my opinion, looking at the number of graduates from the above-mentioned universities and their colleges since they launch their environmental programs, the workforce produced (environmental experts and career seekers) is not adequate given the fact that Nepal is nature's paradise and has bountiful resources. The only way to achieve prosperity in Nepal is through sustainable utilization of natural resources which we ASTA-JA community advocated for a long time. Leadership should realize the immense role of environmental professionals, experts & career seekers and give the right placement for them. Similarly, environmental experts should diversify their career pathways and look into ways to leverage their presence in government, public, and private sectors.

Current Economic Woe of Nepal: It's Dimensions, Reasons, and Solutions

If current media trending and political discourses are to be believed Nepal is inching toward a grave economic situation like the one Sri Lanka has fallen into. So, the current situation in Nepal demands an honest and in-depth investigation of the gravity of the problems, factors contributing to the problems, and possible short- medium- and long-term solutions, which this paper attempts to undertake. Analyses in this paper are based on data collected from the following sources:

(Ministry of Finance, Government of Nepal: <https://mof.gov.np/site/publication-detail/3151>; Nepal Rastra Bank: https://www.nrb.org.np/contents/uploads/2022/02/MP2078_79-Mid-term-Review-Final-1.pdf; and World Bank: <https://databank.worldbank.org/reports.aspx?source=world-development-indicators>).

A. Dimensions to Current Economic Woes of Nepal

The current economic woes of the country extend over three dimensions: (1) alarmingly rising current account deficit, (2) falling foreign currency reserves, and (3) ballooning liquidity crunch.

1) Alarmingly Rising Current Account Deficit

In the first half of this fiscal year (2078/79), current account deficit reached Rs. 241.3 billion, which was only Rs. 51.68 in the same period last year, recording a **jump of 467%**, which indicates that the country is heading toward a grave situation. A jump in current account deficit in itself is not a big problem. What is worrisome, however, is the composition of import. Out of total import in this period, the shares of capital goods and intermediate goods are 35.4% and 53.7%, which looks quite encouraging, because while capital goods enhance nation's production capability, intermediate goods go through value addition before they go to the hands of the consumers and add to the GDP. But the bigger question is did the import of capital goods and intermediate goods increase the production capability and added value and thereby enhanced the nation's GDP? The actual data indicates otherwise. While current account deficit was 1.2% of GDP last year, it is 8% this year. **Rising current account deficit quickly depletes foreign currency reserves.**

2) Falling Foreign Currency Reserves

The foreign currency reserves by the end of Paush last year (2077) was Rs.1493.78 billion, which fell to Rs.1165.80 billion by the end of Paush this year. This is a **22% decline**, which is really a grave situation.

Falling foreign currency reserves weakens a nation's economy in three ways:

(a) it weakens a nation's ability to import capital and intermediate goods **lowering the nation's productivity and GDP;**



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(b) it **discourages foreign investors** as they lose confidence on their ability to repatriate their profits; and (c) it lowers the value of domestic currency **fueling inflation** as most of the country's consumption and investment goods is imported.

3) Shortage of Loanable Funds (Liquidity Crunch)

Request for loanable funds, on one hand, is indicative of investors' optimism on the prospects of the economy it is also indicative of the potential for the expansion of the economy on the other hand. But investors' inability to access the loanable funds in the amount desired **limits both the future potential of economic expansion as well as current economic activities.** This situation is characterized as the liquidity crunch. That Nepal currently is facing the liquidity problem is evident from the rise in interest rates during the last one year. The Paush data shows that, compared to the last year, this year, the interest rate on 91-day treasury bills has increased from 0.87% to 5.07%, the inter-bank lending rate has gone up from 0.14% to 4.76%, average weighted interest rate on credits has increased from 9.09% to 9.44%, average weighted interest rate on deposits has inched up from 5% to 6.37%, and the base interest rate on which banks base their lending rate has gone up from 7.18% to 8.42%. A more than **483%** ($= ((5.07-0.87)*100)/0.87$) jump in treasury bill rate makes government borrowing very expansive **limiting its ability to borrow and finance development projects.** Further, a high interest rate on credits makes many potential investment projects infeasible, thereby, **lowering the demand for investment.** A fall in investment lowers the level of capital creation, which in turn lowers the nation's production capability and ultimately the nation's GDP.

B. Reasons Behind Current Economic Woes of Nepal

1) Reasons for Rising Current Account Deficit

- a) **Significant rise in the import of luxurious products:** In the first 6 months of 2078, import of gold and other non-essential commodities has reached Rs. 722.687 billion causing a huge current account deficit.
- b) significant amount of imported products is **exported to India through informal channels.** Revenue generated through such cross-border informal trade never comes into official record, which drives the current account deficit even further.
- c) **Increasing number of people seeking foreign employment.** In first six months of 2078 alone 30,837 new approvals for foreign employment were issued. This increasing number of foreign employment seekers creates labor shortage in agriculture and productive sectors back home and fuels consumption and import enlarging the current account deficit even further.

2) Reasons for Falling Foreign Currency Reserves

- a) **Significant rise in goods trade deficit:** In the first half of 2077, the goods trade deficit was Rs. 645 billion, which increased to Rs. 880 billion during the same period in 2078, recording a **jump of 36.43%**.
- b) **Over-invoicing of imports from 3rd countries:** Unofficial sources indicate that a significant portion of imports, especially that of soya oil, palm oil, and gold, is over-invoiced, which is draining the accumulated foreign currency reserves.
- c) **Under-invoicing of cross-border exports:** Unofficial sources also indicate that cross-border exports of products, such as gold, soya oil, and palm oil are usually under-invoiced. Such a practice under-reports a actual foreign currency earnings from exports bypassing the official foreign currency reserves.
- d) **Rising fuel prices:** In first half of 2078 alone, Nepal imported Rs. 90.7046 billion worth of diesel and LPG. The constantly rising energy prices are globally putting extra pressure on foreign currency reserves.
- e) **Flourishing informal channels of remittance:** While the number of new approvals for foreign employment increased from 30,837 in

2077/78 to 167,513 in 2078/79, remittances fell from Rs. 495.47 billion in 2077/78 to Rs. 468.45 in 2078/79, which is very puzzling. Unofficial sources say that this anomaly is due to flourishing **Hundi** (unofficial channel of remittances) business, which is putting extra pressure on official foreign currency reserves.

