

CRITICAL ANALYSIS OF CENTRAL BANK DIGITAL CURRENCY (CBDC) UNDER FINTECH REGIME IN NEPAL: SOUTH ASIAN CONTEXT

*Nikhil Dongol **

ABSTRACT

The concept of money represents one of the foundational innovations in human civilization. Money fulfils mostly three (3) functions, viz, a medium of exchange, a unit of account, and a store of value. With the growth of information technology and its impacts on day-to-day lives, money is no exception. Digital monetary systems are evolving to enhance the resilience of payment infrastructures. As a result, the Central Bank Digital Currency (CBDC) has been developed as a virtual form of fiat currency of a nation, denominated in the national unit of account used as a legal tender. This access to central bank money could create new opportunities for payment and the way foreign currency exchange takes place. In this milieu, this study delves into use cases and design considerations of CBDCs that are in research among the South Asian Association for Regional Cooperation (SAARC) and representative countries. Illustrating the approach undertaken, paper emphasizes the role of the Fintech Regime for the central bank in Nepal to facilitate transactions in this digital era. However, this paper does not attempt to provide a blueprint for the implementation of CBDC, recognizing that no one-size-fits-all solution exists, but rather highlights some legal scenarios, challenges, and possible ways ahead that could help guide the policy choice for CBDCs in Nepal.

* Attorney-at-Law of the Supreme Court of Nepal, LL.M. Kathmandu School Nepal.

1. INTRODUCTION

The history of banking can be credited to the barter system. A system of exchange where participants would directly receive goods or services without a medium of exchange, although they did not have a 'legal tender' status.¹ Money, mostly coins,² was introduced as a mechanism to facilitate the barter system especially one with the practical impossibility of measuring the accurate value of the goods exchanged.³ Later, due to a lack of mineral resources, coins being heavy and hard to transport and can be stolen easily,⁴ "fiat money" was introduced. Generally introduced by governments, this fiat money, with no intrinsic value itself, was introduced as a legal tender deriving from the authority and creditworthiness of the issuer. The value of money depends on the importance that people place on it as a medium of exchange, a unit of measurement, and a storehouse for wealth.⁵

Money fulfills three functions, viz, a medium of exchange, a unit of account, and a store of value or the value of goods and services itself.⁶ Legally, money is limited to legal tender.⁷ Money may be represented physically through coins, bank notes (paper money), or electronically through credit cards, or non-bank payment systems like e-monies and digital currencies. New forms of money have been evolving as people

¹ C. Liew and P. Wilson, *A History of Money in Singapore* (Van Haren Publishing, Netherlands, 2021) 168. [hereinafter Liew and Wilson].

² Susanne Konig, 'The evolution of money from commodity money to E-money' (2001) UNICERT IV, 21 <<http://wueconb.wustl.edu/E1043S00/schenk/Money/Commodities.html>> accessed 20 June 2020. [Konig].

³ Liew & P. Wilson (n 1).

⁴ Konig (n 2).

⁵ F.S. Mishkin, *The Economics of Money, Banking and Financial Markets* (Prentice Hall, 2006) 102.

⁶ T. Scitovsky, *Money and the Balance of Payments* (Unwin University Books, 1969) 64. [Scitovsky].

⁷ In law, the quality of money is to be attributed to all chattels which are issued by the authority of law and denominated with reference to a unit of account, are meant to serve as a universal means of exchange in the State of issue; Charles Proctor, *Mann on the Legal Aspect of Money* (7th edn, Oxford University Press 2012). In the context of legal tender, only banknotes or coins are money, and other payment systems like bills of money, digital currencies, and e-money are excluded from the concept of money. Tender is a unilateral act, and payment is a bilateral act.

constantly look for the best item that performs the three (3) functions of money most efficiently.

