

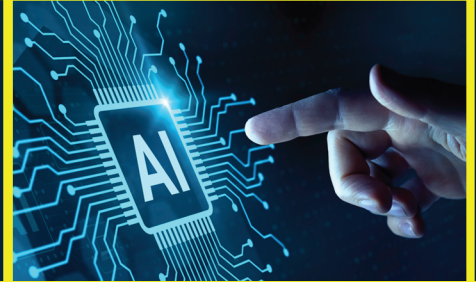
1 Koukha:
"Weeds to Wealth"

14 Welfares Scheme, Incentive
and Insurance for Workers

মহাশিল্পীৰ সন্মান

MANIPUR TODAY

May 2025 | Volume XV | Issue 7



KOUKHA : "Weeds to Wealth"



31 Watermelon Warriors: How 11 Students
Grew a Movement at Manipur University

37 City Farming and Space Utilization:
Key to Resilient Urban Development

40 KEDO – Birds Eye view

48 Why Human Intelligence Still
Matters in the Age of AI

DIRECTORATE OF INFORMATION & PUBLIC RELATIONS
MANIPUR



মণিপুরে
**MANIPUR
TODAY**

KOUKHA: “Weeds to Wealth”

May, 2025

**Directorate of Information & Public Relations
Manipur**

From the Chief Editor



Celebrating the Power of Work, Innovation and Resilience

As we step into the vibrant month of May, observed across the globe as a tribute to the dignity of labour, *Manipur Today* dedicates this edition to the spirit of hard work, resilience and innovation that defines our people—especially the youth of our state.

In this issue, we bring you the inspiring stories of young men and women from Manipur who have turned struggle into strength, challenges into opportunities and hard work into success. From small entrepreneurs to grassroots innovators, their journeys prove that dreams need not wait for ideal circumstances—they only need vision, courage, action and persistence. Their efforts not only uplift their families but contribute meaningfully to our society and economy.

Equally important is the recognition of every form of work. Dignity of labour remains a core principle of a just and progressive society. As we honour the contributions of workers across all sectors, we also explore laws, rights and government schemes designed to support them. It is time we ensure every worker knows their worth and every citizen respects the hands that build our collective future.

In this spirit, we highlight a remarkable story from our very soil—a farmer who turned *Koukba*, a weed once seen as a menace in paddy fields, into a sustainable source of income, thereby setting a perfect example of “*Weeds to Wealth*”. Through innovation and determination, he has not only found a new way to prosper but also set an example of how traditional knowledge and creativity can lead to new opportunities.

Lastly, we peer into the future with a special feature on Artificial Intelligence. As AI reshapes the global workforce, what does it mean for the youth of Manipur? How can we harness its potential while preserving our unique skills and livelihoods? We begin the conversation here.

May this issue be a tribute to those who toil, innovate, inspire and prosper. Let it remind us all that success is not defined by status, but by spirit.



Ngangom Uttam Singh
Director, IPR

Published by Directorate of Information & Public Relations, Manipur

Chief Editor

Ngangom Uttam Singh, MCS

Director, IPR

Senior Editor

T. Ramesh Singh, Joint Director (Press/Publication)

Manager of Publication

Yanglem Geeta Devi

Editorial

W. Phajatombi Devi, MCS, Addl. Director

L. Ashok Kumar Singh Joint Director (PR)

Oinam Shyamo Singh, Translator

Oinam Sanatombi Devi, Translator

Wangkheirakpam Panorama Devi, Announcer

Athoibee Kakchingtabam, Journalist

Design

Banabanta Ngangom, DEO

Kangabam Rakesh Singh, DEO

Photographs

DIPR Photo Section

May, 2025

Disclaimer: The views expressed in the articles are the personal opinions of the contributors and are in no sense official, nor is the Directorate of Information & Public Relations, Government of Manipur responsible for them.

No. of Copies: 1500/-

Printed at

Samadon Printers

Content

1.	Reviving Koukha with a new cultivation pattern in Manipur: A success story	01
2.	“Legal Safeguard for Workers in Manipur: A Case Study on Wage, Incentives, and Insurance Protections”	03
3.	Tracing the Martial traditions of Manipur and their Contribution to India,s Nation Building	09
4.	Welfares Scheme, Incentive and Insurance for Workers	14
5.	Mahila Pradhan Kshetriya Bachat Yojana Women Agents: Ambassadors of National Saving Schemes and Epitomes of Self-Reliance	18
6.	Propelling self-reliant labour-intensive organic millet farming system in Manipur hills	21
7.	Geographic Distribution and Spread of HIV/AIDS in Manipur	24
8.	Life in DIPR	27
9.	“Persistence yields greater success.” From Rs. 2000 Investment to Earning Rs. 4–5 Lakhs a Year - The Story of Surendrajit	29
10.	Watermelon Warriors: How 11 Students Grew a Movement at Manipur University	31
11.	City Farming and Space Utilization: Key to Resilient Urban Development	37
12.	KEDO – Birds eye View	40
13.	Working with Dignity: A Perspective on Manipur’s Workforce	42
14.	From Struggles to Success: The Inspiring Journey of Ningombam Ibem	46
15.	Why Human Intelligence Still Matters in the Age of AI	48
16.	Burning metal particles: the source for next generation green energy	51

Reviving Koukha with a new cultivation pattern in Manipur: A success story

Ksb Chitrabhanu Devi

'All my efforts to plant paddy was in vain because of the prolonged water logging in my field. I was waiting for several days to plant my paddy but it was not possible at all to do so. When the water level receded, I saw many Koukha plants growing up plenty in my field'



narrated by Ngangom Rajen (65yrs), a farmer of Nungsum of Imphal East, Manipur who have been cultivating Koukha for the last 20 years. Suddenly a seed of hope budded in his mind to cultivate Koukha. Starting from that particular year till now he started cultivating Koukha in his field instead of cultivating paddy, he expressed. He could earned fifteen thousand rupees (Rs.15000) at the ever first year. That added him to expand and put more efforts in planting more Koukha plants in his field. Before that he had already conceived the idea of planting Koukha. Considering paddy as one of the most important crop he did not attempt to plant Koukha in his field.

Mr Rajen who is a successful farmer in planting Koukha said that plantation starts from the month of June-July and harvesting from the month of October-November. In one Sangam of area he could make a minimum profit of one lakh rupee (Rs. 100000) easily in a year. But

for this year with more rainfall and frequent floods, the product seems to be smaller and less productive making less profit unlike previous years. Explaining the reason for the shift of cultivating, he told that planting paddy is more expensive with low productive. But planting Koukha could make multiple profit for farmers in the state. He shared his experiences and knowledge to other farmers who are interested in planting Koukha. Now, he started supplying saplings to many farmers. For this season he could sell the saplings for four lakh rupees with a profit of two lakh and fifty thousand rupees.

Koukha or Arrow head is botanically known as *Sagittarie sagittifolia*. It belongs to the family Alismataceae (Monocotyledonous). It is an aquatic perennial with wintering tubers. It is native to Europe and Asia commonly found in shallow waters, marshes and ponds. It is widely grown in the valley areas of Manipur particularly in wetlands and paddy field. It is used and consumed for its traditional medicine properties. Koukha is consumed in Manipur in boiled or roasted, curry with other local ingredients or as bora (pakora) etc.

Talking to IRAP, another farmer Heikham Ngouba of Yumnam Khunou Awang Leikai, Imphal East expressed that he started planting Koukha since 2024 in his one sangam area for the first time. He bought the saplings from Nungsum and Sinam Kom at the rate of one rupee per sapling spending around Rs.23000 (Rupees twenty thousand). Till January 2025 he could harvest more than 300 kilograms of Koukha and many more to harvest. He estimated that around 1000 kilograms could be harvested for this season. In his one Sangam of

area he could harvest maximum of (27 to 28) bags of paddy a year of an amount of around thirty thousand rupees. And moreover it is hard to make profit in planting paddy as it is more expensive and labourous. He is expected to earn an amount of Rs 80,000 by selling at Rs 80 per kilogram. With less efforts and more profit, Ngouba preferred Koukha than paddy. He had stopped planting paddy in his field. By this new practice of agriculture it offers part time employment to some people by giving 50 rupees per kilogram of harvest. For the next season, he will put more efforts and consult with experts to make more profit, he added.

Kharibam Rajen Meetei(61 years) another farmer from Ishikha Mayai Leikai, Imphal East who has the experienced of planting Koukha for the last (5-6) years asserted that planting Koukha in one Sangam of area could make a profit of around two lakhs rupees. It is very hard even to make a profit of 30 thousand rupees in planting paddy. After harvesting the paddy he planted potatoes in his farm for last many years. But he could not make a maximum profit as his field endured frequent floods destroying the potatoes plant. And moreover the decreasing fertility of soil could not yield good quality of paddy and other crops. With this change in soil fertility Rajen found his field more suitable for planting Koukha with a maximum profit.

In recent years, Manipur has witnessed a gradual shift from traditional paddy to Koukha. This transition is influenced by multiple factors including climate change, water scarcity, soil degradation and economic viability. In this regard, Prof. A Nabachandra, Head Department of Agronomy, College of Agriculture, Central Agricultural University, (CAU) Imphal said that because of climate change the intensity of rainfall is very high and disturbance of rainfall pattern causing flash floods. With the high intensity of rainfall at a particular period of time the low lying areas faces flash floods frequently which is not favorable for growing paddy plants. This situation makes the farmers repeat their plantation many times. Such situation hardly occurred in the past in the state. Even in the last year farmers of the state experiences more

than three floods in their paddy field which compelled them to repeat their crops with a big lost. In such submergence conditions plant such as Koukha can grow well, he added.

Mentioning about the shift in the agricultural practices in the state Professor Nabachandra said that with the decreasing in the depth of the wetland particularly in Loktakm lake the water holding capacity decreases thus spreading the water to its peripheries which is again not favorable for growing paddy. In such condition, Koukha can be a substitute plant for the farmers. Farmers can cultivate Koukha in this places as it can tolerate the water level unlike paddy. Moreover there are reports that Koukha has the property of fixing nitrogen like other leguminous plant which support in increasing the fertility of the soil.

With the change in the rainfall pattern due to climate change farmers could not make a profit with the paddy plantation. But for states like Punjab and Haryana with full irrigated conditions farmers do not face problems as farmers of the state. There is a specific period for planting paddy plants. As the state is a rain fate state farmers have to wait for the rainfall for all the activities related with plantation paddy plants. With the late planting of any plants including paddy, the productivity rate also lower down. This is one such factors that the farmers faced frequently every year in the state, he mentioned. As paddy is more labour and hardship intensive crop and with the increase in the labour cost and with less profit, farmers have shift the crop with high value such as Koukha. One advantage of Koukha unlike paddy is it can be harvested phase wise for many months. It can be harvested from December to March. It may be calculated that the profit of planting Koukha is triple times that of paddy plants. This is one of the advantage of Koukha. He suggested farmers to follow more scientific techniques of cultivating Koukha for more sustainable farming in the state. The shift from paddy to Koukha in Manipur is a response to environmental challenges and economic opportunities. It can contribute to a more resilient and sustainable agricultural system in the state.

“Legal Safeguard for Workers in Manipur: A Case Study on Wage, Incentives, and Insurance Protections”

*Dr. S. James, MA, MBA, LL.M, PhD, LL.D
Advocate, High Court of Manipur, Imphal.
Email: drjames835@gmail.com*

Abstract

This study explores the legal safeguards available to workers in Manipur, focusing specifically on protections related to wages, incentives, and insurance. Manipur, with its diverse workforce spanning agricultural, industrial, and informal sectors, faces unique challenges in ensuring fair labour practices. Through an in-depth case study approach, this research examines existing labour laws, their implementation, and effectiveness in securing timely wage payments, fair incentive structures, and adequate social insurance coverage for workers. The study identifies gaps between legal provisions and ground realities, highlighting issues such as wage delays, lack of awareness about entitlements, and limited access to insurance schemes. Recommendations are proposed to strengthen legislative enforcement, improve worker awareness, and enhance institutional support mechanisms, thereby fostering a more secure and equitable working environment for workers in Manipur. Through a detailed analysis of legal provisions, employer compliance, and the effectiveness of these measures, the study aims to highlight gaps in implementation and suggest improvements for enhanced worker security. The findings underscore the need for stronger enforcement mechanisms, better awareness among workers, and collaborative efforts between government agencies and businesses to ensure equitable labour rights. This research serves as a foundation for policy recommendations to create a more robust and just labour environment in Manipur. The Manipur government plays a crucial role in ensuring fair wages, incentives, and insurance protections for workers under various legal provisions. Additionally, the study discusses the role of recent legal notifications, including the Manipur Official Gazette Notification dated 16 October 2024, in reinforcing labour protections.

Keywords: Legal Safeguards, Wages, Incentives, Insurance, Protections, Policies, Rights.

1. Introduction

Labor rights and protections are fundamental to ensuring economic stability and social justice. In Manipur, workers across various sectors face challenges related to wage security, incentives, and insurance coverage. This paper examines the legal framework governing these aspects and evaluates the effectiveness of government policies in safeguarding workers' rights. Workers' rights and legal protections play a crucial role in ensuring fair wages, incentives, and insurance coverage. In Manipur, the diverse workforce—ranging from agricultural labourers to industrial employees - faces challenges in wage security and social benefits. This study examines the legal frameworks, government policies, and enforcement mechanisms aimed at safeguarding workers. It also highlights gaps between legal provisions and real-world implementation, proposing solutions to enhance labour rights and economic stability.

2. Legal Framework for Wage Protection

Wage protection in Manipur is governed by national and state labour laws, ensuring fair and timely compensation for workers. Key legislations include the Minimum Wage Act, 1948, which mandates minimum pay standards, and the Payment of Wages Act, 1936, which ensures timely wage disbursement and prevents unauthorized deductions. Additionally, government schemes like MGNREGA provide wage security for rural workers. Despite these safeguards, challenges such as enforcement gaps, wage delays, and non-compliance in informal sectors persist, necessitating stronger oversight and worker awareness initiatives.

Minimum Wage Act, 1948

The Minimum Wage Act ensures that workers receive fair compensation for their labor. The Manipur government periodically revises minimum wage rates to reflect economic conditions and inflation.

Payment of Wages Act, 1936

This act mandates timely wage payments and

prohibits unauthorized deductions. However, enforcement remains a challenge, particularly in informal sectors.

3. Challenges in Wage Implementation

Wage implementation in Manipur faces several challenges, particularly in sectors with informal employment and rural labour. Here are some key issues:

1. Compliance with Minimum Wage Laws

Despite legal provisions, many employers fail to adhere to minimum wage regulations, especially in unorganized sectors like agriculture and small-scale industries.

2. Wage Delays and Irregular Payments

Workers often experience delays in wage payments, particularly in government-backed employment schemes such as MGNREGA. This affects their financial stability and trust in labour policies.

3. Lack of Awareness Among Workers

Many workers, especially in rural areas, are unaware of their legal rights regarding wages, incentives, and insurance protections. This leads to exploitation and underpayment.

4. Weak Enforcement Mechanisms

Labor law enforcement in Manipur is hindered by inadequate inspections and monitoring systems. Employers in remote areas often evade compliance due to limited oversight.

5. Challenges in Government Employment Schemes

Programs like the National Rural Employment Guarantee Act (NREGA) aim to provide wage security, but implementation issues such as fund mismanagement and bureaucratic delays reduce their effectiveness.

6. Informal Sector Vulnerabilities

A significant portion of Manipur's workforce is engaged in informal employment, where wage protections are minimal and legal enforcement is weak.

7. Limited Access to Social Security Benefits

Workers often struggle to access insurance and pension schemes due to bureaucratic hurdles and lack of proper documentation.

Incentive Structures and Employee Benefits

Performance-Based Incentives

Various industries in Manipur offer incentives based on productivity and tenure. However, the absence of standardized policies results in disparities among workers.

Government Schemes for Worker Welfare

The Manipur government has introduced schemes such as skill development programs and financial incentives for workers in key industries.

Insurance Protections for Workers

Employees' State Insurance Act, 1948

This act provides medical benefits, disability coverage, and maternity benefits to workers. However, accessibility remains limited in remote areas.

Social Security Schemes

Government-backed insurance schemes aim to provide financial security to workers. The Pradhan Mantri Suraksha Bima Yojana and Atal Pension Yojana are notable examples.

4. Challenges in Implementation of Wage Protection in Manipur

Manipur faces several obstacles in effectively implementing wage protection laws and policies. Some key challenges include:

- **Compliance Issues:** Many employers, especially in the informal sector, fail to adhere to minimum wage regulations due to weak enforcement mechanisms.
- **Delayed Wage Payments:** Workers, particularly those in government-backed employment schemes like MGNREGA, often experience delays in receiving their wages.
- **Lack of Awareness:** Many workers are unaware of their legal rights regarding wages,

incentives, and insurance protections, leading to exploitation.

- **Limited Access to Social Security Benefits:** Bureaucratic hurdles and documentation issues prevent workers from accessing insurance and pension schemes.
- **Weak Enforcement Mechanisms:** Insufficient inspections and monitoring systems allow employers to evade compliance, particularly in remote areas. Weak enforcement mechanisms result in non-compliance by employers, particularly in the informal sector.

Recommendations for Strengthening Worker Protections in Manipur

To enhance wage security, incentives, and insurance protections for workers in Manipur, the following recommendations are proposed:

1. **Strengthening Legal Enforcement** – Implement stricter monitoring mechanisms to ensure compliance with wage laws and timely payments.
2. **Worker Awareness Programs** – Conduct educational campaigns to inform workers about their rights and available government schemes.
3. **Expanding Social Security Coverage** – Improve accessibility to insurance and pension schemes, particularly for informal sector workers.
4. **Government-Employer Collaboration** – Encourage businesses to adopt fair labour practices through incentives and policy support.
5. **Digital Wage Payment Systems** – Promote digital transactions to reduce wage delays and enhance transparency in payments.