3) Reasons for Ballooning Liquidity Crunch

- a) **Poor government spending:** In 2078/79, the government only spent 38.16%, 13.44%, and 26.12% of its regular, capital and fiscal budget respectively. Since government spending channels liquidity from the central bank (Nepal Rashtra Bank) to commercial banks, a poor performance of government spending is one of the sources of current liquidity crunch in the country.
- b) **Official under-valuation of land during registration:** Unofficial sources indicate that buyers of land withdraw money from banks in full amount of the actual value of land they purchase, but in conspiracy with government officials, the sellers undervalue the land to evade capital gain tax on one hand and the buyers undervalue it to save on the registration fees on the other hand. As such, the sellers don't deposit all their sales proceedings in banks causing a leakage in the liquidity in the banking system.
- c) **Unofficial cross-border trade:** A significant portion of cross-border imports is believed to occur through informal channels. While the payments for such imports are made through credits drawn from the nation's banking system, the proceedings from the sales of such imported goods, however, are not deposited in the banking system, causing another drain in liquidity.
- d) **Massive corruption:** Although there is a good number of honest people in Nepalese bureaucracy, politics, and judicial system, but it is also equally true that there is a massive corruption inside all three bodies of the government as well as nation's political system. While money involved in corruptions is withdrawn from the banking system, it doesn't come back into the system causing yet another drain in liquidity.

C. Solutions to Current Economic Woes of Nepal

- 1) Imposing quota on the import of luxury items
- 2) Raising customs duty on luxury items
- 3) Requiring 100% deposits at the opening of letters of credit on imports of luxury items.
- 4) Requiring foreign exporters to directly and electronically submit export invoice to Letter of Credit opening banks.
- 5) Providing electricity at subsidized rate and promoting the use of electric buses and passenger vehicles, thereby significantly cutting the import of fossil fuel
- 6) Leasing government lands at lowest possible rent to import-substituting and export-oriented industries, thereby creating comparative advantage for Nepalese products. It will boost exports and substitute imports thereby improving foreign currency reserves
- 7) Promoting the production of the products Nepal has comparative advantage on
- 8) Mobilizing Nepalese embassies around the world in the promotion of Nepalese products abroad through showcasing, business contacts, and advertisement
- 9) Completely restricting cross-border informal and illegal trade through strong law enforcement
- 10) Instituting high-interest savings schemes, subsidized pension schemes, minimum remittance fee, and home delivery of remittances to the families of Nepalese working abroad
- 11) Reforming current government procurement laws thereby boosting government spending performance
- 12) Reforming current land valuation system, using a scientific method to value the land, digitizing land records, and automating ownership transfer process, leaving no room for officials' personal discretion
- 13) Digitization of all official records and automation of all official processes thereby curtailing corruption
- 14) Making policy decisions open and transparent

Strategy to Control Air Pollution in Nepal

According to article 30 of Constitution of Nepal, each person shall have the right to live in a healthy and clean environment, and the victim of environmental pollution and degradation shall have the right to be compensated by the pollutant as provided for by law. We can only achieve this right by consistent, just, and timely enforcement when environmental laws are violated and by revising existing laws on timely manner with consideration of full public participation. According to the State of Global Air 2020 report, air pollution was the fourth leading risk factor for early death, and Nepal was among the top 10 countries with the highest outdoor fine particulate matter (PM_{2.5}) and ground level ozone in 2019.

Particulate matter is a mixture of small particles and liquid droplets. These can be made of acids, organic chemicals, metal, dust, and soil particles. These are divided into coarse particles (PM₁₀) and fine particles (PM_{2.5}). The 24-hr standard is 40 µg/m³ for PM_{2.5}, and 120 µg/m³ for PM₁₀. PM_{2.5} is of particular interest for public health because it can be deep inhaled to the lung and can cross to blood stream and to brain. It can cause various health problems such as irregular heartbeats, aggravated asthma, decreased lung function, increased respiratory symptoms, premature death in people with heart and lung diseases.

Ozone, also called smog is a gas that is formed in the atmosphere when three atoms of oxygen combine. There are two categories of ozone, stratospheric ozone (naturally found in the upper atmosphere) and ground-level ozone. Ground-level ozone is formed by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOCs) in the presence of sunlight. Emission from chemical solvents, motor vehicle exhausts, industrial facilities, power plants, and gasoline vapors are some of the major sources of NOx and VOCs. In addition to that, some biogenic VOCs can also contribute to the ground-level ozone. Elevated level of ground-level ozone can cause respiratory health effects in children and people with asthma. The 2012 8-hr ozone National Ambient Air Quality Standard (NAAQS) is 157 µg/m³ (80.1 ppb) for Nepal, which is higher than 2015 8-hr ozone of 70 ppb set by US EPA. The 2017-2021 US EPA's AirNow program data and monitor located at the US Embassy Kathmandu show PM_{2.5} concentration consistently exceeding 40 µg/m³ NAAQS set by Nepal government suggesting the Kathmandu Valley is in nonattainment of the PM_{2.5}. The data show PM_{2.5} concentrations consistently exceeding the unhealthy threshold in the months of November through May of each year.

To bring the area into attainment of 2012 PM_{2.5} standard, and to meet the NAAQS in the future, we need both short-term and long-term plans, but I will emphasize on long-term plan to control the air pollution. Here, I propose three different tasks for this purpose.

1). Promulgation of Clean Air Act Nepal to combat air pollution.

To bring the current nonattainment areas into attainment, and maintain the NAAQS, the government

should promulgate Clean Air Act of Nepal with establishment of one central environmental protection authority along with pollution control authority on each state including a separate authority for the Kathmandu Valley. The central authority shall be responsible for rule making, developing control strategies, and revision of NAAQS. The new act shall mandate the revision of current NAAQS with provision of periodic revisions. The new act shall also require all air pollution emitting entities to get authorization to emit air contaminants into the atmosphere (air permits), submit annual emission inventory for all sources, propose best available control technologies to abate and minimize the contaminants, and demonstrate that off-property impact is acceptable via air modeling for the pollutant of concern to meet NAAQS.

The control requirement should be lowest emission limitation that a particular source is capable of meeting, and must be operational, obtainable, and capable of reducing or eliminating emissions from the site and should be technically practical and economically reasonable for the facilities in Nepal. The emission reduction can be achieved through add-on control equipment, or by changes in production processes. Some of the controls for particulate matter can be good combustion practices, meeting opacity of 5% or less or no visible emissions for more than 30 seconds in 6-minute intervals, firing natural gas, use of bag filters, water spray, etc. Similarly, to control NOx emissions, it could be provision of using low or ultra-low NOx burners that meets the standards, use of catalytic converters, or NOx limit based on power of engines. Similarly, requirement of use of selective catalytic reactor (SCR) systems in boilers or big combustion devices that emits large amount of NOx could be another option.

The impacts modeling should consider all contaminants from the proposed facility and the acceptability of the impact evaluation shall be determined by comparing the model predicted emission concentrations to appropriate standards. If the model predicted concentration exceeds the standard, the site shall implement a higher level of emission control not to exceed any applicable standard.