There was an inherent deficiency in the previous forms of money. The barter system had the problem of finding double coincidences of wants for people to trade with each other and a common measure of value among the items bartered.⁸ Commodity monies too failed as commodities used as monies varied across places and time, and they were impractical to use for being bulky, indivisible, and quality deteriorating. Metallic monies became impractical to facilitate high-value trade as the coins required could be large, and hence bulky to carry and count.⁹ Representative monies depended largely on the credibility of the merchants who issued claim checks. Paper (fiat) currencies which we use today also run with many problems. They are inconvertible money issued as unlimited legal tender and hence have no intrinsic worth. Besides, banks and financial institutions (BFIs) also create deposit monies within the fractional reserve system,¹⁰ which are limited to BFIs only.

All of the above monies required the transacting parties to meet each other to verify instructions and authorize the payments which would take time and cost. Banking services are still unavailable 24/7/365 in some places.¹¹ Digital monies, thus, evolved to fulfil the people's growing need for more resilient payments. However, the safety of digital money and low transaction costs had still not been ensured. Today, there is an exploration into digital assets. Although these virtual currencies are gaining popularity and are on the verge of replacing paper money, they are not free of risk. They carry several risks such as facilitating non-transparent transactions leading to illicit use of money, failing to redeem public money, and weakening the central bank's monetary control by displacing official legal tender. Therefore, to mitigate some risks, central banks are now considering/offering their currencies in the digital form, that is CBDC.

⁸ Mpho Stephen, *Modern Forms of Money and the Development of the Concept of Legal Tender* (Master of Laws (LLM) in Banking Law thesis, University of Johannesburg 2021) 8.

⁹ *ibid.*

¹⁰ *Scitovsky* (n 6).

¹¹ *Konig* (n 2).

2. CBDC IN A NUTSHELL

Central Bank Digital Currency (CBDC) is a central bank-issued digital asset denominated in the chosen unit of account represented by a nation.¹² CBDC is the legal tender issued by a central bank in a digital form, in alignment with monetary policy, as a liability on a central bank's balance sheet.¹³ It represents a direct claim on a central bank rather than on a private financial institution which makes it different from existing forms of cashless payment instruments for consumers such as credit transfers, direct debits, card payments, and e-money or cryptocurrencies (such as Bitcoin) and other private digital tokens (for example so-called stablecoins such as Tether) which derive their value from fiat money.¹⁴ Digital versions of cash already exist, such as money held in bank accounts or payment apps, however, CBDC is different from existing digital money as it is a deposit with the central bank itself.¹⁵

Kumhof and Noone, 2018¹⁶ describe CBDC as electronic central bank money that:

¹² Codruta Boar and Andreas Wehrli, 'Ready, steady, go? - Results of the third BIS survey on central bank digital currency' (*Bank for International settlements*, 2021) 20 <<https://www.bis.org/publ/bppdf/bisap114.pdf>> accessed 14 April 2022. [Boar and Wehrli]

¹³ Inutu Lukonga, 'Monetary Policy Implications of Central Bank Digital Currencies: Perspectives on Jurisdictions with Conventional and Islamic Banking Systems' (2023) IMF Working Papers <<https://www.elibrary.imf.org/view/journals/001/2023/060/article-A001-en.xml>> accessed 21 June 2024.

¹⁴ Anneke Kosse and Ilaria Mattei, 'Gaining momentum – Results of the 2021 BIA Survey on central bank digital currencies' (2022) BIS Papers 125, Monetary and Economic Department, 2 <<https://www.bis.org/publ/bppdf/bisap125.pdf>> accessed 21 June 2024.

¹⁵ 'Central Bank Digital Currency' (2021) World Bank Group, 1 <<https://documents1.worldbank.org/curated/en/603451638869243764/pdf/Central-Bank-Digital-Currency-Background-Technical-Note.pdf>> accessed 21 June 2024; Sayuri Shirai, 'Money and Central Bank Digital Currency' (2019) Asian Development Bank Institute, 3 <<https://www.adb.org/sites/default/files/publication/534311/adbi-wp1022.pdf>> accessed 21 June 2024.

¹⁶ M. Kumhof and C. Noone, 'Central bank digital currencies – design principles and balance sheet implications' (2018) Bank of England, Staff Working Paper No.725, 4 <<https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2018/central-bank-digital-currencies-design-principles-and-balance-sheet-implications>> accessed 14 May 2023.