5. Relevance of the Govt. of Manipur Official Gazette Notification (16 October 2024)

The Official Gazette Notification dated 16 October 2024 plays a crucial role in reinforcing labour protections in Manipur. This notification likely includes updates on wage regulations,

incentive structures, and insurance provisions for workers. It serves as an official directive for employers and government agencies to implement revised policies effectively. By aligning labour laws with contemporary economic conditions, the notification ensures that workers receive fair compensation and social security benefits. The findings of the Extraordinary Gazette of GOVERNMENT OF MANIPUR SECRETARIAT: SKILLS, LABOUR, EMPLOYMENT & ENTREPRENEURSHIP NOTIFICATION Imphal, The 16th October, 2024 is appended as below:

No.LAB-1/22/2021 -LAB and EM-LAB&EMPL:

The following proposal made by the Government of Manipur on the recommendation of the State Advisory Board on Minimum Wages and in exercise of the powers conferred by clause (b) of sub-section (1) of Section 3 read with clause (iii) of Sub-Section (1) of Section 4 of the Minimum Wages Act, 1948 (Act No. II of 1948) for revising the minimum rates of wages as specified in the Schedules I, II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII, XXIII, XXIV annexed hereto for the categories of employees employed in the employments as detailed in the Schedules are hereby published as required by clause (b) of sub-section (1) of section 5 of the said Act for information of all persons likely to be affected thereafter and the notice is hereby given that the said proposal shall be taken into consideration after the expiry for a period of 60(Sixty) days from the date of publication on which the copies of the Official Gazette in which the said notification is published, are made available to the public.

1. Employment in Agriculture.
2. Employment on Construction or Maintenance of Roads or in Building Operations.
3. Employment in Public Motor Transport.
4. Employment in Shops and Establishments.
5. Employment in Dam Construction and Irrigation Works.
6. Employment in Water Supply (Operation, Maintenance of Water Treatment and Distribution System), Sanitation and Drainage.
7. Employment in Generation, Transmission, Distribution and Supply of Electricity or any other form of power.
8. Employment in Spinning, Weaving, Printing, Dying, Finishing and Bleaching of Silk and Pinafibre.
9. Employment in Wool Spinning, Weaving and Knitting in Handloom or in Cotton Spinning in Mill or Handloom.
10. Employment in Manufacture of Dolls, toys, Brass and Bell Metal.
11. Employment in Wood, Bamboo, Cane Furniture and Fixtures.
12. Employment in Alloy Industries.
13. Employment in Preparation of Soil, Land Development and Other Agricultural Operation.
14. Employment in Plantation of Silk Worm Food Plants for Silk Worms(Mulberry, Oak, Tsar, Castor, etc)
15. Employment in Maintenance of Silk Worm Plants in Sericulture Farms.
16. Employment in any Rice Mill, Flour Mill of Dal Mill.
17. Employment in sweeping and cleaning excluding activities prohibited under Employment of Manual Scavenger and Construction of Dry Latrines. (Prohibition) Act, 1993.
18. Employment in Local Authority.
19. Employment in Private Hospitals, Nursing Homes or Clinic.
20. Employment in Private Educational Institutions.
21. Employment in Brick Kilns.
22. Employment in Oil Mill.
23. Employment in Domestic Works.
24. Employment in Stone Crushing or Stone Breaking.

2: The proposed minimum rates of wages are linked with All India Consumer Price Index Number of Industrial Workers (General Series) Based 2016=100. The minimum wages is proposed to be increased every 6(six) months by the Government by adding Variable Dearness Allowance (VDA) to the revised minimum wages.

3. There will be no difference between the rate of wages of man and woman employee.

4. The wages of apprentice are to be regulated under the Apprentices Act, 1961(Act No. 52 of 1961). Trainees are to be paid not less than 50% of the relevant minimum rates of wages applicable to their employment for the first six months thereafter full wages not less than minimum wages applicable to their employment.

5. Minimum rate of wages for persons below 18 years of age or disabled persons shall be 100% of the minimum rate of wages applicable to the adult employee of the corresponding categories as specified in the Schedules.

6. The term "**Unskilled Labour**" will mean such labour which involves simple operation requiring little or no skill or experience on the job. The term "**Semi-Skilled Labour**" means labour which involves some degree of skill or competence required through experience on the job and which is capable of being performed under the supervision or guidance of a skilled employee and includes unskilled supervision labour. The term "**Skilled Labour**" will mean such labour which involves skill or competence required through experience on the job or through training as an Apprentice or in a technical or vocational institute and the performance of which calls for initiative and judgments.

7. Objections and suggestions, if any, may be addressed to the **Commissioner-cum-Secretary (Skills, Labour, Employment & Entrepreneurship), Government of Manipur, 2nd Floor, North Block(Western Wing), Manipur Secretariat, Imphal 795001 or by email labemp.123@gmail.com**. Objections and suggestions, which may be received from any person with respect to the said proposal before the expiry of period specified above will be considered by the Skills, Labour, Employment & Entrepreneurship Department, Government of Manipur.

6. Wage Protection and Implementattion

The Government of Manipur plays a crucial role in ensuring fair wages, incentives, and insurance protections for workers through various legal provisions and policy frameworks. Here's an overview of its implementation efforts:

1. Wage Protection & Implementation

- The Minimum Wages Act, 1948 is enforced to regulate fair wage standards across different sectors. The government periodically revises wage rates based on recommendations from the State Advisory Board on Minimum Wages.
- The Payment of Wages Act, 1936 ensures timely wage disbursement and prevents unauthorized deductions.
- The Manipur Payment of Wages Rules, 1966 provides additional state-specific regulations for wage implementation.

2. Incentives for Workers

- The government promotes skill development programs and financial incentives for workers in key industries to enhance productivity and employment opportunities.
- Various schemes encourage businesses to adopt fair labour practices by offering tax benefits and subsidies.

3. Insurance & Social Security Protections

- The Employees' State Insurance Act, 1948 provides medical benefits, disability coverage, and maternity benefits to workers.
- The Unorganized Workers Social Security Act, 2008 ensures financial security for informal sector workers through pension and insurance schemes.
- The Manipur Unorganized Workers Social Security Rules, 2016 further strengthens protections for workers in unregulated sectors.

4. Government Notifications & Policy Updates

- The Official Gazette Notification dated 16

October 2024 introduced revised wage rates and updated labor policies to enhance worker protections.

- The Code on Wages (Manipur) Rules, 2021 was notified to streamline wage regulations and improve enforcement.

5. Challenges & Future Improvements

Despite these legal frameworks, challenges such as wage delays, lack of awareness, and weak enforcement mechanisms persist. Strengthening monitoring systems, digital wage payments, and worker education programs can further improve labor protections in Manipur.

1. Strengthening Legal Enforcement – Improved monitoring and stricter penalties for non-compliance.
2. Worker Awareness Programs – Educational initiatives to inform workers about their rights.
3. Enhanced Institutional Support – Collaboration between government agencies and businesses to ensure effective implementation.

7. Conclusion

The legal safeguards for workers in Manipur provide a foundation for fair labour practices. However, challenges in enforcement and awareness hinder their effectiveness. Strengthening legal mechanisms, improving worker education, and fostering institutional collaboration are essential steps toward ensuring equitable labour rights. The legal safeguards for workers in

Manipur provide a strong framework for wage security, incentives, and insurance protections. However, challenges such as delayed payments, lack of awareness, and weak enforcement mechanisms hinder their effectiveness. Addressing these issues requires proactive efforts from both the government and employers to ensure fair labour practices and social security benefits.

Suggestions for Improvement

1. Strengthening Enforcement – Increase labour inspections and penalties for non-com-

pliance to ensure wage protection.

2. Awareness Campaigns – Conduct educational programs to inform workers about their rights and available government schemes.
3. Digital Payment Systems – Promote electronic wage transfers to minimize delays and enhance transparency.
4. Expanding Social Security Access – Simplify documentation requirements for workers to enrol in insurance and pension schemes.
5. Collaboration Between Stakeholders – Encourage joint initiatives between the government, labour organizations, and businesses to improve worker protections.

References

1. Babu, M. (2021). The Role of Incentives in Labor Rights Protection in India. *Economic Policy Journal*.
2. Chakraborty, R. (2019). Social Security Schemes for Workers in Northeast India. *Manipur Labor Studies Review*.
3. Dey, S. (2023). Legal Frameworks Governing Minimum Wage and Worker Insurance in India. *Indian Journal of Labor Law*.
4. Gupta, A. (2022). Challenges in Wage Implementation in Informal Sectors. *Labor and Employment Policy Reports*.
5. Kumar, P. (2020). Employee Benefits and Incentive Structures in Northeast India. *Indian Economic Studies*.
6. Manipur Government Labor Department (2021). *Annual Labor Report on Worker Protections and Wage Compliance*. Government of Manipur Publications.
7. Nath, K. (2017). Impact of Wage Policies on Worker Welfare in Manipur. *Indian Journal of Economic Studies*.
8. Prasad, V. (2018). Insurance Schemes and Financial Security for Laborers in Manipur. *Northeast Economic Review*.
9. Reddy, V. (2018). Workers' Rights and Legal Safeguards under Indian Labor Laws. *National Labor Studies Institute*.
10. Sen, B. (2021). The Effectiveness of Insurance Protection for Workers in Manipur. *Northeast India Economic Review*.
11. Sharma, K. (2019). Labor Rights and Government Enforcement Mechanisms in India. *Indian Journal of Social Policy*.
12. Singh, A. (2016). Government Incentives for Wage and Labor Protection in Manipur. *Journal of Policy Studies*.

Tracing the Martial Traditions of Manipur and their Contribution to India's Nation Building



Lt Gen (Dr) Konsam Himalay Singh, Retd

The Ancient Military glories

The martial traditions of Manipur are many centuries old. The sacking of Sagaing in 1738 by the Manipuri army during the reign of King Pamheiba was the most remarkable military campaigns against the Burmese kings in present day Myanmar. The campaign took the Manipuri army deep inside the heart of Burma crossing the Irrawady River. The Burmese Army retaliated in good measure several times during the next 100 years. Manipuri Sagols (horses) were extensively employed for these military adventures. A Manipuri horseman with Arambai (Dart) was the most dreaded war machine among the Burmese forces. The famous “Kathey Horse”, entirely consisting of Manipuri horsemen raised by the Burmese King and led by a Manipuri General is also known to have invaded Siam (Thailand) during 1758. The period of Burmese occupation of Manipur during 1819-1826 is known as ‘Chahi Taret Khuntakpa’ (Seven years devastation) in Manipur when the Burmese forces entered Manipur and neighbouring Ahom kingdom till they were driven out with the help of British forces which lead to the “Treaty of Yandaboo, 1826”. Manipur Levy, raised by King Gambhir Singh in Cachar with the assistance of the British played a critical role in driving away the Burmese forces. Names of these Manipuri warriors are proudly displayed in the Gambhir Singh memorial located near Canchipur. Manipur Levy later became Manipur Rifles. Irregular and guerilla tactics employed by the remnant of Manipuri army against the occupying Burmese forces in Manipur are legendary. Manipuri Forces played a significant

role in 3rd Anglo-Burmese War of 1885 when Manipur assisted the British forces to defeat the Burmese under the guidance of Col Johnstone as mentioned in his book. A few years later, the invasion of Manipur by British Forces in 1891 led to the battle of Khongjom in April 1891 and eventual defeat of Manipur Army at the hands of the British forces and the kingdom lost its full sovereignty. The historic battle was led by legendary Paona Major when almost the entire force was overwhelmed by the better armed British forces. These soldiers gave their lives fighting the colonial powers.

“Chainarol” (Way of the Warrior), one of the 3000 odd ‘Puyas’ (Chronicles and other written records of the yore) of the ancient Manipuri civilisation tell the ways of the Manipuri warriors through the 1st century till the 16th centuries. Chainarol lays down the rules and ethics of personal combat. Humanitarian aspects of the Chainarol aligns with the humanitarian laws of the present day in context and practice. Few examples are:-

1. Distinction between the civilian population and the combatants
2. Sparing the civilian population and their properties from harm.
3. Honourable Treatment of wounded, and dead combatants.

King Gambhir Singh in 1826 while fighting the Burmese forces instructed (written in archaic language) his forces, the Manipur Levy, on a code of conduct while operating against the fleeing Burmese forces:-

1. Do not strike the fleeing enemy from behind.
2. Hitting Brahmins, women, children, beggars were forbidden.
3. Any enemy without his spear and who holds palm together in submission or has climbed a tree or sits on a termite hill should not be killed.
4. Anyone reading a scripture, practising vocal music, or lepers even by mistake will attract divine retribution. Anyone who is asleep should not be killed.

The above principles are still relevant in India's context, whose central principle is focussed on "just war".

20th Century

During World War I, the king of Manipur raised 2000 strong Labour Corps to assist the British forces in the Europe. Over half of the personnel of the labour Corps never made it back home to Manipur. Most of these personnel were from the Naga community of Manipur even though there were a small number of Meiteis and Kukis too.

During World War 2, Manipur became a battleground between the British forces and the Japanese forces complimented by the Indian National Army (INA) led by Netaji SubhasChandra Bose. Many people of Manipur helped the INA, while the King continued to support the war efforts of the British empire. Among the many who were involved directly during the great war, names of Maharajkumar Captain PB Singh, the younger brother of the then monarch and Major Bob Khating, a Tangkhul were commissioned as officers by the British army during the war. Major Khating earned OBE (order of the British Empire) and "Military Cross" for his exemplary role during the war. Major Khating was the first commissioned officer from the kingdom of Manipur and he played a crucial role while serving in V force of the British army in Burma.

Bob Khating later served as Hill Minister of the Kingdom when his good friend Captain PB Singh became the Chief Minister of the state. Major Bob Khating is remembered for

his contribution in integrating Tawang region to India when, as Assistant Political officer of Sela. He was tasked to integrate the Tawang tract into Indian Union by the Governor of Assam, Sri Jairam Das Daulatram during 1951. Khating was to be accompanied by a company of 5 Assam Rifles which was located at Lokra. He raised the Tri-colour flag on 14 Feb 1951 at Tawang. A true son of Manipur and India, Major Khating went on to become the Chief Secretary of Nagaland in 1963 and India's Ambassador to Burma in 1967. People of Manipur remain proud of the legendary former major of the army. I had the unique privilege of having met both these legends of Manipur on a number of occasions. Captain PB Singh was committed to the idea of multi-ethnic Manipur. Captain Rajkumar Madhurjit Singh and Captain Joy Singh were the others who were commissioned during the tumultuous period 1944-1949. Captain Madhurjit Singh (father of RK Meghen Singh, former Chairman of UNLF) was also closely associated with the establishment of VVF (Village Volunteer Force) during 1960s under Govt of India. I had the opportunity of meeting him during my childhood days at age 10, while undergoing a VVF weapon training activity near my village Charangpat during 1965-66 or so.

In the aftermath of India's Independence and subsequent merger of the kingdom of Manipur to the Indian union in 1949, the Manipuris have excelled in the field of military operations and its associated matters. Mention may be made of late Lt Col H Bhubon Singh, commissioned during the late 1950s in the Corps of Engineers, was the first from Manipur to command an active Indian army Unit during 1970s. Lt Col Bhubon Singh also served as Chairman of the State Public Service Commission. He was also president of the BJP in Manipur during 1980s and served as an MLA and a minister. He personified exemplary integrity and a man of character qualities still remembered by many in the state in an otherwise toxic socio-political climate in the state. Others who were commissioned into the armed Forces during 1950s as officers include the names of Sqn Ldr Ch Biren Singh, Major Shaiza, Flying officer RK Ronen Singh.

Many from the state were recruited in the personnel below the officer rank in various Arms and Services, particularly in the Assam Regiment during this period.

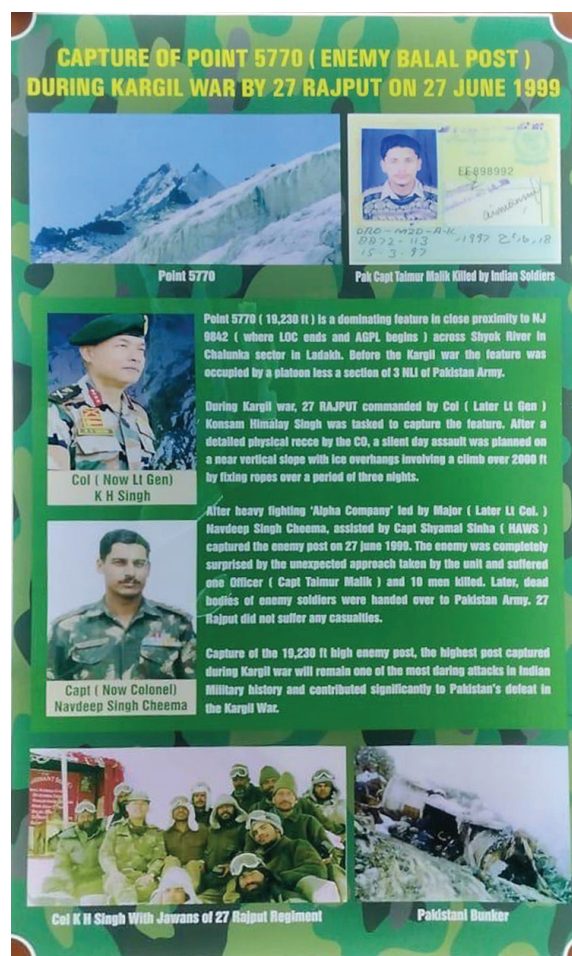
The Modern era

While Lt Col Bhubon Singh was nominated for Technical staff College course in UK, Col IS Chanam became the first Manipuri to be nominated for the prestigious Staff College course in Wellington in 1976 after a very stiff All India competition. Lt Col H Bhubon Singh and Col IS Chanam were serving in Ladakh when the 1962 Indo-China war took place. Colonel Rk Jatrasana, Colonel IS Chanam who were commissioned during early 1960s made their mark in the army profession by rising to command their respective units. Later in late 1970s, Col RK JatraSana Singh(Assam Regiment) and Col AB Sharma(Assam Regiment), Col KG Sharma(Artillery)commanded their respective units with elan. Wg Cdr Ak Deben of IAF commanded a transport unit during the period.