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2). Establishment of Pollution Control Authority

The pollution control authority shall have five different sections with following purposes.

- a) Air Quality Planning: The purpose of this section should be protecting and restoring air quality by coordinating the development of plan for meeting NAAQS. The area not meeting NAAQS are known as non-attainment areas, and Kathmandu Valley is currently out of attainment for PM_{2.5} for its 2012 standard. It will involve complex air modeling to estimate future expected for planning purposes, and analysis of trends in air quality and meteorological data to help predict progress towards meeting NAAQS and evaluate potential pollution control strategies.
- b) Air Permitting: This section shall process air permits and authorizations for facilities that, when operational, will emit contaminant into atmosphere as required by new clean air act. The applicant should choose from best available control technologies, demonstrate compliance with all applicable rules and regulations, and demonstrate acceptable off-property impacts via modeling due to permitted emissions.
- c) Compliance Monitoring and Enforcement: This section shall be responsible for enforcing compliance with the environmental rules, regulations, and air permits under the provision of clean air act. This section shall have authority to draft enforcement orders and penalize if the entity is out of compliance under the new clean air act. The monitoring division shall maintain all the air monitoring stations that falls under their jurisdiction, collect, analyze, and display the data. This division shall be responsible for daily air quality forecasting for particulate matters and ground-level ozone and determining attainment with NAAQS.
- d) Emissions Assessment: This section shall be responsible for creating and maintaining database for air emission inventories for all types of pollution sources. It will help better understand air quality emissions data used for planning to meet attainment, modeling, tracking trends, and potential areas for placing air monitoring stations, and assessing potential emission reductions for air quality control strategies. All air polluting site shall submit annual air emission inventory as required in clean air act.

- e) Research and Development/Grants: This section shall administer grants for research and development of air quality studies, emission reduction plan program which includes funding for grants to reduce air pollutions. This will also provide technical and scientific support for the assessment of air quality by sponsoring scientific research related to air quality in the areas of atmospheric chemistry, meteorology, air quality modeling and data analysis.

3). Revision of current NAAQS

The NAAQS are set to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly from the effects of "criteria air pollutants" and certain non-criteria pollutants. NAAQS secondary standards are set to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

Do Nepal's ground-level 8-hr ozone standards of 80-parts-per-billion (ppb) limit, set in 2013 and PM_{2.5} standard of 40 µg/m³ with 24-hr averaging time need to be strengthened? I believe, it is a time that we do review for it, and the decision shall be based on scientific evidence. Although we are out of attainment of the 2012 PM_{2.5} standard, the current limit is too weak to adequately protect public health.

Ground-level ozone is linked to asthma in children and breathing problems for people with emphysema and other chronic respiratory diseases. Residents of Kathmandu Valley spend time outdoor because of the nature of work, commute, and other activities, and the grossly outdated standards for ozone and PM_{2.5} have resulted in most Kathmandu Valley residents to face unhealthy air quality.

In the U.S., under the Clean Air Act, EPA must review pollutant standards every five years to ensure that they account for the latest research into their health and environmental effects. Reviewing and revising standard is a lengthy process but it should be based on scientific evidence and shall involve scientific community and public regarding policy-relevant issues. The need for revision should be based on characterization of exposures and associated risk to human health or the environment associated with recent air quality conditions, but it should consider the topography of the Nepal as well.

We must take action to control the air pollution, and the proposed plan should be a good foundation to remove Nepal out of top 10 most polluted list of countries. Bringing Kathmandu valley under attainment of PM_{2.5} standard shall fulfill our constitution right to healthy and clean environment.

Protecting Dry Foods

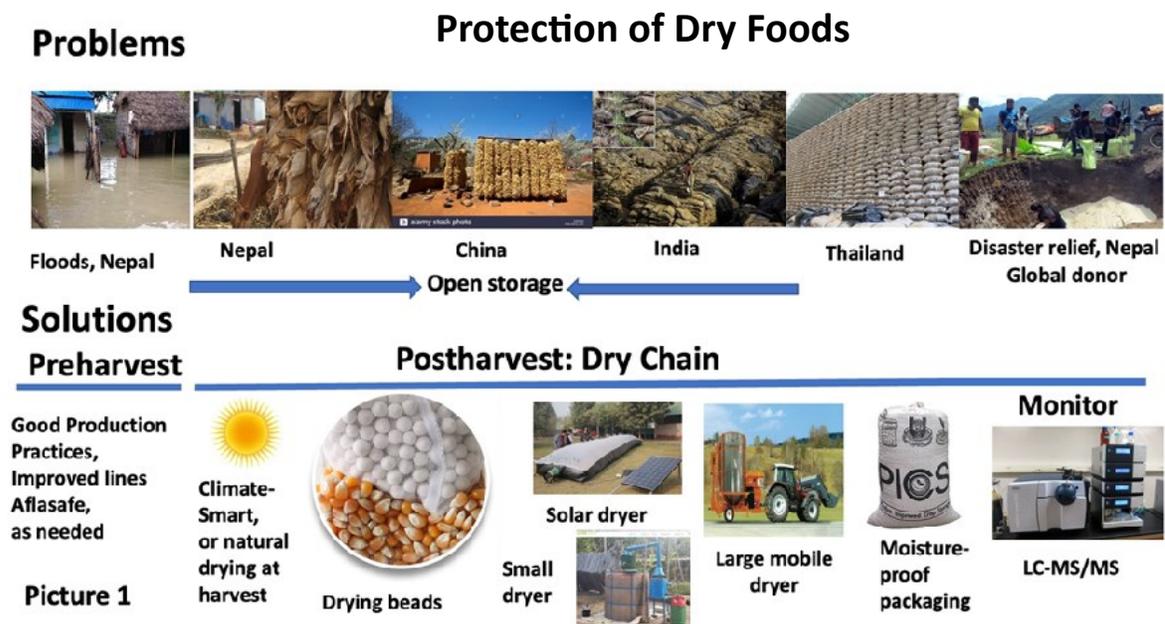
Dr. Durga D. Poudel, Dr. Sundar Tiwari, Dr. Meghnath Dhimal, Dr. Krishna Belbase, and Dr. Peetambar Dahal

Food security is a major issue especially in developing countries such as Nepal, where the use of a basic food science knowledge in food storage is lacking. Because of improper food storage techniques/practices, developing countries are facing several food-related problems including food loss, toxic foods, and dependence on donors for food help. Protecting foods and maintaining food quality during annual flood events or in disaster relief works have become a very challenging task for Governmental agencies in developing countries including donor agencies, which can be addressed by practicing post-harvest dry chain technologies (Picture 1).

In 2018, we highlighted that dry seeds and foods at farms must be protected from water using Dry Chain (Trend Food Sci Technol 2018, 71: 84-93), which is also used in pharmaceutical, processed food and seed industry. When dry seeds/foods get wet, insects and natural carcinogenic molds flourish and nutrients level decline. The toxins are transferred to milk and meat products through feeds and affect health of animals and humans (shared through AP1, Him-Shikhar, NAST, Krishi TV, and NTV in Nepal). Dry chain technology can enhance food security primarily

by minimizing storage losses thus reducing dependence on foreign foods and improving food quality locally.

Asta-Ja RDC and UNICEF did a small-scale demonstration on insect control in earthquake hit Karve (<https://doi:10.13052/spee1048-4236.39147>). Similarly, Sacramento Nepalese Lions Club demonstrated the protection of dry foods from floods in May 2019 in flood prone Saptari district by collaborating with Volunteer Corps Nepal, Nafseeds, and Ministry of Agri, Province 2, Nepal. These activities demonstrated that food losses from dry foods can be reduced substantially by bringing dry foods to “milling moisture content” at harvest and storing them in water-proof bags (Dry Chain), suggesting sun drying and moisture-proof packaging for the fall/winter/spring harvest and artificial drying and moisture-proof packaging for rainy season harvest in Nepal. In addition to Good Agricultural Practices, implementing a dry chain technology soon after crop harvest could reduce post-harvest losses, minimize natural toxins in food, protect dry foods from annual floods, and enable food and nutrition security in the country.



Supply Chain Management and Agri-Food Systems in Nepal:

A Discussion

Supply chain, in simplistic definition, can be defined as the sequence of steps or processes involved in production and distribution of goods, which often involves primary and support activities and services in each step. The management to facilitate the flow of goods and services passing through each of these process (supply chain activities) are referred as supply chain management. Both physical flow and information flow are the part of supply chain management. The supply chain management of food and agricultural systems (agri-food system), therefore, refer to the supply chain management applications on processes that facilitate the movement of food or agricultural commodities from a farm or producer to final consumers—all the way downstream and upstream chains from input suppliers for farms to final consumers. Several systematic sequential steps are involved in this supply chains of agri-food system. Like other systems, the agri-food system supply chains involve upstream supply chains with activities, costs and assets associated with purchasing fuel, energy, raw materials, as well as receiving, sorting, and disbursement of inputs, and inspection, inventory management, finance and capital arrangements. Then to operation step—converting inputs into agricultural commodity or food products and subsequently linking it to downstream supply chain activities such as, distribution, sales and marketing, and food services. These upstream and downstream portion of the supply chains facilitate the flow of goods/ materials, flow of money, and the flow of information.

The supply chain is also synonymously used as value chain or considered under a broad framework of value chain, when it specifically involves manufacturing or a series of intermediate activities, because the objective in each step would be to enhance or add some value keeping in view of the end target consumers. Even in simplistic linear supply chain, each actor that is connected through chain, to one step prior actor and to one step subsequent actor, should aim to capture the essence of what is its 'value proposition' and how it derives 'profit formula' in the process. For a sustainable functioning of supply chains or value chains, this is fundamentally important.

Value proposition—satisfying your buyer needs (needs of your actor next in your chain) at the price the actor will consider a good value for the commodity/goods. The greater the value provided (V) and lower the price charged (P), the more attractive the value proposition is to your next step actor. However, as a business actor in the process, every actor requires incentives, which in the most businesses should come in the form of profit. The profit formula should ensure this essence in every involved actor's business models. Profit formula—actor incurs cost structure that allows to earn acceptable profits, given price is tied to value proposition. The lower the costs (C) for a given value proposition (V-P), the greater the ability to earn business profit.

In a holistic approach of the system, theoretically, each individual actor's satisfactory business model (V-P-C) is essentially important to have a well-functioning efficient supply chain. Any discrepancies, any inefficiencies, disruptions, and lack of effectiveness of the supply chains pose the questions:

"Where are the obstructions or bottlenecks?"; "Where is the missing link?"; "Is the process of each actor efficient?"; "Are all links between actors effective?" When evaluating the agri-food systems, we should think on the premise of these questions. The purpose of this article is not to specifically discuss the success, failure, or limitations of supply chains of agri-food systems in Nepal—which would require a significant research and evaluations and is out of scope of this article. Instead, this article intends to provide some broad areas of consideration that can be looked at in supply chain management to facilitate research questions in agri-food systems in Nepal.

Agricultural commercialization and entrepreneurship

Commercial agriculture is different than subsistence agriculture. When we are thinking agriculture and agri-food systems to contribute to economic growth of the country, then significant business innovations are required—in areas of both product and process innovations. Sustainable competitive advantage requires economic benefits for each involved, and the economic benefits generated from the holistic system. This is generated through proper utilization of interdependency and value creation from each actor and components of the supply chain.

Connection to market, access to finance, infrastructure development

Once farmer or manufacturer produces, there should be a clear link to local, regional, or global market. Producers should have an access or plan to connect with single or multiple marketing channels. Agricultural commodities and produce are perishable—which demands for special infrastructure, handling, processing, storage facilities, depending on the crop or commodity. Money management and fund support for initial capital as well as operating capital is crucial to function these systems well.



Dr. Aditya R. Khanal
Assoc. Prof. of Agribusiness Management,
College of Agriculture, Tennessee State University,
Nashville, TN, USA

Linked supply chains and demand-driven products

Weaker coordination and governance of supply chains tend to disrupt or halt the flow in supply chains. Poor infrastructure for storage and processing and no clear market channels in Nepal intensify the likelihood of failure of food value chains. Specificity of agricultural commodities or food products would differ. For example, supply chains of fruits and vegetables vs. supply chains of commodity crop, or supply chains of animal protein have their specific features and management requirements demanding special attention. For the food product manufacturing firms, business models embracing demand-driven product development are proven to be successful in ensuring higher economic benefits. When flow of goods and information is well-linked, business management adequately understands consumer demand.

When it comes to new agri-food product, primary and support activities of the business in the chain should be well integrated and supportive. Businesses should target product differentiation vis-a-vis with consumer’s feedback and demand.

Individual value chains and value chain system

Specific to food product manufacturing businesses, primary and support activities should be geared towards creating customer value for the product under development and its consumer-demanded differentiation. In each step of value chain process, the intent would be to enhance or add value of the product for buyers. Each value chain of downstream and upstream actor should have comprehensive connection to ensure well-functioning holistic value chain system.