At least 10 officers were commissioned during Emergency/ Short Service commissions during the 1962-1966, in the aftermath of Indo-China War 1962 and Indo-Pakistan war 1965. Lt Cols Rajkumar, KD Singh were commissioned soon after. Many took part in these wars and performed well in the battlefield. Capt(Later IG police, Delhi) KD Singh of BIHAR Regiment was wounded in battle during 1971 war(OP ORCHID). During early 1970s, Manipur had Col LJ Singh of Naga regiment, Col SK Singh of Gorkha Rifles, both from RIMC Dehradun who were given command of active infantry units. Col Hangleam of Army Education Corps was promoted to the rank of Colonel (Selection Grade) sometime in 1980s.

Op VIJAY (KARGIL) to the Present

Col(later LT GEN) K Himalay Singh, took part in Operation Vijay (Kargil) war as a CO of a RAJPUT unit in Turtuk/ Siachen Sector. The unit under his command captured the strategic feature of Point 5770 in the sector. He was awarded with Yudh Seva Medal for his role in



Photograph of 27 Rajput action during the Kargil War Displayed in Amritsar War Memorial Museum: 2023

the war. A total of Seven(7) soldiers of Manipur from various units of the Army sacrificed their lives in the Kargil War fighting the enemy.

The glass ceiling was broken when Col K Himalay Singh was promoted to the rank of Brigadier in 2006, thus becoming the first Brigadier and later the first major General in 2010 from the state. He also had the distinction of becoming the first Lt Gen in Indian army from the North East India in 2014. He later commanded a Corps in J&K in 2014. Col(Later LT GEN) LN Singh of Intelligence Corps commanded a Intelligence unit. LN Singh rose to become the 2nd three star rank from the state in 2016 and became Commandant Intelligence school, Pune, a record in the history of the state to produce two Lt Gens from the state. Air Commodore Ranbir Singh became the first Manipuri to reach the star rank in Indian

Air Force and rose to command an operational base of the IAF. Further, Col I D Singh of the Army Ordnance Corps, Col SK Sharma of Gorkha rifles became COs, few amongst many of their contemporaries in late 1990s. Brig LI Singh, younger brother of LN also rose to the rank of Brigadier in 2011 becoming the third Brigadier from the state. Subsequently, during 2018 onwards Col N Romeo Singh of the Rajput regiment, Col KJ Singh of the Jammu and Kashmir Light infantry, Col Hemochandra of Corps of Engineers, Col Khuman of Gorkha Rifles, and Col Jotin of the Parachute Regiment also rose to join the elite group of Manipuri officers to the rank of Brigadier. There have been at least 35 more officers who rose to the Select Ranks and command operational units in the three services of the Armed Forces of India.

National /Presidential Awards

Many officers and men have won gallantry and war distinguished service medals in various operations since 1947. Among them Late Major Jotin of Army Medical Corps stands tallest with his being awarded with the highest national peacetime gallantry award, the Ashok Chakra in 2010. He grappled with a suicide bomber in Kabul to save his colleagues and made the supreme sacrifice on 26th Feb 2010.



*The Bravest of the Braves -Late Major Jotin Singh,
Ashok Chakra*

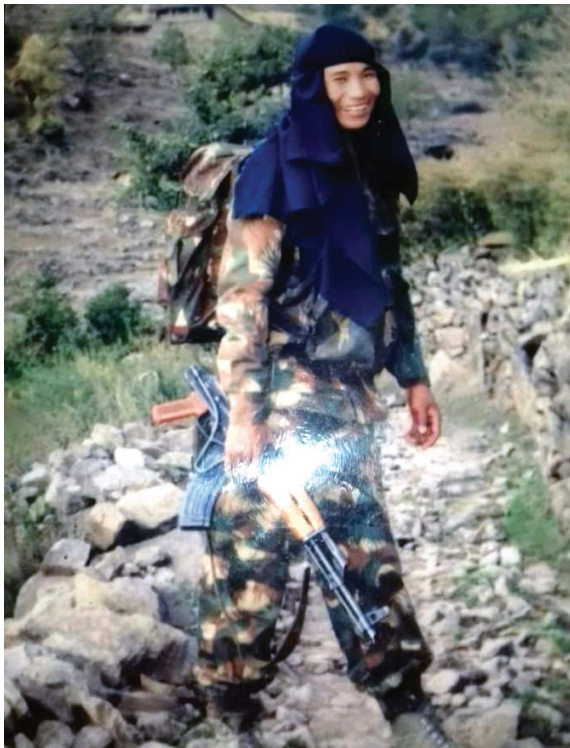
Col S Nector of Parachute Regiment and Col NB Singh of the Rajput regiment earned their Kirti Chakras(2nd highest peacetime gallantry award) in Counter insurgency operations in North East India/Manipur. Late Major NJD Singh, of Gorkha Rifles laid down his life fighting the LTTE in Sri Lanka during OP PAWAN in 1987. A grateful nation bestowed the award of Vir Chakra posthumously. Nk Kamkholan of 7 ASSAM regiment was honoured with Vir Chakra for his bravery in OP PAWAN 1987.



LATE MAJOR NGANGOM JOYDUTTA SINGH VIR CHAKRA (POSTHUMOUS)
4/5 GORKHA RIFLES (FF)

Sepoy Asuli Mao of the Naga Regiment was conferred the Vir Chakra during the Kargil War 1999 for his action in the battle of Tololing. Hav Joseph Anal of 2 NAGA and Hav Tilok Singh Thapa earned their Vir Chakra during the Kargil War.

The Param Vishist Seva Medal (2017), Uttam Yudh Seva Medal(2016), and Ati Vishist Seva Medal(2012) for distinguished services in J&K were presented to me by the President of India in Rashtrapati Bhavan, thus becoming the only recipient of these medals in the state so far. Col(Later Brig) LI Singh became the second



Late Sep Asuli Mao, Vir Chakra (Kargil War)

officer from Manipur to earn' Yudh Seva Medal' for his role as a CO in the LOC during mid 2006-7. In addition to the above, many more prestigious gallantry awards include 5(five) Vir Chakras, 14(fourteen) Shaurya Chakras and 55(fifty five) Sena Medals , 5(five) VSMs and 7(Seven) Mentioned-in-Despatches have been won by our officers and men serving in Indian defence Forces in the period till date. Over 90(ninety) servicemen from the state have been Killed in Action in various operations so far since 1962. These achievements speak volumes of the contributions of the Manipuris to the nation.

The Legacy Continues

Till early 1980s, most of those commissioned were from RIMC, Dehradun; Sainik School Goalpara Assam, Sainik School Purulia(WB) and NCC entries. Later, Sainik School Imphal contributed significant number of officers in the Armed Forces of the union. Many more from Civil colleges, doctors, engineers and other graduates joined the Armed forces in the later years. There were no looking back thereafter. In comparison ,no other state in the Eastern India

have contributed so much to the nation building by so few from Manipur. By 2025, the state with a population of 28 lacs , is credited to have contributed over 450 service officers including over 40 lady officers in different streams of the military. Flying Officer Rumi Sharma d/o Col SK Sharma became the first lady pilot in IAF. Many Second generation officers were commissioned too. Col Ashish Singh, Armoured Corps s/o Col Koijam was selected to attend the prestigious Higher Command Course in USA. Similarly ,Lt Col Keirungba s/o Lt Col ON Singh, Lt Col Irengbam s/o Col ID Singh, Major Khulem son of late Col KS Singh, Major Bella daughter of Col H Gojen singh joined the defence forces following the sacred path of their proud fathers . Approximately 6000 are presently serving in various personnel below the officer ranks, the highest from North East India less Assam. The veteran community in Manipur have been engaged in various meaningful activities for the good of society in every field as well.

There are over 12000 Ex-Servicemen and women in the state at present. Many amongst them rose to be honoured with Honorary ranks of Captain too for their exemplary service to the nation.

Manipur and Manipuris should rightfully be proud of all their gallant sons and daughters who have contributed significantly to India,s nation building and will continue to do so in the future. Be it in war or in aid of civil authorities , they have performed beyond the call of duty and delivered victory to defend REPUBLIC OF INDIA.

**(Yeh Mere Vatanki logon Jara
Yaad Karen Unko)**

Welfares Scheme, Incentive and Insurance for Workers

*Konsam Kelvin
Student Bsc 6th Semester*

“All labour that uplifts humanity has dignity and importance and should be undertaken with painstaking excellence.”

- Martin Luther King Jr.



India is a land of kindness, wisdom, compassion and with leader like Prime Minister Modi who often talks about aspiration of Indian workers (strength of the country) and integrating them with vision of Viksit Bharat 2047 which is reflected in social schemes, incentive, insurance benefiting workers in different sectors often creating a new wave of enthusiasm, creativity and motivation to work with more vigour.

Working in this direction, government have created e-shram portal - centralized database of all unorganized workers including Construction Workers, Migrant Workers, Gig and Platform workers, Street Vendors, Domestic Workers,

Agriculture Workers, etc to be seeded with Aadhaar, improving the implementation efficiency of the social security services.

Government is implementing various welfare schemes, incentives and insurance for the welfare of workers, mentioning few of them would be --

1. Insurance schemes –

- i. Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) -- An insurance scheme offering life insurance cover of 2 lakhs for death due to any reason. It is a one-year cover, premium payable at Rs 436 per annum per subscriber, renewable from year to year in age group of 18-50.
- ii. Pradhan Mantri Suraksha Bima Yojana-- Accident Insurance Scheme offering accidental death and disability cover for death or disability on account of an accident in age group of 18-70, premium payable at Rs 20 per annum per member.
- iii. Pradhan Mantri Jan Arogya Yojana (PM-JAY)--- Ayushman

Bharat, health cover of Rs. 5 lakhs per family per year, a flagship scheme of Government of India, aims to achieve the vision of Universal Health Coverage. This initiative has been designed to meet Sustainable Development Goals (SDGs) and its underlining commitment, which is to “leave no one behind.” an attempt to move from sectoral and segmented approach of health service delivery to a comprehensive need-based health care service.

PM-JAY envisions to help mitigate catastrophic expenditure on medical treatment which pushes nearly 6 crore Indians into poverty each year.

The households included are based on the deprivation and occupational criteria of Socio-Economic Caste Census 2011, Anganwadi worker and helper, elders above 70 age, asha workers.

2. Scheme —

i. Pradhan Mantri Shram Yogi Maandhan---

A government scheme meant for old age protection and social security of Unorganized Workers.

Unorganized Workers are mostly engaged as home based workers, street vendors, mid-day meal workers, cobblers, rag pickers, rickshaw pullers, landless labourers, agricultural workers, construction workers, beedi workers, handloom workers, audio- visual workers or workers in similar other occupations in age group of 18-40 years.

It is a voluntary and contributory pension scheme under which the beneficiary would receive a minimum assured pension of Rs 3000/- per month after attaining the age of 60 years.

The scheme is a tribute to the workers in the Unorganized sectors who contribute near around 50 per cent of the nations Gross Domestic Product (GDP).

ii. Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)---

Free food grains and direct cash transfers to families below the poverty line, including migrant workers. In addition, the One Nation One Ration Card (ONORC) scheme, launched in 2018, ensures food security through the portability of ration cards across India providing robust safety net for migrant workers.

3. Employment linked incentives scheme---

Innovative initiatives addressing country growing unemployment, underemployment and mismatch between skill and industry demand crisis by stimulating private sector participation in job creation and workforce development.

- The scheme targets individuals entering the formal workforce for the first time and is facilitated through the Employees Provident Fund Organisation (EPFO).
- One-month wage subsidy up to Rs. 15,000 is provided.
- Designed to foster employment in the manufacturing sector, this scheme rewards employers and first-time employees who contribute to the EPFO
- Scheme offers financial relief to employers by reimbursing part of their EPFO contributions:
- Skilling Programme with State and Industry collaboration enhancing employability and industry needs.
- Internship Programme with Top companies providing hands on experience.

Statistical figures

Annual periodic labour force participation data July 2023-june 2024 to estimate employment and unemployment indicators in both rural and urban areas indicates 1 --

- i. Increasing Trend in Labour Force Participation Rate (LFPR) for persons of age 15 years and above---In rural areas, LFPR increased from 50.7% in 2017-18 to 63.7% in 2023-24 while for urban areas it increased from 47.6% to 52.0% and. LFPR for male in India increased from 75.8% in 2017-18 to 78.8%

in 2023-24 and corresponding increase in LFPR for female was from 23.3% to 41.7%.

- ii. Increasing Trend in Worker Population Ratio (WPR) for persons of age 15 years and above in rural areas, WPR increased from 48.1% in 2017-18 to 62.1% in 2023-24 while for urban areas it increased from 43.9% to 49.4%. WPR for male in India increased from 71.2% in 2017-18 to 76.3% in 2023-24 and corresponding increase in WPR for female was from 22.0% to 40.3%.
- iii. Decreasing Trend in Unemployment Rate (UR) for persons of age 15 years and above. In rural areas, UR decreased from 5.3% in 2017-18 to 2.5% in 2023-24 while for urban areas it decreased from 7.7% to 5.1%. UR for male in India decreased from 6.1% in 2017-18 to 3.2% in 2023-24 and corresponding decrease for female was from 5.6% to 3.2%.

Organized and Unorganized Sectors-

The organized sector includes primarily those establishments which are covered by the Factories Act, 1948, the Shops and Commercial Establishments Acts of State Governments, the Industrial Employment Standing Orders Act, 1946 etc. This sector already has a structure through which social security benefits are extended to workers covered under these legislations.

The unorganized sector on the other hand, is characterized by the lack of labour law coverage, seasonal and temporary nature of occupations, high labour mobility, dispersed functioning of operations, casualization of labour, lack of organizational support, low bargaining power, etc. all of which make it vulnerable to socio-economic hardships.

In the rural areas it comprises of landless agricultural labourers, small and marginal farmers, share croppers, persons engaged in animal husbandry, fishing, horticulture, rural artisans, etc. where as in the urban areas, it comprises mainly of manual labourers in construction, carpentry, trade, street vendors, hawkers, head load workers.

- Legal frameworks:-

Force labour, lack of social protection is gross violation of dignity of human rights and the need for protecting and safeguarding the interest of labour as human beings has been enshrined in part-III (Articles 16-equality of opportunity in matter of public employment, 23 - prohibition of traffic in human beings and forced labour & 24- prohibition of employment of children in factories) and part IV (Articles 39 -certain principle to be followed by the state, article 42 -provision of just and humane conditions of work and maternity relief, article 43 living wage for workers, article 43A- participation of workers in management of industries) of the Constitution of India in line with Fundamental Rights and Directive Principles of State Policy. Labour is a concurrent subject.

Accordingly state of manipur enacted the --

- i. Manipur Minimum Wages Rules, 1961- In which the retail prices at the nearest market shall be taken into account in computing the cash value of wages paid in kind and of essential commodities supplies at concession rates in accordance with such directions as may be issued by the Chief Commissioner from time to time.
- ii. Manipur Unorganised Workers' Social Security Rules, 2016.
- iii. Manipur Contract Labour (Regulation and abolition) Rules, 1974.
- iv. Manipur payment of wages rule, 1966.

In addition to all these, new labour reforms will ensure well being of our industrious workers, universalising minimum and timely payment of wages, occupational safety for worker and better working environment . These reform also harness technology, reducing compliance, red tapism. Leading to the overall ease of doing business and finally boosting economic growth. A real example of minimum government, maximum governance.

Challenges.

- a. In reality we are witnessing horizontal shift-

ing of employment from one sector to another mostly to agriculture and not actual reduction in unemployment rate. employment in agriculture, already high at 44.1 per cent in 2017-2018 (20.8 crore) has gone up further to 46.1 per cent in 2023-2024 (29.2 crore) further aggravating the underemployment crisis. 1

- b. Unpaid female in household chores, self employment jobs contributing to 5.9 crore jobs between 2017-18 to 2023-24.
- c. Lack of robust monitoring and evaluation, feedback mechanisms to track progress and make necessary adjustment .
- d. State with limited resources often face challenges to training, capacity buildings and infrastructure developments leading to weak enforcement of policy.

Way forwards-

- Workers are the primary factor occupying core of economic system and form base in the any organisational hierarchy driving the production, innovation, consumption process in country economic output.
- --Adaptability is the most important trait in any sectors. With evolving industry, its needs and demands also grows. workers need to acquire more skills- reskills upskills, knowledge to meets those demands and be part of development of new technology, products leading to increased efficiency and competitiveness in global markets upgrading overall standard of living over time.
- With globalisation, the importance for nurturing skilled, flexibility, well paid labour force cannot be overlooked.
- The government of India through its welfare scheme, incentives, insurance and by ensuring timely and efficient service delivery made possible through the relentless efforts and seamless coordination of all the stakeholders involved reflects government unwavering commitments to the welfare of workers.
- Government of manipur in collaboration

with Ngo, technology firm have been organising skill development programs across state in diverse fieldcrochet amigurumi dolls, pottery making, mushroom cultivation, spawn production, modern pig farming, food processing, modern poultry and duckery farmings, workshops on digital marketing and branding, leveraging social media for brand promotion and customer engagement, quality controls, packaging and shipping, managing logistics.

- Manipur state rural livelihood mission has also organised different livelihoods activities and training programs such as agarbatti, detergent, liquid dish wash, cocoon reeling, paper bag, floor disinfectant makings helping commoners in generating easy cash.
- Manipur government is taking an all out efforts in skilling unpaid households female labours force by providing nowhow, raw materials, support systems in earning basic sustainable livelihood.

"A hundred times every day, I remind myself that my inner and outer life depend on the labours of other men."