Figure 1: General primary and support activities in the value chain of a typical food product manufacturing business (Source: Thomson et al., 2020)

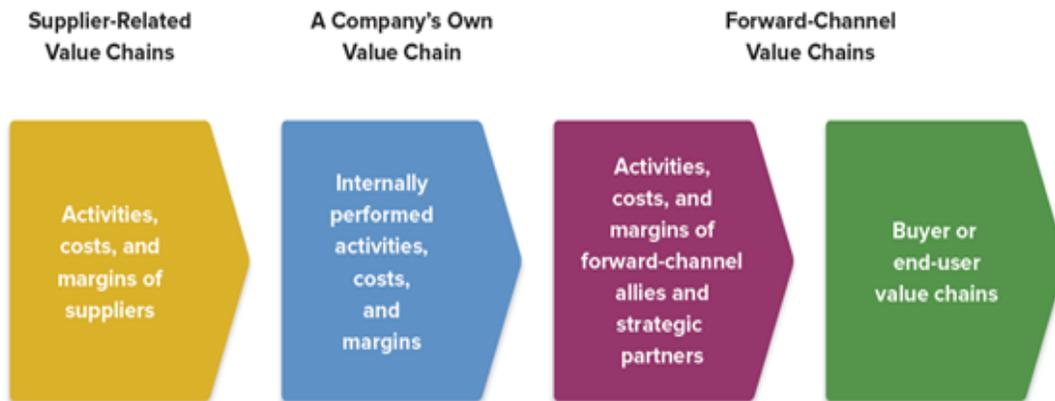


Figure 2: Main components of value chain system (Source: Thomson¹ et al., 2020)

Food regulations and verification mechanisms

Agricultural and food products are directly linked to diet, human nutrition, and health. Therefore, adequate information and truthful labelling are indispensable part of the advanced food and agricultural marketing systems. Proper government or government-affiliated regulations, certifications, assurance of standard, marketing claims verification are important to ensure food quality and adequate product information. Additionally, tests for contamination, disclosure of chemicals, tests of toxicity risks, proper handling and food safety are the best practices used in advanced food marketing systems. Adoption of these regulations and practices increases as a response to increased consumer consciousness towards these.

In advanced economies, the concept and application of block chain technologies to maintain transparency, traceability, and trust in agriculture and food supply chains have been a new emerging research. The implementation of these technologies in developing economies like Nepal is critically challenging as it requires a digitalized agriculture, sophisticated trackable production and distribution systems, and cooperation of each supply chain actors in the process.

Linear to circular supply chains in agri-food systems

Circular supply chain framework is relatively new concept

in the food business environment. The concept of circular supply chain has emerged as a new motivation to handle production in social- and environmental- friendly manner and reduce wastages in the process. Circular business models with principles of reduce, reuse, and recycle have been discussed and proposed as possible new efficient approach in agri-food supply chains (Kumar² et al. 2022). Note that traditional linear supply chains end on final consumption and then disposal. However, approaches of efficient production, distribution, and consumption (reduce wastages and losses in inputs, handling, and food consumed) as well as recycling, portrayed in circular models, ideally maintain circular chains.

¹Thomson A., Pateraf M., Gamble J., and Strickland A. J. 2020. *Crafting an Executing Strategy: The Quest for Competitive Advantage, Concepts and Cases*, 22nd edition. McGraw-Hill Education, NY.

² Kumar, A., Baskar, V. D. C., Malaiarasan, U., Misra, T., Dobriyal, M., & Kumar, A. (2022). Circular bioeconomy in agricultural food supply chain and value addition. In *Biomass, Biofuels, Biochemicals* (pp. 109-122). Elsevier.

**Asta-Ja USA would like to extend
warm wishes on auspicious
occasion of Nepali New Year
2079 B.S.**

Asta-Ja USA Family

Do you know?

Asta-Ja USA is a 501(C)(3) Public Charity

Internal Revenue Service (IRS) has determined that Asta-Ja USA is exempt from federal income tax under Internal Revenue Code section 501(c)(3). The 501(c)(3) status is valid from the date of February 28, 2018, date of registration of Asta-Ja USA. IRS determined Asta-Ja USA as public charity. With this status, donors can deduct contributions made to Asta-Ja USA. **To donate to Asta-Ja USA:**

Write a check and give it to one of our board members or mail it directly to 500 University Ave #1410, Honolulu, HI 96826 Or using your credit card or Paypal from our website at astajausa.org.

Asta-Ja USA is in Amazon Smile

Do you shop at Amazon.com? Asta-Ja USA is eligible to receive AmazonSmile donations. Amazon donates 0.5% of your purchase but you have to choose “Asta-Ja USA” as your charitable organization. To do this, 1) visit <https://smile.amazon.com/> 2) Sign in and Choose your Charity. To select us, find a search box that says pick your own charitable organization and simply search for “Asta-Ja” and select “Asta-Ja USA”.

Please note, you MUST always start at smile.amazon.com to support Asta-Ja USA. smile.amazon.com takes you to the same portal you use at the amazon.com.

US-Nepal Ag-Environ Nepali Diaspora Virtual Briefing

April 1 (Fri), 2022, 11:00-12:15 EST (US and Canada)

Prepared by Shyam Thapa, Durga D. Poudel, and Krishna Belbase (April 25, 2022)

I. Background

In recent decades, many Nepali diaspora have risen to the level of some of the best professionals in diverse fields, globally. For many reasons, the US remains a nation with most probably the highest concentration of such professionals. Thanks to the Nepali diaspora, many of the professionals are also contributing their time, efforts, knowledge, and skills to the well-being and prosperity of Nepali in Nepal.

In recognition of this relatively new and welcoming development, H.E. Ambassador Sridhar Khatri proposed to initiate a series in which the Nepali diaspora professionals, principally residing in the US, would be invited to share the highlights of their assistance to Nepal. It was hoped that such a forum might also provide some insight as to where and how the Nepali Embassy in the US could possibly provide strategic and catalytic support in the ongoing or planned programs and activities for Nepal.

The first in the briefing series focused on the agriculture-environment sector. This particular briefing session was led by Professor Durga Dutta Poudel. He made a 25-min presentation by focusing on three broad areas: the framework through which the support and assistance in the agriculture-environment sector is being channeled, ongoing and planned activities, and some of the ways in which the Embassy could facilitate. Following the brief presentation, there was a discussion session.

On behalf of H.E. Ambassador and the Embassy, the Embassy of Nepal extended invitation to select members representing the sector. Most of the participants were those already affiliated with the Asta-Ja organization. The session started 11 AM and (EST), April 15 (Fri), 2022 and closed at about noon.

II. Summary of the Presentation

Prof. Durga Dutta Poudel expressed his appreciation and gratitude to the Nepalese Embassy for providing the opportunity to interact and thanked the team of Asta-Ja expert affiliates who could attend the meeting. His presentation entitled "Strategic Interventions through Asta-Ja in Nepal's Agriculture-Environment" focused on three main areas: Asta-Ja framework for supporting Nepal, Key achievements including ongoing and planned interventions, and some ideas for catalytic support from the Nepalese Embassy/DC.

Prof. Poudel stressed that Asta-Ja is a theoretically grounded grassroots-based planning and management Framework for conservation, development, and utilization of natural and human resources. Asta-Ja means eight of the Nepali letter "Ja" [Ja (water), Jamin (land), Jungle (forest), Jadibuti (medicinal and aromatic plants), Janashakti (manpower), Janawar, (animals), Jarajuri (crop plants), and Jalabayu (climate)]. Asta -Ja promotes accelerated economic growth and socio-economic transformation of the nation. It is a scientific, holistic, systematic, self-reliant, and multidisciplinary Framework for the conservation, development, and utilization of Asta-Ja resources. The eight elements of the Asta-Ja system are very intricately linked and strongly connected. Hence, it is important to have sustainable conservation and development of each of the eight elements of Asta-Ja for better functioning of the entire system.

Asta-Ja Framework emphasizes the formulation of appropriate policies and programs for the best governance of Janashakti (manpower) and natural resources that include other seven Jas (i.e., Jal, Jamin, Jungle, Jadibuti, Janawar, Jarajuri and Jalabayu) for their sustainable conservation, development and utilization leading to accelerated economic growth and fast-paced socio-economic transformation of Nepal. As human resources development does not occur overnight, it is important to plan for it ahead of time considering current and future needs of the country. Prof. Poudel alluded that Asta-Ja's guiding principles included volunteerism, political neutrality and non-affiliation, inclusiveness, and comprehensiveness.

Asta-Ja organizations are developed over the years both inside and outside the country. Asta-Ja USA is a 501c(3) nonprofit nongovernmental organization registered in Hawaii, USA while Asta-Ja Research and Development Center (Asta-Ja RDC) is a nonprofit nongovernmental organization registered in Kathmandu, Nepal. Asta-Ja International Coordination Council (Asta-Ja ICC) includes an assembly of Asta-Ja affiliates and acts as a coordinating unit of various Asta-Ja related activities from Nepali diaspora worldwide. The 92-member Asta-Ja ICC platform includes highly accomplished scientists, academicians, businessmen, medical doctors, engineers, computer scientists, graduate students, administrators, IT professionals, service providers, researchers, and other professionals. Additional organizations operating in Nepal include Asta-Ja Abhiyan Nepal, Asta-Ja Cooperative, and Asta-Ja Vyas Bhumi Nepal.

Asta-Ja organizations are engaged very actively on various activities including agricultural and environmental research and development, community outreach, natural resource studies, relief works, and community development in Nepal. Some of the activities that Professor Poudel highlighted include Climate Change Adaptation project funded by USAID; UNICEF funded Rebuilding National food security; Organic Vegetable production in Tanahu funded by GreaterGood, 40,000 hermetic bags to earthquake victims by GreaterGood; Drinking water project, Tanahu, by Rotary International; Environmental community awareness community seminars supported by NRNA; Global Education and landslide study; Supporting underprivileged school children; and Basic education improvement project in Tanahu supported by Rotary International.

A key achievement of Asta-Ja has been learning over the years. Professor Poudel stressed that the commercialization of smallholder mixed-farming system is critical for food self-sufficiency in Nepal. He emphasized that the decades of negligence from the government in research and development of smallholder mixed-farming system has resulted in the current agricultural devastation in Nepal. Asta-Ja has been actively engaged in community outreach through its regular publications of newsletters, policy briefs, online articles, and occasional book series.

Prof. Poudel presented three areas of possible catalytic support by Nepali Embassy in DC: 1) Women empowerment and enterprise development (nationwide network of community labs), 2) Nationwide environmental sustainability community awareness seminar series, 3) Collaborative research and development projects, e.g., National science foundation PIRE proposals. He concluded his presentation by stressing the high potential of Asta-Ja for knowledge and technology exchange for agricultural and environmental development in Nepal. If well mobilized the expertise of diaspora could be used for many transformative actions in policy, system development, research and grassroots development.

III. Comments, Queries and Suggestions

H.E. Ambassador Sridhar Khatri

Ambassador Sridhar Khatri thanked Prof. Poudel for his comprehensive overview and commended Asta-Ja team for their contributions. He mentioned that the Nepalese Embassy/DC had initiated a process of engaging with vari-

ous organizations, and support groups towards which this meeting is a major step. Ambassador Khatri said that Nepali diaspora professionals remain a 'national asset' regardless of which country they may reside in.

Ambassador Khatri said that the Nepalese embassy appreciates the impressive mission and achievements of Asta-Ja and he and his team are ready to support the three areas identified as they relate to the need of the country. Ambassador Khatri mentioned that the Embassy will need specific details with respect to what type of catalytic support it can provide. What are the specific initiatives and supports that the Embassy should provide, involving which government or non-governmental institution? The Embassy would be prepared to write to concerned government ministries and institutions. Ambassador Khatri gave assurance that the Embassy would be willing to coordinate/facilitate the support of government, private sectors, foundations and NGOs. He mentioned that a focal point within the Embassy had already been identified for such role.

Furthermore, he suggested and asked that it would be useful to develop a concept paper for the collaboration highlighting clear targets to be achieved, support needed and time frame involved. There will also be a need to develop a common understanding of roles and responsibilities as part of the collaboration arrangement and to maintain systematic record for coordination and periodic review of progress. He also mentioned that on the areas identified by Asta-Ja, particularly on agriculture and food security, the US government has made major commitments for Nepal and the role of Asta-Ja could be explored.

Ambika P. Adhikari (DDes, Urban & Regional Planning)

Asta-Ja brings together dozens of diasporas and Nepal-based experts in the fields related to agriculture, environment, forestry, planning, economics, geology, engineering, climate change and many related topics. Asta-Ja's International Coordination Council (ICC) includes hundreds of subject matter experts from all over the world who have committed to further the goals and purpose of Asta-Ja. As Nepal aspires to modernize its economy, infrastructure and agricultural practices, Asta-Ja can play an important supporting role to help the Nepali government, academic institutions, professional associations, non-profit organizations, and civil society in these tasks. For immediate connection and partnership, besides NAST, universities and other academic institutions can gainfully partner with Asta-Ja to advance common agendas. The Nepali embassy can be an excellent conduit to facilitate such partnerships.