– Albert Einstein

Reference-

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=2057970> 2 , 3 --

[https://www.deccanherald.com/opinion/employment-is-rising-](https://www.deccanherald.com/opinion/employment-is-rising-but-government-schemes-are-failing-why-3441390)

[but-government-schemes-are-failing-why-3441390](https://www.deccanherald.com/opinion/employment-is-rising-but-government-schemes-are-failing-why-3441390)

Mahila Pradhan Kshetriya Bachat Yojana Women Agents: Ambassadors of National Saving Schemes and Epitomes of Self-Reliance



Rojendrakar Nongthpmba

Finance Officer, Dhanamanjuri University, Imphal

It is needless to say that the habit of saving plays a vital role in one's life by ensuring financial security and stability. When individuals understand the importance of saving and make it a part of their lives, they are less likely to engage in unnecessary spending that could jeopardize their financial well-being. They would make their expenditures today with an eye toward future financial needs—such as children's education, marriage, or medical emergencies. That is why many individuals save money as this habit that offers peace of mind and lasting benefits.

Against this background, I would like to highlight the role of MPKBY women agents working in Manipur in promoting the National Saving Schemes in the state as well as their working experience that I gained during my tenure as Director, Small Savings, Manipur. It would not be an exaggeration to claim that without the MPKBY (Mahila Pradhan Kshetriya Bachat Yojana) agents, the National Savings Schemes, backed by the Ministry Of Finance, Government of India would not have successfully attracted individual savers. The MPKBY agency system is unique in that it exclusively appoints eligible women as agents to promote and canvass for the National Savings Recurring Deposit Scheme, offering door-to-door services to potential savers. These agents operate across the state, championing the cause of financial security and savings. Some have been serving since the early days when the National Savings Organization was active in the state. Even after the organization was dissolved in Manipur, they have continued their dedicated work in coordination with Post Offices, and the Directorate of Small Savings, Manipur.

I have observed that some of the agents are so emotionally attached to the MPKBY agency system that they simply cannot leave the job—even after crossing the age of seventy. To them, this work is not just a means of livelihood but also a source of identity. From the dates recorded on their agency certificates, it is evident that many of them joined the system in their youth. Like anyone in any other profession, they too have experienced the ups and downs of their professional journey over the years. Now, having witnessed two generations, many have long surpassed the typical retirement age, yet they continue to serve as agents for as long as their health permits. I noticed that their unwavering dedication comes from the fact that the commission they earn through mobilizing savings under these schemes and for some of them this commission has been the primary source of income for their families. I believe that, as saving agents, they have had an edge over other women in terms of financial planning and prudent money management. With a forward-looking mind-set and disciplined saving habits, they managed their expenses wisely and contributed significantly to their children's education and the shaping their careers.

While most of the agents, I was told, received support from their family members—especially their spouses, children, and even in-laws—for their work as saving agents. However, I could make out that in their day-to-day agency tasks such as collecting deposits from clients and canvassing prospective clients to open new recurring deposit accounts, they relied primarily on their own social connections,

personal resources, abilities, and skills. That said, there may be isolated cases where agents do not receive support from their spouses. I came across one agent who could not submit her monthly collection report on time. When I asked for the reason, she said, 'Sir, I do not get any kind of support from my husband. He wastes money on drinking, does nothing to earn, and when I visit prospective clients, he suspects me of wrongdoing. So, I do my agent's work discreetly. Kindly allow some relaxation if I am unable to submit the report on time.' Her story made me reflect: there may be many women silently enduring physical and verbal abuse from their husbands day in and day out—simply because they do not want to face the ignominy of being labelled an unfaithful wife by society.

These women agents are the mainstay of these savings schemes. I have observed that the monthly collections made by these agents from their clients—who opened savings accounts through them—have far exceeded the total number of accounts opened and the amounts deposited by individuals on their own. Even though they are not regular employees, these agents have rendered yeoman's service in promoting and canvassing the schemes to the general public. They have played a key role in educating people about the importance of saving through the most secure instruments sponsored by the Ministry of Finance. In our state, nearly 100 dedicated MPKBY Mahila agents are working as authorized agents. They are appointed by the Directorate of Small Savings, Manipur. Their main responsibility is to promote and canvass the National Savings Recurring Deposit Scheme, which is operated by Post Office branches in the state, as is done in other parts of the country. In addition to this saving scheme, there are eight other lucrative schemes, all sponsored by the Ministry of Finance. These schemes cater to the diverse saving needs of different sections of the population. The unique features and interest rates of each of the national savings schemes can be obtained from the Directorate of Small Savings, Manipur, in the form of pamphlets. During my stint as Director of Small Savings, Manipur, I had the opportunity to interact with almost all the Mahila agents. I

can proudly say that as result of their dedicated service, the benefits of these savings schemes have reached the maximum number of people. I can also vouch for their hard work and sincerity. A few years ago, I came across newspaper reports about sections of the public who had lost their hard-earned money by investing in bogus schemes floated by unscrupulous, criminal-minded firms or individuals. These innocent people were duped by promises of exorbitant interest rates over short periods. Looking back, I feel that had these individuals come into contact with the Mahila saving agents, they might not have fallen prey to such fraudulent schemes. These agents are practical and knowledgeable women when it comes to financial management. They may not hold formal degrees in the subject, but their financial acumen is, in my opinion, unparalleled. The minimum qualification required to become an agent is a pass in Class 10, although I have come across some agents who hold graduate degrees.

These Mahila agents are well aware that money is not easily earned. They also have knowledge that the schemes promoted by some unscrupulous individuals or firms—offering high monthly interest rates of even more than three percent—are all bogus. Regardless of who their clients are, I can confidently say that these agents would have dissuaded them from investing in such fraudulent schemes. Their reasoning is simple: National Savings Schemes are the most reliable options for saving. Over the years, they have seen their long-time clients happily reap the benefits of their investments in these schemes. Some of these agents have been associated with the Post Office and these savings schemes for more than thirty years. Many financially prudent citizens trust their traditional and financial wisdom and consistently invest their savings through them. I have come across some Mahila agents who never attempted to apply for government jobs because they were misinformed that securing a job in the government sector is impossible without money or connections. I told them clearly that no one can simply land a government or even a private sector job without merit, eligibility, or competence—regardless of how much money

or how many connections they may have. Some have not explored opportunities in other sectors at all because they are content with their current profession. They enjoy meeting people and convincing them of the benefits and merits of investing in National Savings Schemes. Many of them have shared that after becoming agents, not only have their personalities become more people-friendly and their self-confidence significantly increased, but their communication skills, soft skills, and interpersonal skills have also improved by leaps and bounds, making them more self-reliant in every sense of the word. For their long-standing commitment to their profession, I salute each one of them. At a time when employment opportunities in the government sector are limited, I believe this agency system provides a dignified way for them to earn a livelihood.

The more they work with dedication and sincerity, the greater their potential to earn from their monthly collection Commissions. Currently, most of the agents are concentrated in the Imphal area, though their numbers are gradually increasing in other districts. The awareness spread through camps and media outreach by the Directorate of Small Savings has encouraged educated and unemployed women—who have the zeal to earn an income and simultaneously promote the importance of National Savings Schemes—to come forward and work as Mahila agents in recent times. I believe this is a positive development. The services of MPKBY agents have become increasingly relevant, as many people today are either too busy or simply unwilling to deal with the hassle of opening accounts and making monthly deposits themselves, even if they are digitally savvy. There are also elderly, often lonely individuals who prefer to rely on agents for opening savings accounts and handling their monthly deposits. These agents have become trusted associates—sometimes even more so than the clients' own family members. I am sure there may be people who, guided by their good sense of generosity, may choose to make investment in saving in schemes through women agents so that the agents can earn commissions and become more financially self-reliant. I also encourage the discerning public who wish to invest in savings

schemes to reach out to these women agents. Newcomers to this profession need not worry, as the experienced agents are always ready to support them in their new roles. The basic technical know-how required for the job, along with guidance and tips for learning the ropes, can easily be obtained from those who have been in the field for over twenty years. Being women also offers certain advantages, as they tend to form groups quickly. I believe they share many common topics of interest, which fosters cooperation and a strong sense of camaraderie. They work together as a team and are always willing to lend a helping hand to one another. I am informed that post office branches treat the agents in a very cordial and nice manner. They even have also set up reserved counters specifically for agents, allowing them to carry out their transactions smoothly and without hassle.

The state government has also, in the past, provided incentives to agents who excelled in their work, particularly in opening new savings accounts for clients. The practice has since been discontinued. Earlier the state Government used to derive direct benefit from the operation of National Savings Scheme in the State by way of receiving loans from the National Small Savings Fund. However, this does not mean that our state no longer benefits from the operation and promotion of these savings schemes. Firstly, through the Directorate of Small Savings, MPKBY agents are appointed, providing unemployed educated women with an opportunity to become self-employed and earn commissions. Secondly, citizens are being encouraged to develop the habit of saving by investing in one of the most secure financial instruments available. In doing so, citizens of the state are made to become aware of their participation in the nation-building process. And in this entire framework of promoting National Savings Schemes, the role of MPKBY women agents remains indispensable. They are, in fact, the true ambassadors of the National Savings movement. Their contributions deserve recognition by the State Government, which could be meaningfully expressed through the provision of incentives, I believe.

Propelling self-reliant labour-intensive organic millet farming system in Manipur hills

Increasing population and shrinking arable land resources coupled with anti-conservational agricultural practices for immediate benefit ignoring long term sustainability concept of livelihood and truth of ‘mankind is a part of nature and has to live in harmony with nature’ mark the dawn of new millennium resulting significant alteration in food habit lifestyle pattern leading to an increase consumption of refined food stuffs which are low in nutrients and dietary fibre. Although juxtaposing the ancient food consumption livelihood tradition and modernity is daunting task ,yet to counter the challenges of depleting resources, concept of self-reliant but labour intensive self- sufficient millet organic farming system for healthy crop production for healthy life style is the need of the hour in the interest of masses and in particular the farming communities of all sections of societies .Organic farming system of any crop is basically a labour intensive for the overall management of the system that involve farm yard manure production and composting timely distribution and admixture in the field, fodder management and supply to livestock and manually loosening of soil using bulls and labour. Entire organic farming process required a good number of labours force whose contribution is significant in the chain process of farm production and consumption in a society. As such one has to appreciate their ‘dignity of labour’ to foster the organic cultivation in hilly terrain where there is no alternative to manual based labour-intensive farming. Organic farming is a labour intensive self-reliant and self -sufficient farming



GKN Chhetry
Professor, Department of life sciences
Manipur University

system that require no external inputs for the management of millet crop farming unlike other cereal crop like rice ,maize, wheat, etc . All requirements of crop management such as water, plant nutrients, energy, animal feed, etc. are made available within the system to ensures sustainable livelihood of farm labourers’ household provided millet farming system is integrated with livestock. Animal husbandry is an important component in the entire chain process of organic millet farming. In this self-reliant system, livestock (cow, buffalo, pig, goat, sheep, chicken,etc,) recycle the millet waste and by products and in return contribute not only organic manures but also dairy products ,meat and eggs making the system self-sufficient.



Fig :Millet in hills.

Manipur agroclimatic conditions and soil profile of hill areas particularly the jhum fallow land and forest fringe tracts are very much congenial for variety of crops including millet cultivation. Cultivation of millet was in practice in hills in olden days but in low scale in jhum sites and still one finds its cultivation among tribal villages of course

in rudimentary form and that too practiced only by older generation who are aware of multitude benefits of millet as in certain villages in Ukhrul, Kangpokpi and Senapati districts. Although there are different types of millets (sorghum, pearl millet, finger millet barnyard millet proso millet, kodo millet, etc), Finger millet is common type in the entire Northeast India (Sikkim, Arunachal Pradesh, Assam, Nagaland, Meghalaya, Tripura and Manipur) . Irony is that its cultivation is mostly confined to a subsistence level only and yet to propel to a commercial scale even though millet thrive best in northeast agroclimatic conditions. Obvious reason may be that maintaining organic condition is a labour-intensive and people's perception on 'dignity of labour' in a negative way coupled with changing food consumption life style in younger generation group. In spite of many challenges, the author in his roving survey came across cultivation of Finger millet in the far-flung hilly areas stretching from Kanglatongbi forest fringe areas to Oklung in Senapati via Irang IT Road tracts practiced by Gorkha community (Chhetry,2021).

etc, minimum water requirement as the crop is rainfed), feeds of stover of millet byproduct of threshold crop's husk and beverage making processed grain leftover is good source of animal feeds. Thus, the system needs no external inputs hence self-reliant. Moreover, byproducts of millet either stover or processed grains leftover proved to be best in enhancing the quality and quantity of animal products like milk and meat. Only drawback of the millet farming system is that it requires heavy investment in terms of labour and length of time required for processing grain from the stage of thrashing to ready to serve food stage. Whatever be the challenges, as the finger millet is known for its resilience and adaptability, it is useful crop for livelihood of small-scale farmers. Further, millet is an ecofriendly and adjustable crop which can be grown either as sole crop or interspersed underneath crop with maize or Arhar (Cajanaus cajan). Mixing ability of millet with another crop enhances the productivity of land per unit area. As such millet farming is useful for food security and at the same time it conserves soil from run off loses. In addition, millet farming system may



Fig.:Integrated self-reliant Millet cultivation and processing for food.

Organic Millet farming is considered as a self-reliant but labour- intensive farming system where good number of labours are engaged right from seed bed raising, land preparation, trans-plantation, weeding, harvesting, thrashing, processing seeds for food preparation like porridges, soups, breads and even alcoholic quintessential beverage making that require skilled labourers in the art of millet farming and millet-based recipes preparation. This system meets all its requirements like organic nutrients as farmyard manure and compost through animals (cow, buffalo, pig, goat sheep

be considered as the best alternative to intensive crop farming which requires heavy input of synthetic chemicals for the management of the crops. However, it is not feasible in hill areas for the basic reason that farmers cannot afford high-cost mechanised cropping system due to hilly terrain topography and other reasons could be that hills agroecosystem are traditionally organic by default. Most importantly, millet farming if introduced in jhum fallow land, then it may prove boon in checking 'necessary evil' system of Jhoom cultivation.

Significant things associated with finger millet, also known as Ragi are many: 1. Being a climate resilient crop can be grown in nutrient poor soil using simplified agronomic practices making it suitable for small scale farmers 2. Seeds remain free from insect and disease incidence and retain viability even after a long year of storage in a traditionally maintained bamboo containers for which it is often called a 'famine crop'. 3. Finger millet is a great source of nutrients such as carbohydrate, protein fibres and micronutrients like vitamin and minerals. Also rich in Iron and Calcium and fibre and therefore it is regarded as boon to humanity for all age groups because its high calcium contents are vital for strong bones. Iron content of Ragi helps to prevent anaemia and improves haemoglobin levels. Fiber rich millet promotes healthy digestion and prevent constipation. Further, it regulates blood sugar level and therefore goods for diabetes management. Ragi's fibre and antioxidants contribute to a healthy heart and thereby reduces the risk of heart diseases. Therefore, it is used in various cultural tradition and cuisines in many Asian and African countries.

In Manipur context there is huge scope of finger millet cultivation in view of the reducing carrying capacity of Jhoom fallow land, it is high time to propel large scale cultivation of millet in all land use system such as terraced, barren fallow land and sedentary dryland in Manipur hills. Popularisation of the crop through mass awareness, motivation and subsidy seed distribution to progressive farmers as in other crops. India drives the millet revolution by organising millet-based conference/seminar/workshop/ walkathon/ millet-based food festival holding round table on millet in order to motivate production and consumption. Providing improved seed as subsidy or incentives to farming communities certainly encourage them to go for expansion and mass cultivation millet. In this context, awareness on domestic consumption on millet in some other parts of the country are made by introducing millet food in all state-owned institutions as in Punjab. Similarly, AIIMS Bhuvaneswar introduced millet diet for patients and students and in some

city's millet-based recipes dishes are the hottest items in some restaurant. Even the United Nations declared 2023 as the International Year of millet (IYM) with loud and clear message of increasing the production and consumption of millet worldwide. India made IYM a people movement to make the country a global hub for millet. The overall idea of IYM is to promote millet production and consumption to meet the nutritional requirement of people and to sustain their livelihood.

In view of the multiple benefits of Finger millet in various fronts-enhancing human and animal health, improving sustainability of environment, conserving arable land and forest resources, creating cost effective food security measures, diversification of food use habit, maintaining sustainability of self-reliant and self-sufficient farming system, etc; subsistence millet farming practices that too confined in some pockets of hill areas in Manipur by marginal farmers in small landholdings using techniques like intercropping, crop rotation, integrating the system with livestock, etc. need further intensive sensitization, attention, awareness and motivation for mass cultivation of finger millet in all land use systems in order to make prosperous, green and healthy Manipur. As the system is labour intensive, dignity of labour contributed by villagers for the welfare of the society deserve appreciation, honour and respect. Therefore, propelling millet farming awareness in all its forms and manifestations making it people's movement akin to the seed sowing and harvesting fest of indigenous communities is the envisaged idea conceived for meeting the sustainable livelihood of farm labour force using millet as the future food.

Reference

Chhetry, GKN 2021 *Kodo-miracle food security crop in the hills of Manipur. The sangai Express*, 20/12/21.

Geographic Distribution and Spread of HIV/AIDS in Manipur

*Dr. L. Basanta Singh
Asst, Professor, Department of Geography,
Pravabati College, Mayang Imphal*

1. Introduction

In general, the pattern of HIV infection in Manipur follows the central place hierarchy effect in the virus infection through drug abuse by sharing needles as opposed to a simple neighbourhood effect. This suggests that the capital Imphal city which is at the highest order rank, has the virus infection pattern is mostly transmitted through IDUs. Subsequently; it is infected to the following intermediate towns by rural-urban migration and finally cascading down to the villages by marital contact. Further, it can be explained by the fact that virus infection rate was found low especially in the urban clusters particularly in the aged group below 30 years. On the other hand, in the rural clusters infection rate was generally found higher. This signifies that the person being infected by HIV in urban areas, she/he is reported in later years, whereas, when transmitted to the spouse in rural areas (in younger age females in marriage) it is reported much earlier, especially during pregnancy and childbirth.