Peetambar Dahal (PhD, Plant Sciences)

Annual rainfall/floods damage dry products (seed/food/feeds) stored in traditional porous containers more severely in low lying areas, affecting quality, food security, disaster resiliency, and trade ratios. Dry Chain intervention used in dry pharmaceutical, processed food and seed industry needs implementation at harvest at farms to protect from rainfall/floods, infestations by insects and toxigenic molds. Carcinogenic toxins in contaminated dry products are passed onto animal protein products and complicate malnutrition alleviation and health improving efforts. A mini-program demonstrated at Kavre through UNICEF-Asta-Ja needs scaling out in annual govt programs.

Nar K. Gurung (PhD, Animal Science)

Nepal is a major importer of agricultural products mainly from India. India exported over 50-billion-dollars' worth of agricultural products in 2022 with Nepal being among the top 10 importers. Agricultural and Processed Food Products Export Development Authority (APEDA) of India has identified a product matrix for 50 agricultural products having export potential. Nepal agricultural policy should work on constraints of India's export/trade policies to minimize trade deficits. Also, the Indian agricultural sector is highly protected via domestic tariffs which makes Nepalese product expensive and raises the issue of competitiveness in price. The US based Nepalese agricultural community in diaspora should focus in addressing these critical issues faced by Nepal and develop mitigating strategies and/or plans.

Durga D. Poudel (PhD, Soil and Environmental Scientist)

Asta-Ja strives for collaborative works. Therefore, it is important to develop a network of research and development institutions, government agencies, academia, non-profit, and other stakeholders both inside and outside the country. Collaborative initiatives benefit from resource sharing, check on program duplication, and the better availability of research and development funds. NAST could be a potential institution for partnership.

Rupak Rauniar (PhD, Supply Chain and Logistics Management)

(1) Nepalese Embassy in the US can help us in

sharing Asta-Ja's current projects and future proposals with others, both in the US and abroad. (2) Invitations to attend future Asta-Ja online events can be extended to relevant leaders residing outside the US.

Murari Suvedi (PhD, Agricultural and Extension Education)

Nepal Embassy's initiative is highly appreciated. Currently there are some opportunities to collaborate with Nepal Government and Nepalese institutions (e.g., Kathmandu University, Gandaki University) in areas of poverty reduction, food security, and improved nutrition. At the same time, opportunities exist for bidding on USAID supported projects. Some of the examples include, USAID/ASHA project in health and "Business Forecast" in the area of agricultural transformation. The Nepali diaspora could work together to contribute to securing grants to improve food, nutrition, education and health for the people of Nepal. The Embassy could play a significant role in coordinating some of these activities.

Krishna Belbase (PhD, Nutrition and Policy)

It would be useful to formalize the collaboration between Asta-Ja and Nepalese Embassy in the form a strategy document with 3-year action plan with key milestones which would be monitored and reviewed periodically. Documenting progress and success from this collaboration would serve as an example for other such organizations within Nepal and outside.

Shyam Thapa (PhD, Public Health, Research & Evaluation)

Dr. Thapa noted that the Nepali diaspora professionals remain an emerging strong 'invisible force' in Nepal's development. He further noted that it is most probably the first time that the Embassy of Nepal/DC has taken the initiative to engage various groups in sharing how they have been engaged in assisting in Nepal's development and prosperity in various sectors (the first one in the series being the agriculture-environment sector). He underscored and appreciated the vision and leadership particularly of His Excellency Kharti. Dr. Thapa noted that the event, the first in the series, has been a milestone.

IV. Concluding Remarks by H.E. Ambassador Khatri

In his concluding remarks, Ambassador Khatri extended his appreciation for this timely initiative by Asta-Ja and reiterated his commitment for fruitful collaboration. He mentioned that you (Asta-Ja) have a great potential and you are a great national asset for our country. “We will identify right people in the Government and help get in touch with you based on concrete proposals received. Our strength is we are in DC and in touch with you. We can be best facilitators, but we don’t have resources to provide direct support. Don’t expect resources from Nepalese government but you can certainly build institutional and expert connection and there is considerable potential to solicit funding support from USAID and other funding organizations, and new opportunities to collaborate.” He reiterated the need to identify specific ideas and modalities through which the Embassy could provide support. He acknowledged that Nepal embassy may not have the history of engaging with organization like Asta-Ja but that can change. The Embassy could also facilitate contacts with the US Embassy in Nepal and help identify possible areas of collaboration. Such facilitation, he said is both an obligation and function of the Embassy staff. “You are

helping Nepal’s development and it is our obligation and duty to support your efforts,” he remarked.

V. Going Forward

Prof. Poudel will identify small groups to work in specific areas and develop concept notes for sharing with the Embassy and identifying the next steps. In the meantime, the participants could also suggest specific themes and also identify colleagues to work on the concept note/s.

Prof. Poudel will then share the concept notes with the Embassy for further dialogues and follow ups.

A summary of the briefing will be prepared and shared with the Embassy and all the participants.

Today’s session has been recorded and it will be available by requesting Prof. Poudel.