The majority of the infections occur at aged 21-49 years, which is a sexually active and economically productive segment of the population. The main occupation for both the patients and households generally belongs to service workers, shops and market sales workers in ILO major occupation classification. Therefore, the majority of the PLHIV (people living with HIV) in the state belong to the middle and lower-income group of the society. Occupation related mobility also is not a major cause of infections; neither that patient gets infection or ex-situ, i.e. from outside their habitats. However, once

infected at a younger age, especially the young males, they are more likely to spread the disease to other areas, especially to the rural areas, where some of them may settle down after a married life and therefore, are more likely to transmit the disease to their spouses and in turn to children (postpartum).

2. Geographic Distribution

Not like in other parts of India, the predominant mode of HIV transmission in Manipur is through IDUs or sharing of contaminated injecting equipment. A high proportion of 72 % of HIV infections was concentrated predominantly in the Valley region of the State, which is also home to more than 60 % of the population. While, in the hill districts, the population is proportionately below 40 % of the total population of the State. Likewise, in the concentration of the HIV epidemic it is also relatively low accounted for less than 30 % of the total HIV infected populations. In 2008, the Valley districts reported 17,055 HIV positives cases out of 23694 HIV positives in the State. The twin district Imphal East (including Jiribam sub-division, outside the valley) and West, though small in area it has reported higher HIV prevalence and incidence rates compared to other districts of the State. More than half of the HIV/AIDS infected populations occur in the State Capital city of Imphal East and West, which has a population density of 557 persons per km² and 856 persons per km².

The study has revealed that Thoubal district has a high prevalence rate of 1.7 per cent (next to Imphal) whereas Churachandpur district figures high in incidence rate with 4 per cent in 2004-05.

Churachandpur, Ukhrul, and Thoubal districts recorded high prevalence as well as incidence rates, these districts are situated along the Indo-Myanmar border as well as National Highway 39. Bishenpur Chandel and Senapati districts were in moderate prevalence rate category of below 1 per cent. Both low prevalence as well as incidence rate was observed only in Tamenglong district bordering Assam.

3. Geographic Spread

In Manipur, the spread of the HIV epidemic is probably due to the lack of awareness among the high-risk groups that the majority of the respondents were not aware when they indulged the risky behaviour in the past. It was found that only 29 % of the respondents were aware of the disease when exposed to risky behaviour but probably shared syringes due to the unavailability. Majority of the household received the HIV/AIDS information through media and from their patients in the family. Moreover, in the households, patients accounted for nearly 32% of the total respondents and, their drug-using status was found among the IDUs, the de-addicted drug users accounted for 21.30 %, followed by the failed drug de-addiction programme (6.40 %), and those who were still participating in the rehabilitation programme, as well as respondents continuing drug substitution therapy, were 2.10 % each respectively.

At the beginning of the HIV/AIDS epidemic in Manipur, the HIV infection in the state is mostly concentrated in urban areas. Later, it started to diffuse to the outside urban areas, especially through sexual contact. Therefore, in the urban clusters, HIV is primarily infected among the IDUs (around 60 %) whereas, in rural clusters, it is transmitted to the spouses of the drug users via sexual contact (87 %). Further, this is evident that all household respondents were permanent settlers in urban and outside urban areas in their respective homes. It is obvious that Golden Triangle is a prime node, the maximum occurrence of HIV infection in the valley region is primarily due the unplanned urbanisation process of the State, and the drug abuse-related infections do not occur due to

the rich and profligate lifestyles as is generally perceived, but rather in the lower echelons of the society. Further, the study also revealed that the general pattern of HIV diffusion in Manipur is in the form of the outward radial pattern corresponding to the transportation network of the State. The hierarchical pattern of disease diffusion is more prominent than contagious diffusion in Manipur.

In fact, stigma and discrimination fueled the epidemic intensity that still observed in some section of the population in Manipur. This is due to lack of education and awareness of the disease and found higher particularly in rural areas. The study suggested that there is a higher degree of discrimination and stigmatisation in the Muslim (Meitei Pangal) community of the valley region. Likewise in the Christian dominated hill areas of the state, stigmatisation was still occurred and no evidence of declining the trend. Majority of the households were cautious of the disease by testing blood samples, counselling their vulnerable youths, monitoring their behaviour, checking needle use and blood transfusion. Around 79 % of the households monitor their children to behave in a proper way to prevent the disease. In terms of blood supply through the hospital or any NGOs, patients had to manage themselves by any means. Majority of the urban respondents (around 71 %) was satisfied with the treatment they received both from the Govt. and NGOs. On the other hand, in rural areas, it was found less satisfactory (27 %) because of poor economic condition and lack of facilities in the villages. Further, majority of the respondents (80 %) feel confident in their day today normal life, and the only (20 %) suffer inconvenience in their daily activities. Besides, the social barrier still exists among the general population due to the stigma attached to the disease.

4. Conclusion

Based on intensive field experiences, fieldwork and perception on the ground reality one may come to the following conclusions that physical proximity of Manipur to the neighbouring drug region of South East Asia has a definite

contribution to the menace of drug abuse in the State. The spatial variation in the HIV infection pattern in Manipur is primarily corresponding with the transportation network of the State, especially the Highway 37 and the urbanization process of the state, particularly around the Capital Imphal and its surrounding valley region. Drug abuse is a peer-led activity of the youths in urban areas that out of 33 urban centres in the state 31 lie in the valley alone in 2001 census. Moreover, a large concentration of drug users in the valley is due to not only its urban centres but also it is the outcome of the improper education system of the state during the last three or four decades. Further, the internal movement of the people in the state is especially the rural-urban migration and predominantly the males help in the drug-related infection. However, increasing intensity of disease detection in hill districts reflects the Golden Triangle's role as a general diffusion centre. Therefore, maximum concentrations of HIV occur at the upper urban hierarchy and it reduces accordingly with the smaller towns. Thus, Shifts in trade, transport, and communication networks facilitate the diffusion of IDU and its associated HIV.

Finally, it is a well-known fact that the ethnic groups play an important role in the mechanism of drug trafficking through the Golden Triangle and in these drugs producing areas the predominant settlers are hill dwellers or tribes and the plain dwellers. The tribal ethnic groups of Manipur were more or less similar to the ethnic people of Myanmar, Thailand, Lao Republic and China. Evidently, the ethnic groups such as Tribes of Naga, Kuki and Mizo sub-groups (Kuki-chins) are hill dwellers along the border with Myanmar.

References

- Beyrer, C. et al., 2000. Overland Heroin Trafficking Routes and HIV-1 Spread in South and South-East Asia. *AIDS*. 14(1) Pp. 75-83.
- Binalakshmi, N. M., 2007. Armed Conflict, Small Arms Proliferation and Women's Responses to Armed Violence in India's Northeast, Heidelberg Papers in South Asian and Comparative Politics, <<http://www.sai.uni-heidelberg.de/SAPOL/HPSACP.htm>> (last accessed on 1/3/2010).
- Choubey, K., 1998. AIDS Epidemic in India: A Study in Geographical of Health. *National Geographer*. 23(1). Pp. 58-65.
- Ghosh, J., 2002. A Geographical Perspective on HIV AIDS in India. *The Geographical Review*, 92(1). Pp.114-126.
- Gould, P., 1989. Geographic Dimensions of the AIDS Epidemic. *The Professional Geographer*. 41. Pp. 71-78.
- Khomdon, L., 2006. Changing Scenario of HIV/AIDS: Issues and Challenges Souvenir, Manipur State AIDS Control Society. World AIDS Day. Pp.1-5.
- Manipur State AIDS Control Society, Govt. of Manipur. 2006-2007. Annual Report.
- Manipur State AIDS Control Society, Govt. of Manipur. 2007-2008. Annual Report.
- Manipur State AIDS Control Society, Govt. of Manipur. 2011-2012. Annual Report.
- Mayer, J. D., 2001. Medical Geography. In Smelser N. J. and Baltes P. B. (Eds). *International Encyclopaedia in Social and Behavioural Sciences*. 14. 9518-9523.
- NACO, 2001. Current Status and Trend of HIV/AIDS Epidemic in India. New Delhi Ministry of Health and Family Welfare, National AIDS Control Organisation.
- NACO, 2008-09. Department of AIDS Control, Ministry of Health and Family Welfare, Govt. of India. Annual Report.
- NACO News, Jan-Mar 2009. Hopes Soar with Second Line ART. 4(1). p.7.
- Nina, et al., 1996. Spatial-Temporal spread of the AIDS epidemic, 1982-1990: A Correlogram Analysis of four Regions of the United States, *Geographical Analysis*. 28. Pp. 93-107.
- Oppong, J. R. and A. Harold., 2010. Disease, Ecology, and Environment, In Brown, Tim, Sara McLafferty and Graham Moon (eds). *A Companion to Health and Medical Geography*, Blackwell Publishing, 2010. Blackwell Reference Online. 23 August 2010. <http://www.blackwell-reference.com/subscriber/tocnode?id=g9781405170031_chunk_g97814051700316>
- Park, K., 1995. Preventive and Social Medicine. Jabalpur: M/s Banarsidas Bhanot.
- Rockett, Ian, R.H., 1999. Population and Health: An Introduction to Epidemiology, *Population Bulletin*. 54(4). Pp. 3-6.
- Shannon, G. W. and G. F. Pyle., 1989. The Origin and Diffusion of AIDS: A View from Medical Geography. *Annals of Association of American Geographers*. 79(1). 1-24.
- Shannon G. W. et al., 1991. The Geography of AIDS: Origins and Course of an Epidemic. New York: Guildford Press.
- Thomas, J. and M. Bandyopadhyay., 1999. Ethnic Minorities and their Vulnerability to AIDS in a Border State of India. *AIDS Care*. 11(1). Pp. 45-50.

Life in DIPR

Wangkeimayum Bhupendra Singh
DIPR

A State government employee in Manipur follows a 5-day work week, from Monday to Friday. A typical day for a government employee of the State involves a standard office hour of 9 am to 5:30 pm (summer season) or 9 am to 5 pm (winter season). As government employees, almost all of us enjoy a structured day or routine throughout our service period.

Like anywhere else, Manipur government employees also face both advantages and challenges - a life characterized by a blend of security and limitations, stability and boredom. If a government employee enjoys financial stability, sufficient to enjoy a comfortable life with retirement benefits, there is also the issue of limited growth.

I joined the Department of Information and Public Relations, Manipur as an Information Assistant in the latter part of 2016. During these years in the department, I have realized that our field staff enjoys certain advantages, if I may say so, over our counterparts from other departments.

The DIPR functions to inform and educate people about the welfare and development activities undertaken by the Government. DIPR also provides feedback to the Government about the opinion of the people and their reaction to the policy, programmes and activities taken up by the Government.

As an Information Assistant, one of my primary role has been to follow the VIP, at whose office I am attached to, on official tours and issue Press Releases of the official engagements and programmes. Attached to some of the most high-profile offices since my joining office, I have been fortunate enough to visit almost all nooks and corners of the State.

My work has taken me to destinations with unmissable experiences across the State. Inspiring both awe and envy amongst many of my friends from outside the department and colleagues, I continue to bookmark and punctuate my days with trips and tours to little known hamlets and town, down narrow paths and offbeat tracks, through wilderness and across rivers which snake through the State's mountainous landscapes.

And each trip, no matter how long or short, has enriched my own story, provided me with opportunities to broaden my own perspective about people and open doors to new cultures, traditions. With each trip, I have enriched my own story by shaking hands with new faces, dining in strangers' kitchens, turning them into friends and forging new relations. I have enjoyed diverse cultures and lifestyles along the way to make my own stories interesting and lively.

During these official visits, we usually stay with the local villagers since there are not many paid accommodations available in the interior villages. We have not only shared their homes and food during our stays, but also enjoyed the rich cultural tapestry of the many indigenous communities co-existing in the State. Every visit to these villages has also been marked by overwhelming love and trust from the local populace we meet.

Manipur is a beautiful state, a bountiful state, gifted naturally by God. Manipur has a plethora of scenic and awe-inspiring spots which could attract tourists, both domestic and international.

Of the many places I have been to, Yangkhullen Village or more appropriately the Hanging Village of Manipur is one village that has amazed me beyond words. Inhabited by the Zeme tribe, it is located just about three and a

half hours drive from capital Imphal, some 137 km from Imphal in Senapati District.

Yangkhullen's peculiarity that attracted my immediate attention was the fact that the village, built on the very steep slopes of the mountain, has no roads, but stairs - small, steep, flat stone stairs, connecting one house to another. Some of the stairs have railings, but many didn't. The houses are also built on foundations of flat stones placed one above the other.

Another attraction was the presence of several stone monoliths sporadically standing along the mountain range housing the village.

The allure of the state's diverse landscape, magnificent tradition and rich historical past is indeed captivating and enticing.

Behiang, a sleepy village in Churachandpur district, serene, calm and far removed from the hustle-bustle of city-life, lies along the international border with Myanmar. In 2022 our team had stayed in Behiang for two-nights and three days.

Despite its remoteness, Behiang (about 122 km from the state capital), considering its strategic location, has all the potential of being a second gateway to South East Asia or trade center after Moreh in line with the country's Act East Policy. The Tiddim Road also passes through Behiang before snaking its way into Myanmar.

Machi, nestled among the clouds, on the top of Tegnoupal district is another village. I experienced an unforgettable incident at Machi, when during a dance recital at a formal function, I witnessed an elderly woman teaching her teenage granddaughter the nuances of their traditional dance. As the woman was teaching her to step in rhythm with the traditional drum beats, the young girl was filled with giggles - a precious moment filled with warmth, laughter, and love.

Another memorable trip had been the one to Khayang Village in Ukhrul accompanying an official team inspecting the 103 km long road from Shirui Village to Kachoupung Village. We started at 5am and reached Ukhrul around

7:40am and after having some breakfast started the second leg of the journey to Kachoupung. After some stops along the way, we reached the village around 5pm. We made the return journey the same day and reached home at 5am the next day.

There are many more villages and hamlets where I have made memories and experienced a blend of natural beauty and cultural hotspots. The beauty of such trips was that wherever we landed we were welcomed with open arms. The villagers have always been friendly, welcoming.

From the higher altitudes of the state's own hanging village Yangkhullen and meadows of the Dzuko Valley in Senapati District to the vast Loktak Lake filled with floating huts and fishermen in the Imphal Valley combined with the vibrant hues of the rich cultural tapestry of the many indigenous communities, Manipur can offer any traveller or tourist a captivating experience. And I am grateful that being in DIPR has enabled me to visit and enjoy many of these places.

“Persistence yields greater success.” From Rs. 2000 Investment to Earning Rs. 4–5 Lakhs a Year - The Story of Surendrajit

*Bijoy Laishram, (Senior Sub Editor), Hueiyen Lanpao
Translated By- Atboibee Kakchingtabam, Journalist, DIPR*

With limited options for regular income and the belief that a government job is not the only path to a stable livelihood, Sairem Surendrajit from Taretkhul Awang Leikai has shown what is possible through sheer determination and hard work.

Surendrajit initiated his farming venture with a mere Rs. 2000 investment in growing American Peas (a pea variety), earning a profit of roughly Rs. 7,000, which encouraged him to expand his efforts.

Over time, he began cultivating cauliflower on half a hectare of land and ‘Maharaj 99 Chingjin Thabi’ (a variety of cucumber), easily yielding up to Rs. 4 to 5 Lakh profit annually. Surendrajit emphasizes that with proper guidance and consistent effort, any crop can be profitable. “It is not about what you grow,” he says, “it is about how well you care for it.”

Hailing from Taretkhul Awang Leikai, Imphal East district, Surendrajit is the son of Sairem Rabi and Sairem (O) Memma. He completed Class XII in 2002 and later left his BA studies to pursue entrepreneurship. His journey started with poultry farming, but it was agriculture that ultimately became his calling. He began farming American Peas on his field (Lou Sangam Ama) by the banks of the Iril River in the year 2006, which profited about Rs 7,000.

After his first successful pea harvest, he began cultivating watermelons in 2007, earning a profit of around Rs. 35,000. He followed that with cauliflower and bottle gourd, adding another Rs.

75,000 to his earnings. His entrepreneurial spirit led him to invest in cattle breeding, purchasing two Forsan cattle for Rs. 20,000 each, which he later sold. Surendrajit sold his produce at Imphal’s Kwairamband Bazar and Khurai Lamlong Bazar. He also found (Chara Tambi Pumkin) proceeds in its first harvest.

As his reputation grew, vendors began sending diesel autos directly to his farm to collect large quantities of vegetables. Buyers came from as far as Saikhul to purchase his crops. By 2008-2009, his pumpkin (Chara Tambi Mairan) cultivation alone had earned him Rs. 2 lakhs in profit.

With his growing income, he purchased a tractor to expand his farming operations and added rice cultivation to his business. During the off-season, he continued to grow other crops, ensuring year-round productivity.

Despite setbacks during the COVID-19 pandemic, farming activities were not halted. Crops like cauliflower, best suited for November, were followed by cucumber cultivation, creating an ongoing cycle of seasonal harvests, he stated

During the COVID-19 pandemic, when many farmers were hit hard, Surendrajit’s resilience allowed his business to continue. By focusing on seasonal crops like cauliflower and cucumbers, he maintained a steady flow of income.

After harvesting his cauliflower, he rotated the crops with cucumbers, which required meticulous work, from preparing the soil by ploughing ten times, harrowing into a seedbed, tilling with NPK fertilizers, to building trellises

for the vines to climb. The cucumbers cultivated on March 5th last year were harvested in May of the same year. It yielded about 1000 kg in its first harvest and had sold more than 4000 kg, he quoted.

Surendrajit hired daily wage laborers at Rs. 450-500 per day to assist with weeding, harvesting, and other tasks. His cucumbers were taken to markets in Imphal, including Nagamapal, and sold wholesale at Rs. 20-21 per kilogram.

He believed that the youngsters should not depend on government jobs, but rather take entrepreneurship to empower themselves and the livelihood of the state. He further said that “We will be independent if our food is self-sufficient.”

Surendrajit’s success story is a powerful reminder that with hard work, proper planning, and a willingness to adapt, anyone can turn a small investment into a thriving business. It is a testament to the potential of agriculture as a sustainable livelihood. For a self-reliant Manipur, the government must focus on improving irrigation systems to support farmers and ensure greater productivity.

Watermelon Warriors: How 11 Students Grew a Movement at Manipur University

Ksbetrimayum Premchand
Chief Reporter, SKTV News

Canchipur, Manipur – In an era where the race for white-collar jobs dominates the aspirations of most university students, a group of eleven hostel residents at Manipur University is rewriting the narrative. These young scholars, armed not with agricultural degrees but with willpower and wisdom drawn from literature, have transformed over two acres of wild, overgrown land on their university campus into

ignored or sold off, these students are showing that the path to self-reliance might just begin at one's doorstep.

Inspiration Born in the Classroom

The seed of the idea was planted during a literature class, where students were studying Sovietki Leibakta, by Nongthombam Kunjamohon. A part about the importance of



a flourishing watermelon farm. Their message is clear: youth can build their own future with what they already have: land, unity, and the courage to start.

This remarkable grassroots initiative has sparked admiration across the state, not only for its productivity but for its powerful symbolism. At a time when unemployment remains a pressing issue and agricultural land is either

mixed farming and not letting land lie idle struck a deep chord with Wahengbam Suraj, a student of the Department of Manipuri.

“It changed how we saw our campus,” he says. “There was land all around overgrown, ignored, and full of potential. We realized we could either keep waiting for job offers or start doing something right now, right here.” He shared the thought with classmates, and soon,



a core group of eleven students from various departments: Manipuri, Management Studies (MIMS), Human Rights, DVSSD, and South East Asian Studies formed what would become an unlikely but determined farming collective. They called themselves the PG Farmer Group, a name born from their WhatsApp coordination channel.

Meet the Super 11:

- Subhachandra Asheibam – 2nd Semester, South East Asian Studies
- Kshetrimayum Naocha – 4th Semester, Manipuri Department
- Naorem Luxmikanta – 4th Semester, Manipuri Department
- Dingku Ningthoujam – 2nd Semester, DVSSD
- Oinam Telheiba – 4th Semester, Manipuri Department



- Atkins Yengkhom – PG Diploma, Human Rights Studies
- Laishram Sanathoi – 4th Semester, Manipuri Department
- Wahengbam Suraj – 4th Semester, Manipuri Department
- Laishram Chandramani – MIMS
- Chongtham Bishanta – 4th Semester, Manipuri Department
- Phairembam Bishorjit – 4th Semester, Manipuri Department

A Plan Fueled by Action, Not Money

Unlike most ventures that wait for funding or institutional support, this one took off through sheer self-reliance. The students received no external funding. They pooled their own money

Naocha's background gave the group a practical edge.

"Back home, I helped my parents grow vegetables and seasonal crops," Naocha shared. "That experience really helped us decide how to prepare the soil, when to water, and how to deal with pests. I'm not an expert, but I knew enough to avoid some beginner mistakes."

More importantly, the group made a conscious decision to avoid chemical fertilizers altogether.

Instead, they turned to an innovative and eco-friendly alternative: phumdis (floating biomass) collected from Loktak Lake, Manipur's largest freshwater lake. Traditionally seen as waste, phumdis are rich in organic matter and serve as a natural fertilizer.

"We collected phumdis and used them to enrich the soil," Naocha explained. "It's



for seeds and basic tools and refused to hire laborers, choosing instead to clear the dense campus vegetation themselves.

One key advantage the group had was the agricultural experience of Ksh Naocha, a member of the team who had worked on his family's farm before joining university. While most of the students were new to farming,

all natural, and we saw great results without needing any chemicals. Plus, it's part of our local ecosystem, so it made sense to use what's already available in our environment."

Their decision to use phumdis not only helped improve soil health but also reflected a deeper commitment to sustainable farming practices.

The team believes that chemical-free produce is not just better for the environment, but also for the consumers who support their initiative.

But the farm isn't just about watermelons. The group has also started growing tomatoes, beans, and other short-cycle crops in selected areas. These crops, like watermelons, can be harvested and sold quickly, helping generate income and keeping the land in continuous productive use.

"This kind of farming doesn't need to wait for years to earn something," said one member.

"Even students can manage it alongside their studies."

Reaping the First Fruits of Labor

On May 4, the group held their first sale and it was a runaway success. In a single day, they sold more than 600 kilograms of freshly harvested watermelon to fellow students, university staff, and nearby residents. The response was overwhelming, and orders quickly outpaced supply.

But it was on May 11 that the full impact of



their work became clear. That Sunday morning, even before the harvest was laid out, buyers began lining up in long queues, some arriving with bags and baskets in hand. Word had spread across the campus and surrounding areas about the quality of the watermelons, and people were eager to buy directly from the source.

In a single day, the group sold over 1,700 kilograms all from their field, without setting up a stall in any market or by the roadside.

"We didn't have to go anywhere. People came to us," said one of the students. "They walked right to the farm, waited in line, and bought everything. It was incredible."

The scene was a quiet revolution: students selling farm-fresh, chemical-free produce straight from campus, with no middlemen, no advertising banners, just trust, quality, and word of mouth. It was not only a successful harvest but a moment of pride and proof that good work draws its own audience.

Filling the Gap Left by the Job Market

While government recruitment drives and corporate placements remain sluggish, the PG Farmer Group is carving out their own livelihood. They are not rejecting formal employment they are refusing to wait passively for it.

"Youth unemployment is one of the biggest issues in our society. Everyone is waiting for a white-collar job, but there are limited seats," said one student. "Meanwhile, there's land everywhere unused, overgrown, or turned into dumping grounds. Why not farm? Why not start small?"

In Manipur and other parts of the Northeast, this statement hits home. Land is often underutilized, and younger generations are moving away from agriculture in favor of city jobs.

These students are turning that trend on its head, showing that agriculture can be both practical and empowering, even for educated youth.

A Vision Rooted in Sustainability

Beyond the impressive yields and sales figures, the group's vision is far more long-term. They believe in promoting sustainable farming, campus-level food production, and youth-driven change. Their success is a living example of the "Grow Local, Eat Local" movement, and they are already discussing plans to expand into other crops, including seasonal vegetables and herbs.



They've also caught the attention of their peers, some of whom have expressed interest in joining or starting similar initiatives. "If every department, every campus in the state used even a fraction of its unused land for food production, we'd not only reduce our dependence on imports but also create job opportunities," Naocha notes.

Planting the Idea of Self-Reliance in Young Minds

Their story is not just about melons. It's about mindset. These students have demonstrated that you don't need advanced tools, massive funding, or government permission to bring about change. What's needed is commitment, teamwork, and the ability to see potential where others see weeds.

"This shows that unity, hard work, and discipline among youths can truly achieve something meaningful," said Oinam Telheiba.

They hope their work will inspire youth across the state and the country to reimagine selfemployment.

"Start with what you have," says one of the

members. "Don't wait for the perfect job or ideal condition. Whether it's farming, a small trade, or any skill you have, use it. Build something."

A Growing Vision

The impact of their work is already extending beyond campus. Dingku Ningthoujam shared his future plan: "In my hometown Kakching, near the Sekmai River, there's a lot of unused land.

I'm planning to lease it annually and start



multi-crop farming. Whether with this group or new members, I want to continue this journey."

The group's goal isn't just farming, it's about creating awareness, building discipline,

promoting local production, and inspiring others to take ownership of the land and opportunities around them.

As Dingku puts it, “We may not be able to produce everything we need but we can definitely grow some of it. That alone is a powerful start.”

Beyond Books: The Real Value of Education

Interestingly, this initiative emerged from a literature class not from an agricultural or business course. That irony is not lost on the students. “Education should not only be about passing exams,” says Suraj. “It should inspire action. That’s what Professor Subash did, he didn’t tell us to farm, but he made us think. And that thinking turned into doing.”



By applying their academic learning to real-life challenges, the students are bridging the gap between classroom theory and practical application. This model of experiential learning, grounded in social responsibility and environmental awareness, may very well be the future of holistic education.

Looking Ahead: Scaling and Sustainability

The group now has their sights set on expansion. They are exploring ways to rotate crops, improve irrigation, and even include

nearby community members in the venture. Their long-term dream is to create a cooperative model that can be replicated across other universities and rural youth groups in Manipur.

They also plan to raise awareness on food sovereignty, encouraging people to grow what they eat and reduce dependency on long supply chains, especially in times of crisis.

But even as they look ahead, they remain grounded in their mission: to turn idle land into opportunity.

A Model for the Future

The PG Farmer Group of Manipur University may have started with watermelons, but what they’ve grown is far more significant. They’ve cultivated a mindset of dignity in labor, self-

sustaining livelihood, and youth leadership. They are proof that with unity and initiative, young people can turn even the smallest patch of land into a foundation for independence.

As the sun sets over the fields of Canchipur, one thing is clear: this is more than a harvest. It’s a movement rooted in the soil, and rising with hope.

City Farming and Space Utilization: Key to Resilient Urban Development

Dr. Senjam Jinus

The world is experiencing rapid urbanization, with the urban population predicted to reach two-thirds (68%) of the world's population by 2050. This growth will put pressure on traditional agricultural systems, as cities expand and farms are swallowed up by new developments. In Manipur, similar examples of this can be seen in the loss of lakes like Keishampat, Thangapat, Sangaipat, Akampat, Takyelpat, Kakwapat, Awangpat, Poiroupat, Thongrabipat, Lamphelpat, Lampha-Pat (Khumbong) and Porompat due to modern development, and Loktak Lake's surrounding

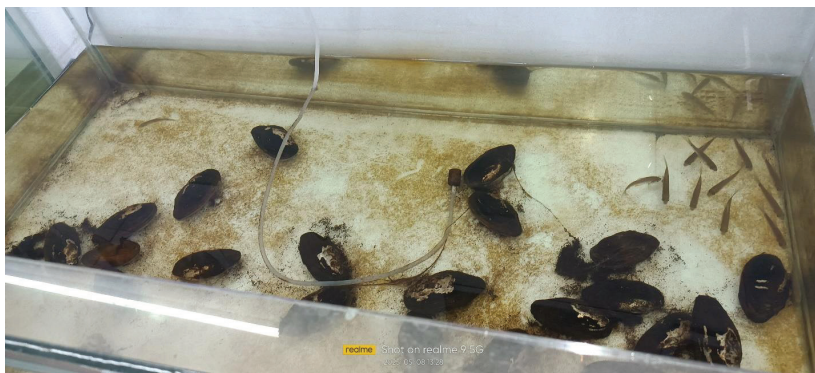
beekeeping, aquaculture (fig. 1), pearl farming (fig.2), mushroom cultivation (fig.3), composting, and agroforestry. However, urban areas face numerous threats, such as natural disasters, pandemics, flooding, and food insecurity, which are exacerbated by climate change, population growth, and conflicts. The vulnerability of cities to supply chain disruptions was evident during the COVID-19 pandemic, and ongoing conflicts in Manipur and potential escalations may further disrupt supply chains. Therefore, cities must take prompt measures to prepare for future crises.



farms may also be consumed by cities in the next 30 years. As a result, farmers will need to adapt to urbanized land use policies or relocate, leading to the emergence of cities framing. Urban farming includes a range of practices, including soilless horticulture (fig. 1), rooftop cultivation,

Manipur's cities face challenges in ensuring a resilient food supply chains. Some culprits are: limited land availability, unfavorable terrain, population pressure, immigration, and soil degradation due to excessive fertilizer use, poppy

cultivation, water scarcity, and inadequate access to modern farming inputs, economic instability caused by conflicts, trade disputes, and political uncertainty affect food and nutritional security. Securing enough nutritious food is crucial for urban resilience. Cities rely on external food supplies, which are vulnerable to environmental, economic, social, and geopolitical stresses, leading to supply disruptions and price increases that severely impact urban consumers, especially the urban poor. Increasing local production and developing



shorter supply chains can reduce disruptions, enable circular systems, and decrease dependency on external inputs. Diversifying sources can provide backup capacity and improve the ability of food systems to adapt to shocks. Urban agriculture can increase city resilience by strengthening food systems.



Urban Agriculture (UA) presents a viable solution for Imphal City by using available spaces such as unused rooftops, vacant lots near public areas, school campuses, worshipping places, and local community halls. This approach not only reduces reliance on lengthy supply chains but also supports local biodiversity and optimizes resource use. By combining technology, architecture, and innovative farming practices, UA can significantly boost food production while beautifying urban landscapes. Specifically, UA can tackle food deserts in areas like Keishampat, Sagolband, Keishamthong, Uripok, Thangmeiband, and others by providing fresh produce, empowering communities, and cutting transportation costs. This initiative enhances public health through access to nutritious food and opportunities for physical

activity, potentially lowering rates of non-communicable diseases. Moreover, UA builds community cohesion, promotes proactive attitudes, and encourages collaboration, enabling residents to better navigate challenges. Urban farms can also create jobs, alleviate poverty, improve air quality, and reduce urban heat island effects. Furthermore, the green spaces provided by UA can help mitigate climate change impacts and promote sustainable waste management, ultimately contributing to a more livable and sustainable Imphal City.

City Farming Models:

City farming includes various models, each with unique benefits. Community gardens are shared spaces where residents grow food together, building community spirit, promoting education, and increasing access to fresh produce. Rooftop agriculture transforms unused areas into productive spaces through container farming, vertical gardens, or hydroponics, improving air quality and urban biodiversity. Large-scale rooftop farms offer an innovative approach, incorporating high-density container planting of high-yield crops like tomato, brinjal, onion, ginger, dragon fruits, strawberries, potato, grapes, dwarf

mango, orange, lemon, papaya and banana. This approach provides fresh food to local communities, reducing transportation needs. Other models, such as indoor farming and commercial vertical urban farms, contribute to urban agriculture's diversity. Each model requires specific conditions and a strong community for successful implementation and sustainability. By using these approaches, urban areas can become more self-sufficient and resilient.

Food Resilience Initiative in other Countries, India and Manipur:

City farming is growing globally, with innovative projects transforming cities. In Singapore, the Sky Greens Tower Project uses



vertical hydroponics to harvest crops every 28 days, while Citiponics operates rooftop farms on parking lots, producing 4 tons of vegetables monthly. The Hi-Tech Agri-Cluster aims to triple production capacity in a traditional farming area. In India, the Dream Grove project converted a public park into a farm with over 50 varieties of edible plants, and Triton Foodworks runs 150,000 square foot vertical farms, growing over 20 crops. UrbanKisaan focuses on chemical-free agriculture and water conservation, cultivating over 50 crops. In Germany, Infarm's modular farms in supermarkets and restaurants reduce transportation emissions. The UK's Eden Green Technology employs automated hydroponic systems on rooftops. AeroFarms in the US uses aeroponic technology to save up to 95% water, while Lufa Farms in Canada built rooftop greenhouses for year-round production. In Latin

America, Huertas Urbanas de Medellín engages communities in public space farming, and Mexico's Cultiva Ciudad promotes educational urban gardens to tackle food insecurity.

In Manipur, innovative cities farming initiatives are blooming. Eleven students from Manipur University cultivate watermelon on a 2-acre campus land. Pioneers like Khogen Sharma grow mushrooms (Kanglayen, Shittake, and Button) in Thambal Leima Mycelia farm at Khongman. Dr. Asem Robinson and Dr. Potsangbam Jolly, founder of Thaddaeus Nutraceuticals, also farms Oyster mushrooms in Kakwa. Dr. Senjam Jinus, founder of Farming Alternatives and Resilience Management School and a teacher at the School of Agricultural Sciences, Manipur

International University, promoted soilless farming through demonstrations and lectures over the past decade. Dr. Ajit Kumar Ng, Dean of the School of Biological Sciences, has initiated pearl farming in Manipur, utilizing rooftop space. Right at the heart of Wangkhei Thangjam Leirak, Yumnam Rajeshwor Singh and

his team pioneered the way by launching the first-ever micro-green farms. In a remarkable achievement, Tomba Khundrakpam successfully cultivates expensive-saffron in Manipur's subtropical climate using climate-controlled methods in a small space. These few initiatives highlight cities farming's potential to address food security, sustainability, and urbanization challenges, offering innovative solutions for the future.

Dr. Senjam Jinus serves as faculty member at the School of Agricultural Sciences, Manipur International University.

A brief note of KEDO

KEDO – Birds eye View

With the sense of promoting work culture in Manipur Kanglei Economic Development Organisation (KEDO) was established 20 April, 2007, MOTTO of KEDO is work for identity.

It is said that “No Culture, No Identity”. But without work culture no community can develop. In short, work culture is the backbone of all cultures. A community is known by its

members were involved in KEDO and faced difficulties to replace the manual works done by the non-Manpuris by own members due to certain misunderstandings. Very shortly all the misunderstandings were easily clarified and the KEDO members picked up almost all manual works done earlier by the non-locals. Members of KEDO also increased by leaps and bounds from 20 to 200 within 5 years.



work culture and its identity is shown by the work done by the community.

Manipur is known to the rest of the world by its Art and Culture. On the other hand, work culture is not up to the mark. However, during recent years some progressive educated youths are coming forward and set up their own ventures thereby not only giving themselves self-employment but also giving employment to other unemployed counterparts and earning income. It is a good news.

At the very beginning only about 20

Safe guarding of Ima potpham during night time, not to consume/use any kind of intoxication, well disciplined, paying respect to senior members, not allowing to leave duties without consent of authority, joining of class on every Sunday from 8 am to 10 am by wearing KEDO uniform and following the instructions of Seniors etc. are some of the main rules and regulations of KEDO to be followed by a fresh member.