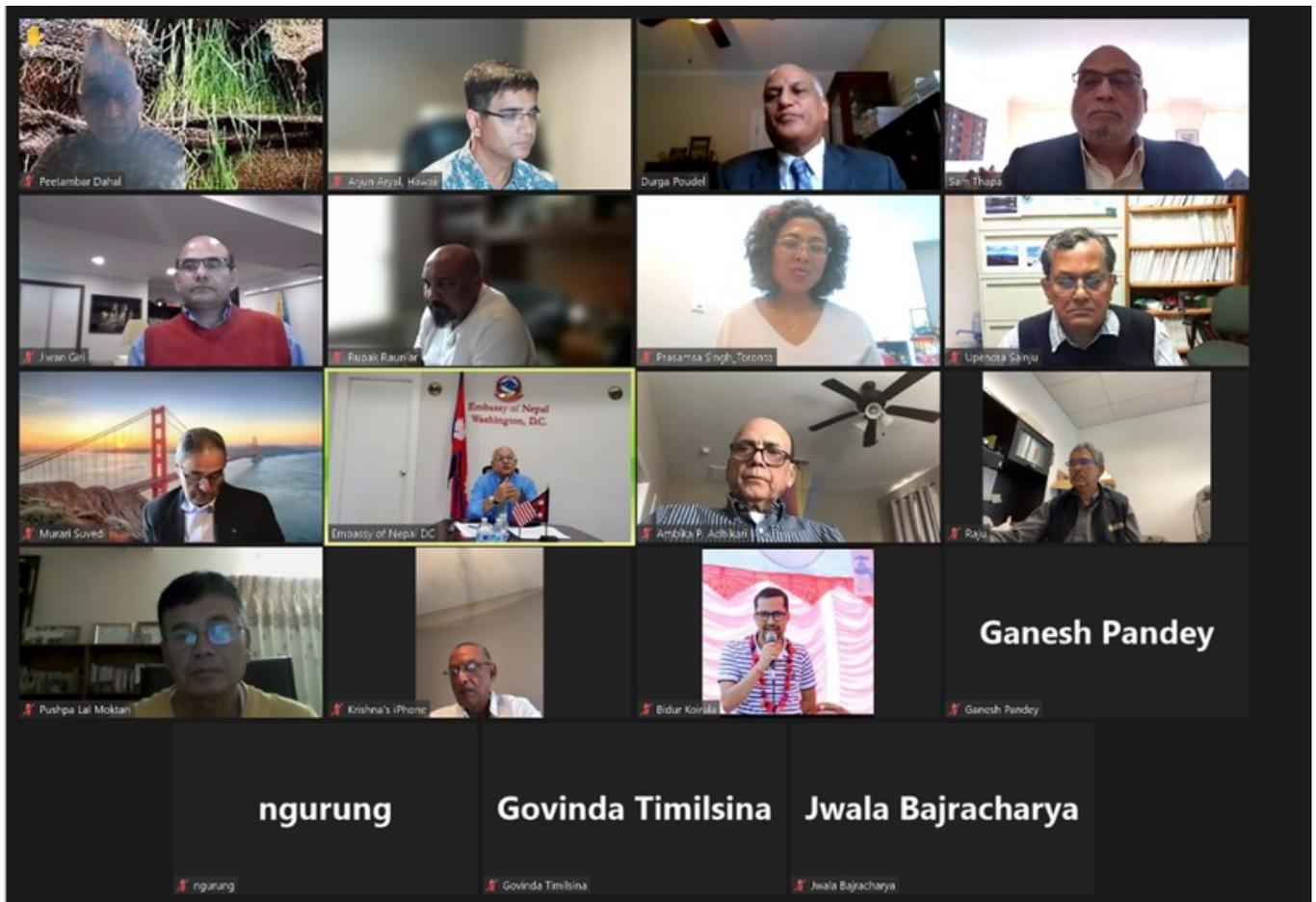


Photo credit: Arjun Aryal, PhD

Schoolchildren Receive Uniforms and Supplies

Shree Padma Elementary School, Chunder, Tanahu

On January 15, 2022, with the presence of parents, Asta-Ja volunteers, local community members and School Board members, Hon. Mayor Mr. Baikuntha Neupane, Vyas Municipality Tanahu, Nepal, Dr. Durga Poudel handed over school supplies including uniforms to 33 students in Shree Padma



Elementary School, Chunder, Tanahu, Nepal. On behalf of the schoolchildren, parents, and local communities, Mayor Neupane thanked Education International Foundation, Hawaii, for providing funding support and hoped that such supports will continue from the Foundation in the future. Mr. Amber Bahadur Rakhali, Chairman of the School Board, also thanked EIF for this continued support. He said that because of this initiative student enrollment is increasing in this school. Schoolchildren, parents, schoolteachers, and community members were very happy and were grateful to the Foundation for the support. As compared to last year, 7 more students received the school supplies this year. This increased enrollment was clearly due the positive impact of last year's supplies. One of the schoolteachers, Ms. Sanju Pandit, in her own words "Parents say that they do not like to send their children to other areas now". Based on the observation from past year, children are utilizing the writing materials the most. They have no shortage of writing materials, therefore, their learning has become more effective, one of the school teachers said. Since many students come from so called "lower caste" (i.e. dalits) and marginalized ethnic communities who are struggling against social discrimination, poverty and various inequalities including education and health, this project was clearly for those who needed the most.

Setidevi Adharvut Vidhayalya, Matatirtha, Kathmandu

On September 25, 2021, with the financial support from Edu-

cation International Foundation (EIF), Hawaii, USA, the Asta-Ja RDC team and volunteers distributed school uniforms and other stationery items to schoolchildren of Setidevi Adharvut Vidhayalya in Matatirtha, Kathmandu, Nepal. This event was coordinated by Mr. Bidur Koirala and members Chandra Singh, Ms. Rita Purkoti, Dr. Rasik Neupane, and Mrs. Pratibha Pandit from Asta-Ja RDC.



Asta-Ja Related News

Students, parents, teachers, and local community members attended the event. Mrs. Lisha Nakarmi, the Deputy Mayor of Chandragiri Municipality, Kathmandu, was the Chief Guest in the program. Similarly, Mr. Ganesh Chandra Koirala, a Police Officer from Balambu Police Office, Dr. Ramji Prasad Neupane, a social worker in the community, and Mr. Udhav Raj Bhandari, the Principal of Shree Setidevi Adharvut Vidyalaya, were the honored guests of the event. Dr. Durga D. Poudel, the president of Asta-Ja USA, also participated via Zoom. The program was divided into three stages. The first stage was the formal program where all guests were welcomed and requested to give a speech about the event. The headmaster of the school gave a wonderful welcome speech appreciating EIF, Asta-Ja, and all involved in this project. Dr. Ramji Neupane gave a very inspiring and informative speech on the objective of the Asta-Ja and thanked EIF for funding. Dr. Durga Dutta Poudel significantly shared the motive of the project highlighting the empowerment of schoolchildren, developing confidence on them, and motivating them for hard work and excellence on education through the noble efforts of EIF by providing funding support for school uniforms and much needed stationary materials in those schools where the need is the most. Mrs. Lisha Nakarmi, the Deputy Mayor, highly appre-

ciated the funding support of EIF and the activities of Asta-Ja on this noble cause. Highlighting the activities of Asta-Ja, Mr. Bidur Koirala ended the first stage of the program. Mrs. Lisha Nakarmi and Dr. Ramji Neupane handed the packets to 35 students. Each packet included a set of school uniforms, a tracksuit, a sweater, a woolen cap, a pair of socks & shoes, a school bag, a ball pen, a pencil, an eraser, and a pencil sharpener. Students and their parents were delighted and promised that they will make the best uses of the school items that their children have received. Asta-Ja RDC provided a cup of tea and biscuits to the participants. Appreciating and acknowledging the support of Asta-Ja USA and Asta-Ja RDC, and EIF for funding and all those involved in the event, Mr. Bidur Koirala, the coordinator of the event, delivered the closing remarks. He expressed special thanks to active volunteers, Mr. Avinash Upadhaya, Mr. Sanjaya Baral, Ms Namita Koirala, Dr. Sudip KC, Dr. Prabina Basnet, Mr. Shalikram Ghimire, Mr. Binod Koirala, and Mr. Badri Bhandari for their valuable contribution to make the event a grand success. The school environment was very delightful, and the schoolchildren were very happy wearing their school uniforms.





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