After establishment of KEDO, manual works done by non-local in and around Khwairamband



Keithel have now been replaced by our indigenous youths. Manual works like (i) Hair Cutting (ii) Carrying of goods of Ima Potpham phambi (Women vendor) (iii) Guarding of potpham during night time, (iv) Selling of Ice



Cream, (v) selling of Pop – corn (vi) Processing and selling of Sugarcane Juice, (vii) Preparation of tea and selling to Ima Markets, (viii) Selling of Tandum Macha (Pani – Puri), (ix) Preparation and selling of Momo and Chicken Samosa, Chicken biryani, Chicken chow etc. are done by KEDO members. About 200 KEDO members are fully engaged in the above different activities since 2007 till date. Besides the above activities, KEDO Members who enrolled themselves are also involved in cleaning of Khwairamband

Ima Keithel almost every day. By stopping their own activities, KEDO members performed Social Service in an around all 4 Ima Keithels and Lamlong Keithel specially in every 'Nongma Panba' (last day of month) of a month for keeping neat and clean, throughout the year, Even though they (KEDO MEMBERS) were little bit feeling shy at the beginning, but after associating themselves and performing their activities regularly, feel themselves proud while discharging their duties in broad day light in front of public and automatically vanished their shy. Our members can enjoy dignity while performing their duties.

KEDO can earn write success stories of our members. Almost all the members of KEDO belong to below poverty line. After becoming member of KEDO and acquiring training about three months for knowing rules and regulations of KEDO, can even daily income from the fourth months onwards.

Many members of KEDO can stand on their own foot by earning hard money in day and night.

While sleeping also our members can earn money as they are safe – guarding properties of Ima Potpham phambis during night time and they (Ima) give money for safe – guarding their potpham to our members.

Our members can earn sustainable income and can construct their houses, feed family members and take care of their parents and become exemplary individuals at their locals.

KEDO is keeping sound relations with Manipur Police, Fire Service, Imphal Municipal Corporations and Ima Potpham Phambis etc and can successfully run our organisation for the last 18 Years with their support.

KEDO warmly welcomes any youth who is willing to become a member and earn income by discharging his duties as done by earlier members. However, a fresh member should strictly follow the rules and regulations framed by KEDO.

Working with Dignity

A Perspective on Manipur's Workforce

Birendra Laishram

Working with dignity ensures individuals engage in work that respects their inherent worth, autonomy, and well-being. Encompassing fair treatment, safe conditions, equitable compensation, and growth opportunities, it's a fundamental human right vital for a life of self-respect. Dignified work enhances well-being, motivation, and productivity. Prioritising dignity reduces inequality, fosters fairness, and cultivates trust, attracting talent and strengthening organisational reputation. Key elements of work with dignity:

1. Fair compensation: Equitable pay and benefits.
2. Safe working conditions: A safe, healthy, and comfortable work environment.
3. Respectful treatment: Dignified treatment by supervisors, colleagues, and clients.
4. Autonomy and control: Opportunities for decision-making and autonomy.
5. Growth and development: Opportunities for skill development, training, and career advancement. By prioritizing work with dignity, organizations can create a positive work environment, promote worker well-being, and contribute to a more equitable society.

The Reality of Works in Manipur

The workers in private sector work in agriculture, handloom, construction, healthcare, securities, and housekeeping. The public sector workforce comprises government employees on regular, contract, or daily wage bases. While private institutions often offer better working conditions with inferior wages while government institutions generally provides better in both.

The challenges to the dignity of workers in Manipur are multifaceted and deeply rooted in

the state's complex socio-cultural and economic landscape. Some key issues include.

Ethnic and Territorial Divisions: Manipur's history of ethnic mistrust and territorial disputes has led to violent conflicts, displacement, and loss of livelihoods. The ongoing Kuki-Meitei violence, for instance, has resulted in significant human suffering and economic hardship-**Unequal Development:** The uneven distribution of resources and opportunities between the hills and valleys has fueled perceptions of neglect and marginalization among certain communities, exacerbating tensions and undermining worker dignity.

The marginalization of certain communities, including tribal and non-tribal minority groups, has led to feelings of exclusion and disrespect, affecting their dignity and well-being.

Manipur has witnessed numerous human rights violations, including instances of violence, rape, and murder, which have severely impacted the dignity of workers, particularly women and marginalized communities.

Many workers in Manipur are engaged in the informal sector, which often lacks adequate protections and safeguards, leaving them vulnerable to exploitation and dignity-related issues.

Manipuri women face specific challenges, including domestic violence, unequal wages, and limited access to education and healthcare, which affect their dignity and overall well-being.

The pandemic and ethnic crisis has further exacerbated existing challenges, highlighting the need for targeted support and recognition of women's identity and dignity in the workforce.

Addressing these challenges requires a

comprehensive approach that prioritizes inclusive and equitable development, resource distribution to reduce disparities and tensions.

Fostering a culture of recognition and respect for all communities, acknowledging their dignity and contributions will also address the challenges; supporting initiatives that empower marginalized groups, particularly women, and promote their dignity and well-being and conflict Resolution and Peace-building will help in encouraging dialogue and reconciliation efforts to address ethnic tensions and promote long-term stability.

Government Policies & Legal Safeguards:

The Indian government has enacted several laws to ensure the welfare of workers. Such as:

1. Social Security Acts where the Employees Provident Fund & Miscellaneous Provisions Act, 1952 providing retirement benefits, life insurance, and other benefits to employees.
2. The Employees State Insurance Act, 1948 offers medical care, cash benefits, and other benefits to employees in case of sickness, maternity, and employment injury.
3. The Payment of Gratuity Act, 1972 provides a lump sum payment to employees on retirement or resignation after completing a certain number of years of service.
4. Wage-Related Acts: The Payment of Wages Act, 1936 regulates payment of wages to employees, ensuring timely payment and preventing unauthorized deductions.
5. The Minimum Wages Act, 1948 ensures payment of minimum wages to employees in certain industries.
6. The Payment of Bonus (Amendment) Act, 2015 provides for payment of bonus to employees based on profits.
7. The Factories Act, 1948 regulates working conditions, safety, and health of workers in factories. Some key provisions include fencing of dangerous machinery to prevent accidents; protection of eyes by providing protective gear for employees working with

hazardous materials and precautions against dangerous fumes ensuring safe working conditions in confined spaces.

Safety of building and machinery: Regular inspection and maintenance of buildings and machinery.

8. The Mines Act, 1952, regulates working conditions, safety, and health of workers in mines.

Welfare Acts

9. The Maternity Benefit Act, 1961 provides maternity benefits, including paid leave and medical care, to women employees.
10. The Equal Remuneration Act, 1976 ensures equal pay for men and women performing the same work.
11. The Child and Adolescent Labour (Prohibition and Regulation) Act, 1986 prohibits employment of children in hazardous industries and regulates working conditions for adolescents.
12. The Industrial Disputes Act, 1947 regulates industrial disputes and provides for resolution mechanisms.
13. The Trade Unions Act, 1926 regulates formation and functioning of trade unions.
14. The Bonded Labour System (Abolition) Act, 1976 prohibits bonded labour and provides for rehabilitation of bonded labourers.

These Acts were in place for the safety and welfare of the workers working in government and non-government units and in other industrial workplaces to enhance the dignity of the workers.

As the worker either in government or private institutions is ignorant or unaware of these provisions, they seldom demand for these privileges including the minimum logistic needs.

Voices from the Ground suggesting way forward:

To address the grievances, All Manipur PHED Workers and Employees Association has urged the State Government to materialise the charter of demands which include regularisation of

contract and work-charged employees and also demanded to release the long pending salaries of the mentioned employees and to provide pension facilities to work-charged employees who have worked for more than five years in the Department among others.

The Joint Administrative Council (JAC) of All Manipur 'Trade Unions' Council and All Manipur Government Employees' Organisation demanded: DA/DR parity with Central Government employees from January 2023; prioritized payment of outstanding dues to pensioners/family pensioners; raising the retirement age to 62; abolishing the New Pension System (NPS) and reinstating the Old Pension Scheme; timely payment of Final GPF accumulations and all retirement benefits to confirmed work charged employees of the Engineering Department; service confirmation for eligible work charged employees and inclusion of confirmed work charge drivers in the revised Pay Matrix; an end to preferential service extensions for Secretariat Service officers; a Minimum Wages Board meeting to revise rates for casual and muster roll employees; a policy for inter-departmental transfer of Secretariat Service employees; and medical reimbursement benefits for retired employees as provided to MLAs/Ex-MLAs and their families.

To ensure workers' dignity, address the grievances by consulting relevant laws, rules, and executive orders. Employers should engage in harmonious negotiations with worker representatives to discuss possibilities and limitations to put the demands on work. This collaborative approach demonstrates respect for labourers and avoids the counterproductive consequences of suppressing employee demands to meet production targets.

Driven by profit, some investors exploit weak governance and labour practices by targeting regions with political corruption, lax tax enforcement, and inconsistent rule of law. They prioritize low rents, minimal wages, and a workforce unaware of their rights to suppress labour costs and maximize profits. Goods produced in such conditions are cheaper due

to reduced labour expenses, while those from countries with empowered, well-compensated workers are more expensive, reflecting investments in their workforce. This creates a tension between worker dignity and affordability, as improvements in working conditions often lead to higher prices.

To truly safeguard the dignity of every worker, it is imperative that the government diligently and effectively enforce the comprehensive suite of labour laws already in place. These laws act as a crucial shield, protecting workers from exploitation and ensuring a fair and safe working environment. The cornerstone of this protection lies in the enforcement of laws covering various critical aspects of employment.

Firstly, social security provisions, specifically the Employees' Provident Fund (EPF) and Employees' State Insurance (ESI) Acts, must be rigorously upheld. These laws provide essential financial security and healthcare access to workers, safeguarding them against the uncertainties of life and contributing to their overall well-being. Similarly, the Gratuity Act, which mandates the payment of gratuity to employees upon retirement or resignation after a qualifying period of service, is vital and its enforcement is paramount.

Secondly, laws about wages are fundamental to worker dignity. The Payment of Wages Act, Minimum Wages Act, and Bonus Act collectively ensure that workers receive fair and timely compensation for their labour. These laws prevent employers from exploiting workers through delayed payments, unreasonably low wages, or the denial of legally mandated bonuses. Effective enforcement prevents wage theft and ensures a basic standard of living.

Thirdly, workplace safety is non-negotiable. The Factories Act and Mines Act, along with other relevant legislation, are designed to protect workers from hazardous working conditions and prevent accidents. Strict enforcement of these laws, including regular inspections and penalties for violations, is crucial to minimizing workplace injuries and fatalities.

Fourthly, various welfare-related laws, such as the Maternity Benefit Act, Equal Remuneration Act, Child Labour (Prohibition and Regulation) Act, Industrial Disputes Act, Trade Unions Act, and Bonded Labour System (Abolition) Act, are essential for promoting a just and equitable work environment. These laws address critical issues such as maternity leave, gender equality in wages, the prohibition of child labour, the resolution of industrial disputes, the right to form trade unions, and the abolition of bonded labour. Their effective enforcement is fundamental to upholding human rights and fostering a dignified work culture.

The comprehensive application of these laws ensures worker safety and welfare across all industrial workplaces, creating an environment where employees can contribute productively without fear of exploitation or unsafe conditions. Furthermore, in addition to robust enforcement, the government has a vital role to play in educating workers about their rights under these various labour laws. Proactive dissemination of information, through accessible channels and in multiple languages, empowers workers to assert their rights and demand fair treatment, thereby actively promoting dignified work for all. Dignified work necessitates a shared sense of responsibility. Workers demonstrate dignity through punctuality, diligence, cooperation, and adherence to workplace policies. Employers, in turn, uphold dignity by ensuring adequate facilities, providing fair and timely wages, implementing mandated welfare and safety measures, and offering access to healthcare. This mutual commitment fosters a dignified environment based on consistent actions and mutual respect, extending beyond mere legal obligations.

Recognising and valuing worker dignity encourages engagement, innovation, productivity, and loyalty. On the other hand, neglecting dignity can lead to resentment, disengagement, and reduced performance, potentially resulting in work disruptions, diminished productivity, and harm to an organisation's reputation. Thus,

prioritising dignity is essential for the well-being of both workers and employers.

About the Author:

Born in Mayang Imphal, Manipur, on December 25, 1955, and later residing in Thangmeiband Thingel, and retired as Senior Audit Officer from the Indian Audit and Accounts Department in January 2019 after more than 37 years of service. His writing has appeared in the Telegraph, Articles to the Freedom, Hueiyen Lanpao, Kangleipakki Meira, the Sangai Express, and the Imphal Free-press English editions. He is also a film critic and the author of "The Farewell Cloud" (Manipuri Novel-1975), "My Second Wife" (English 40-short stories), and "Prescriptions for Happiness" (English-2024). He can be contacted at laishrambirendra1@gmail.com, biren2059@gmail.com, or 9856261976.

From Struggles to Success

The Inspiring Journey of Ningombam Ibem

Sl.No	Particulars	Details
1	Name of the SHG Member	Ningombam Ibem Devi
2	Name of SHG	Yaiphabi SHG
3	Name of CLF	Kangleipak CLF



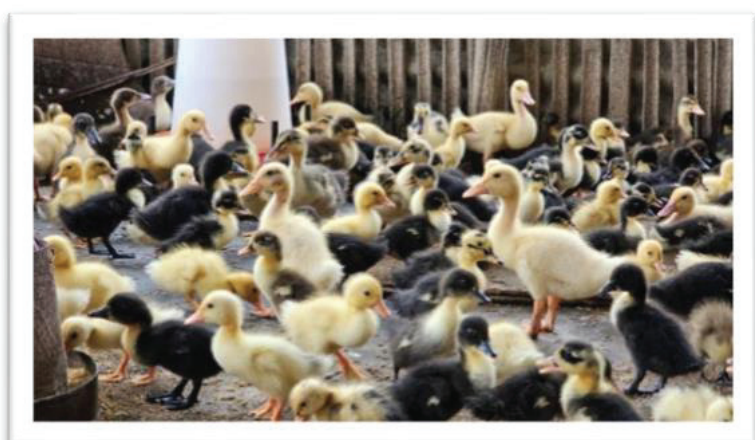
In the serene village of Top Dusara Khulam, nestled within the vibrant community of Imphal East district in Manipur, a remarkable woman named Ningombam Ibem

has emerged as a beacon of hope and inspiration. As a member of Yaiphabi SHG, formed in January 2018 under the aegis of Top Dusara VLF and Kangleipak CLF, who

are promoted by Manipur State Rural Livelihoods Mission (MSRLM), her story exemplifies the transformative power of self-reliance and determination.



Ningombam Ibem's journey began with a humble start. Facing the challenges of supporting her family, she joined the Yaiphabi SHG with aspirations of a better life. In the early days, she availed a small loan of Rs. 30,000 through the SHG, which she used to initiate a modest poultry business. Her keen business acumen and relentless hard work soon paid off, enabling her to expand her ventures into piggyery, poultry, turkey, and duck farming.



As her businesses grew, so did her financial needs. Recognizing her potential, the bank extended a loan of Rs. 2 lakhs to her as an individual, and she further received a CLF loan of Rs. 1 lakh. With this financial support, Ningombam Ibem was able to scale her enterprises to new heights. Her poultry business flourished,



and the profits she earned were reinvested into expanding her livestock and improving her farming techniques.

But the success of Ningombam Ibem's story goes beyond mere financial gain. Her entrepreneurial spirit and dedication have had a profound impact on her family and community. With the income from her

various ventures, she was able to provide her children with a quality education, ensuring that they had opportunities she never had. Moreover, she constructed a new house, a tangible symbol of her hard-earned success and stability.

Ningombam Ibem's story is not just one of personal triumph but also of the empowering role that SHGs

under the Manipur State Rural Livelihoods Mission (MSRLM) play in rural India. Her journey from a small loan recipient to a successful businesswoman highlights how financial inclusion, coupled with hard work, can lead to significant socioeconomic upliftment.

Today, Ningombam Ibem stands as a "Lakhpatti Didi," a testament to the positive change that MSRLM's initiatives can bring to the lives of rural women. Her life is a powerful reminder that with determination, support, and the right opportunities, extraordinary success is within reach for every woman in rural India.



Why Human Intelligence Still Matters in the Age of AI

*Donil Shijagurumayum
IEC Specialist, MAHUD*

The Rise of AI and the Shift in Human Value

Back when I was in school, the idea of being intelligent was pretty simple. Score well in exams, stay quiet during morning assembly, and remember which Shakespearean play had the dagger scene. If you could manage all three, you were considered sharp. Fast forward to today, and now machines are doing most of that. They can answer questions faster than any of us, read more books in a minute than we can in a year, and even generate essays that sound polished and professional. With Artificial Intelligence entering almost every space, it is natural to ask: where do we, the humans, still fit?

AI today is everywhere. It is recommending your next movie, replying to your emails, screening resumes, translating languages, and helping you shop online. It is incredibly efficient when it comes to repetitive, predictable tasks. This has led many companies to rethink their workforce structure. Meta, the parent company of Facebook, WhatsApp, and Instagram, laid off more than 20,000 employees in 2023 and 2024 as part of a strategy that focused heavily on automation and AI-driven operations. Even Microsoft's CEO, Satya Nadella, recently confirmed that AI now writes 30 percent of all code within the company. These are not just numbers. They are clear signs of how fast automation is replacing human labour in certain areas.

My cousin, for instance, used to work in data entry. His job involved staring at spreadsheets all day, copying information from one system to another. Then, one quarter, his company replaced the entire data entry team with software that finished the work in minutes. At first, he

was lost. But after watching some tutorials and exploring online courses, he found himself interested in design. Today, he is freelancing and earning more than he did before. The job loss hurt, but it pushed him to discover a new side of himself. This kind of shift is becoming more common around us.

What AI cannot do, though, is feel. It cannot understand context in the way humans do. It cannot make sense of a child's silence or see through someone's polite smile to understand sadness. It cannot write a joke that lands well in a conversation, or find just the right moment to speak up in a tense room. These are things that only human beings can sense and respond to. Our ability to read situations, listen deeply, and create meaning in the chaos is still unmatched. No matter how powerful AI becomes, it does not experience the world the way we do.

This is why human intelligence still holds tremendous value. The difference is that the type of intelligence that matters is changing. It is less about remembering facts or following rules and more about solving problems, building relationships, and thinking creatively. Many people are already adapting to this. They are learning new skills, starting online businesses, taking courses, and exploring careers that are rooted in creativity or people management. It is no longer about competing with AI. It is about collaborating with it, using it as a tool while focusing on the areas where we shine.

A Digital Leap for Manipur's Youth

A close friend of mine in Imphal started an online jewellery store during the pandemic. She did not wait for everything to be perfect. She

borrowed her brother's phone, watched a few videos to learn the basics of photography and marketing, and began posting on Instagram. Today, she is working with clients in Mumbai and Delhi and has even started mentoring other local women. Her success is not the result of a fancy degree or a business background. It is the result of intent, curiosity, and the ability to start small.

This is the kind of opportunity that did not exist a decade ago. Now, a teenager in Kangpokpi or Tamenglong can learn to code, design, or write from the same online platforms as someone in Delhi or London. With a smartphone and an internet connection, anyone can be a creator, teacher, or entrepreneur. The tools of the future are no longer locked in cities. They are available to anyone who dares to learn.

Manipur, with its deep cultural richness and youthful energy, is especially well placed to benefit from this shift. The state has faced challenges for decades, including poor infrastructure, difficult terrain, and law and order issues, and these have limited opportunities for many. But digital transformation does not rely on highways or office parks. It relies on connectivity and intent. A young person sitting in Ukhrul today can design websites for a client in Bengaluru. A weaver in Bishnupur can sell her products to customers across the country using nothing more than WhatsApp and Instagram.

Inculcating AI into one's skillset is no longer optional. It is a gateway to self-reliance. For the youth of Manipur, this is especially significant. With limited industrial presence and a job market that often fails to absorb the sheer talent available, AI tools open up new paths for independent growth. A young person who learns to use AI for content creation, customer analytics, language translation, or even app development can offer services to clients around the world without needing to leave home. Whether it is using AI to market local handloom products, build chatbots for local businesses, or design curriculum materials for schools, the applications are endless. Mastering these tools does not just increase employability. It creates

autonomy. It allows young minds to become creators, consultants, and entrepreneurs in their own right, contributing to both household income and regional progress. In a state where waiting for government jobs has long been the norm, embracing AI can shift the mindset from dependence to agency.

What is needed now is support. We need better internet infrastructure, more training centres, and local mentors who can guide young people. Government schemes like Startup Manipur have started to make a difference, but the real change will come when the youth believe that they are not just job seekers but job creators. That belief must be nurtured every day in schools, in families, and in public platforms.

Rethinking Education and Redefining Success

This brings us to the question of education. Are we preparing our children for a future where machines do most of the predictable work? Most schools still operate in the same way they did 30 years ago. Rote learning, fixed syllabi, and exams that reward memorisation dominate the system. But the world outside values entirely different things now, including critical thinking, collaboration, creativity, and adaptability.

I spent two years struggling to understand trigonometry in school. I have never used it again. But every day, I write, speak, negotiate, and manage projects, and I learned those things mostly outside of school. Our children deserve better. They deserve an education that prepares them to ask questions, to build, to adapt, and to care. They should be taught how to use technology, how to navigate uncertainty, and how to think for themselves. They should be given space to fail and learn from it, not just coached to chase marks.

Education does not need to be about sitting in classrooms for 20 years before getting a degree. It should be flexible, modular, and accessible. Learning should continue throughout life, not just in the early years. The focus should be on practical skills, real-world exposure, and values that help students navigate complexity. With

the right environment, children in Manipur can compete with anyone across the world. What they need is opportunity and belief.

We must also redefine what success looks like. It is no longer about working in a government job or earning a fixed salary. Success today can mean running your own brand, building a platform for others, starting a podcast, or launching a digital service. It can mean using AI tools to amplify your ideas or solving a local problem with a tech-based solution. There is no single path. There are many. And that is the most hopeful thing about this moment.

AI is changing the world, but it is also changing how we see ourselves. It is pushing us to rediscover our strengths, to grow beyond the roles we were assigned, and to embrace our ability to create meaning where machines cannot. It is reminding us that while knowledge is everywhere, wisdom still belongs to the human mind. It is inviting us to lead, not follow.

The future belongs to those who can think clearly, act ethically, and adapt constantly. It belongs to those who combine logic with compassion, data with storytelling, and ambition with purpose. Machines can assist us, but they cannot replace the depth of our humanity. They can help us move faster, but only we can decide where we want to go.

And that decision, that responsibility, lies with us.

Burning metal particles: the source for next generation green energy

From the discovery of fire by man to space flights in modern times, burning fuels/energetic materials have assisted humans in evolving as a species¹. Hydrocarbon fuels derived from fossils have been relied upon as the primary energy source since the past. However, our present-day technological progress and economic growth still rely on fossil fuels. But burning fossil fuels comes with the consequence of global warming. Therefore, the quest of next generation energy source has already begun. Among them burning metal particles stands out among all of them. If we succeed in harnessing the full potential of humongous energy trapped inside metal particles we just might be a shoe in towards becoming a

star faring beings. So hang tight, the rest of the article is to explain the how and why?

Tales of renewables: Solar, wind, water, and geothermal

The tales of renewable sources of energy such as solar, hydroelectric, and wind are attractive. They are commonly seen as the only brooks of sustainable energy which are recyclable and green. But this can be quite misleading, as solar, wind, geothermal, and hydroelectric depend upon the weather, geographical area, terrain and their availability throughout the year. A case in point is that it may not always be windy or sunny i.e., renewables are not always available when

or where needed. Furthermore, granted that we are allowed to harvest an enormous amount of energy at a certain time and place, there is the question of storage and distribution. How long can we store a solar cell, electricity generated from hydroelectric, or wind? Yes, advancing battery technology is one of the reasons to extend the longevity for energy storage.

Metal particles: Metal fuel cycle

So what are some of the alternatives? This is where burning metal particles offer a robust solution to meet the current day energy demands through a recyclable green metal fuel cycle². Pure hydrogen is always a good candidate but we will come back to that why more research needs to be performed.

So why metal particles? This because of two reasons: (1) The

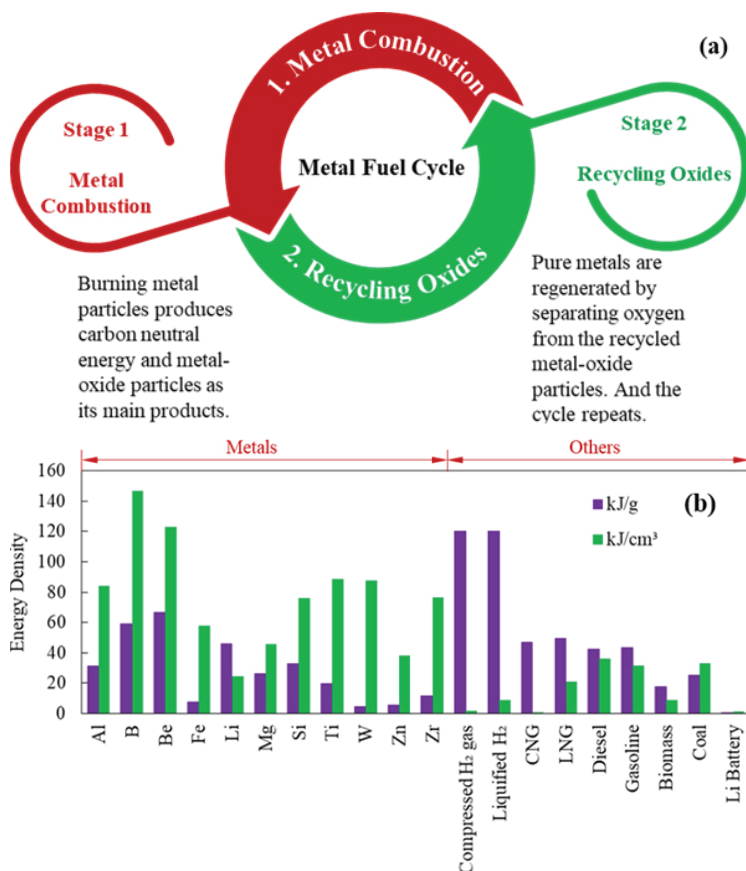


Figure 1: (a) Metal fuel cycle² (b) Energy contents of various materials^{2,4}

energy content packed inside a small space is huge compared to conventional (2) Burning metal particles do not produce carbon-dioxide (CO_2); instead it's combustion products or ashes are just metal-oxides (M_xO_y ; M = metal atom, O = oxygen, x & y are stoichiometric ratios). Observe Figure 1 (b), here we can see that the amount of energy packed inside a metal particles compared to hydrocarbon/fossil fuels can be understood in two ways. The green bars represents the content of energy packed inside a centimeter cube of matter, while the purple bar is the amount of energy packed inside one

notice, but it is an exothermic reaction—meaning it releases heat when iron rust. Therefore, if we can somehow separate the oxygen atoms from the burnt metal oxides, we will get pure metals, which can then be reused for burning. Here, after retrieval of the burnt metal ashes, pure elemental metals are regenerated by carbon-free reduction (reduction is a type of chemical reaction for removing oxygen atoms) using clean primary energy sources. The recycled metal fuels may then be stored or redistributed as charged energy carriers and the cycle repeats.

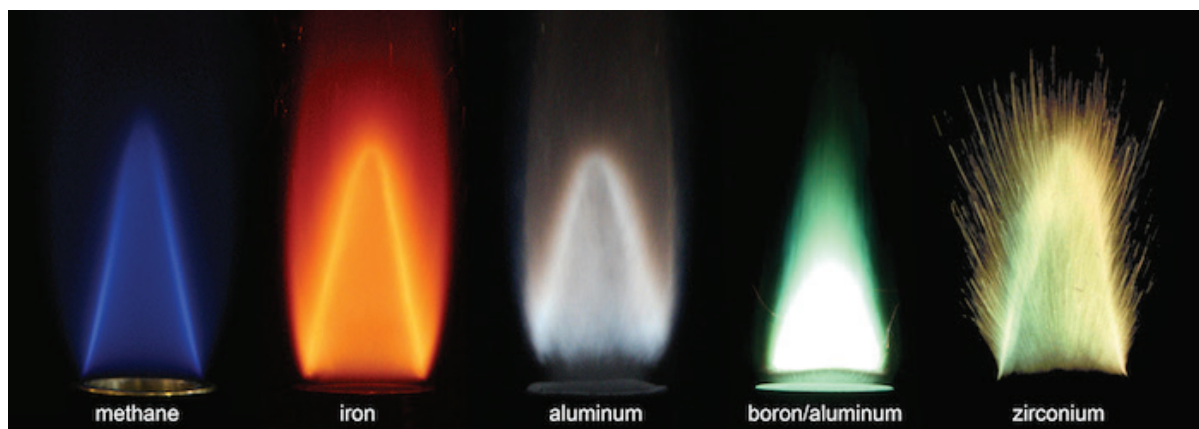


Figure 2: Flames of methane (CH_4) compared to metal (Fe, Al, B, Zr) particles³

gram of said matter. To understand it intuitively, imagine a teaspoon of pure aluminum (Al) particles. It contains enough energy to power a 1000 kg vehicle running at approximately 200 km/h, yielding 100% more mileage than present hydrocarbon fuels.²

So how does one proceed with the concept of the green metal-fuel cycle? Metal-fuel cycle consists of two stages: (1) In the first stage, energy stored inside pure metal particles are release through directly burning/combustion in air (by air we mean oxygen and nitrogen): When metal particles are burnt in air, chemically stored energy is released as heat and light and the metal particles are converted to metal oxides as the burnt remains. (2) The second stage consists of recycling the burnt metal oxide remains and recharging. If we recall some high school chemistry, burning metals is just reacting with oxygen and forming oxides. A simple everyday example is rusting of iron. Although we may not

Choice of metals: Boron? Aluminum? Beryllium? Titanium? Or Tungsten?

Now that we have established that metal particles are packed with energy in a relatively smaller space compared to fossil fuels, clean, and recyclable through the metal-fuel cycle. Which metals should we choose? This choice depends on an interplay of many variables. The first being abundance. From analyzing the elemental composition of the Earth's crust, we found that aluminum content is larger than the rest of the metals. So the availability checks out for aluminum. But what about silicon? Silicon is not that desirable for burning. Because it is even much more costly to make pure silicon from sand!

But one might be intrigued and argue what about boron or beryllium? Because based on the charts shown in Figure 1 (b), they seem to be

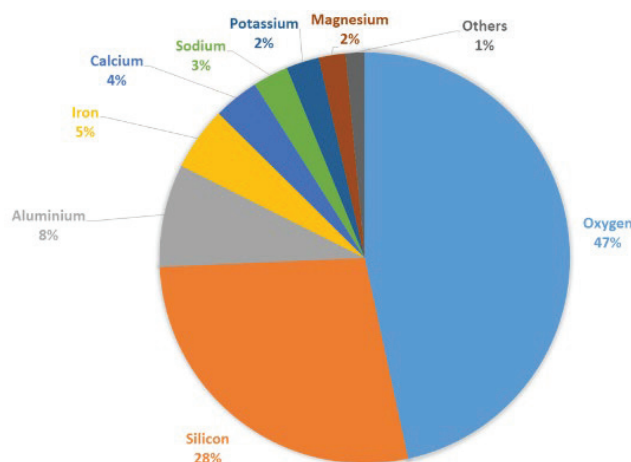


Figure 3: Element distribution for Earth's crust (mass percentage)

highly energetic. The reason is simple: Boron has a very thick oxide layer which is hard to ignite and burning beryllium is toxic. While others such as titanium, zirconium – they are costly. Zirconium is used in the jewelry industry for making fake diamonds. Tungsten is too hard to burn. All we are left is either aluminum or iron to push for! The rest are either costly, toxic, scarce or difficult to burn. Therefore, exploiting aluminum or iron as the next generation energy source has been the put forth. The various mechanisms on how to enhance their burning capabilities has been looked into by various research fronts, including energy and space organizations.

On a brief note, we have talked about hydrogen, even though it has been shown to pack more energy. Well, hydrogen gas can be produced easily by mixing water with pure aluminum particles! But what must be the size of the metal particle in order to be useful? The short answer is micrometer or nanometer in size. Nano-size metal particles gives more punch than micron-sizes, but the reason for this is a subject for another article. Therefore, metal particles can serve as a next generation green energy resource for the foreseeable future due to their robust and sustainable nature, quick recyclability and long term storage capabilities.

References

- 1 F.J. Weinberg, "The first half-million years of combustion research and today's burning problems," *Prog. Energy Combust. Sci.* 1(1), 17–31 (1975).
- 2 J.M. Bergthorson, "Recyclable metal fuels for clean and compact zero-carbon power," *Prog. Energy Combust. Sci.* 68, 169–196 (2018).
- 3 J.M. Bergthorson, S. Goroshin, M.J. Soo, P. Julien, J. Palecka, D.L. Frost, and D.J. Jarvis, "Direct combustion of recyclable metal fuels for zero-carbon heat and power," *Appl. Energy* 160, 368–382 (2015).
- 4 D. Sundaram, V. Yang, and R.A. Yetter, "Metal-based nanoenergetic materials: Synthesis, properties, and applications," *Prog. Energy Combust. Sci.* 61, 293–365 (2017).

Author: Dr. Jyotishraj Thoudam

Designation: Institute Postdoctoral Fellow, IIT Bombay

Email: jyotishraj.thoudam@iitb.ac.in

Phone: +91-8730964334 / +91-7005882544

Website: <https://jrthoudam.wordpress.com>

The author can be reached out through email or phone.

He is currently an postdoctoral fellow at IIT Bombay.

He has worked on enhancing aluminum particles for space applications. He is currently working on developing new generative machine learning models for discovering high entropy alloy materials to replace costly electrocatalysts, funded by Amazon.



- **DEFAMATION**
- **HACKING**
- **SEXTORTION**
- **DIGITAL ARREST**
- **FINANCIAL FRAUD**
- **IDENTITY THEFT**
- **CHILD PORNOGRAPHY**
- **PUBLISHING/TRANSMITTING OBSCENE MATERIAL, ETC.**

 **7005170806**
cybercrime.mn@gov.in

National Helpline☎ 1930

Cybercrime is punishable under different Sections of Bharatiya Nyaya Sanhita, 2023 and Information Technology Act, 2000.

Published by

**Directorate of Information & Public Relations
Government of Manipur**



GOVERNMENT OF MANIPUR DIRECTORATE OF INFORMATION & PUBLIC RELATIONS MAJOR ACTIVITIES DURING THE YEAR, 2024-25

The Directorate of Information and Public Relations (DIPR), Manipur is the nodal agency of the Government of Manipur to disseminate information to the public. It serves as a pivotal communication platform between the Government and the people of the State.

DIPR Manipur provided free internet accessibility to National, International & local media fraternity during internet suspension following the crisis of Manipur.

DIPR in consultation with AMWJU conducted external press tour.

Established audio-visual studio equipped with cutting edge technology of sound recording, mixing and video editing to produce high-quality audio and visual.

Displayed 75 hoardings and 35 Standees of different size promoting government various schemes, activities & achievements across different districts during 2024-25.

Live streamed the 'Lok Sabha Election 2024' results on the outdoor LED Wall screen of DIPR HQ, Youtube Channel and Facebook of the directorate.

Organised Seminar on "Role of Media in the present situation of Manipur" & Workshop on the theme "Changing nature of Press".

Manipur State Journalists Awards 2024 were given to 1 (one) Editor and 7 (seven) Journalist in 8 different categories.

During this year, DIPR initiated innovative public awareness campaign on social issues using different media tools.