- a. Can be accessed more broadly than reserves
- b. Potentially has much greater functionality for retail transactions than cash
- c. Has a separate operational structure from other forms of Central Bank money, allowing it to potentially serve a different core purpose, and
- d. Can be interest-bearing, under realistic assumptions, paying a rate that would be different from the rate on reserves

CBDC is an innovation in both the form of money provided to the public and the payment infrastructure on which payments can be made.¹⁷ CBDC is being developed as a new form of central bank-issued money that will be both digitally and universally (publicly) accessible as compared to cash (universal but not digitally accessible), reserve money (central bank-guaranteed money electronically but not universally accessible), and bank account (universally and electronically accessible for use but not central bank- issued). See Figure 1 for a comparative illustration of the forms of money.

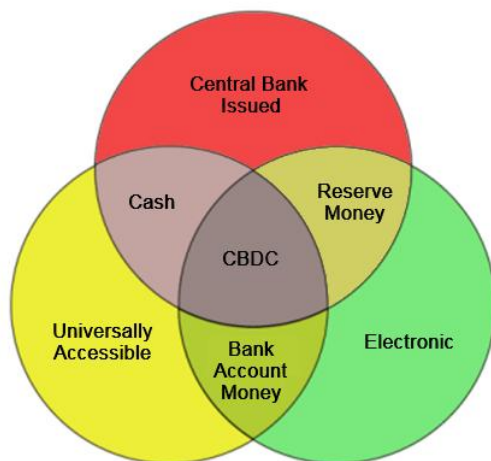


Figure 1: Source: Different Forms of Money Bjerg, 2017¹⁸

¹⁷ BoE, 'Central Bank Digital Currency Opportunities, challenges, and design' (2020) Bank of England, Discussion Paper <<https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design.pdf>> accessed 15 May 2023.

¹⁸ O. Berg, 'Designing New Money- The Policy Trilemma of Central Bank Digital Currency' (2017) Copenhagen Business School, CBS Working Paper, 5

The rise of CBDC was driven by technological advances and a decrease in the use of cash globally, which prompted many central banks to explore the feasibility of it to balance cash flow.¹⁹ Moreover, it was also ushered in by the wide popularization of cryptocurrency among the public.²⁰ Exploring CBDC knowledge is paramount for central banks to aid in their public good objectives of safeguarding trust in the currency, maintaining financial stability, and ensuring safe and resilient payment systems.²¹ If central banks do not begin to identify the cost and benefits of digital currency adoption, private sector industries may gain control of the market, especially in the form of cryptocurrency, which threatens to displace traditional banking systems and undermine the provision of credit.²²

Likewise, in 2019, Meta (formerly Facebook) proposed its first digital currency (which would be pegged to fiat currency) and a cross-border payments system known as *Diem* (formerly Libra).²³ This quickly ushered the central banks to adopt the digital version of their currency and terminate the project Diem side by side, the primary reason being if Meta's 2 billion users suddenly adopted a new currency as a medium of exchange

<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2985381> accessed 14 May 2023.

¹⁹ The Rise of Central Bank Digital Currencies (CBDCs)' (2019), PWC.

²⁰ 'Concept Note on Central Bank Digital Currency' (2022) Reserve Bank of India, 7 <<https://rbidocs.rbi.org.in/rdocs//PublicationReport/Pdfs/CONCEPTNOTEACB531172E0B4DFC9A6E506C2C24FFB6.PDF>> accessed 29 May 2023; Runhan Wu et al., 'Investigating e-Retailers' Intentions to Adopt Cryptocurrency Considering the Mediation of Technostress and Technology Involvement' (2022) 14 (2) MDPI <<https://www.mdpi.com/2071-1050/14/2/641>> accessed 16 May 2023.

²¹ Gabriel Soderberg et al., 'How Should Central Banks Explore Central Bank Digital Currency' (2023) Fintech Notes, IMF, 11 <<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKewj6v4eIqO2GAxUVka8BHY9uACcQFnoECB8QAQ&url=https%3A%2F%2Fwww.imf.org%2F-%2Fmedia%2FFiles%2FPublications%2FFFTN063%2F2023%2FEnglish%2FFFTNEA2023008.ashx&usg=AOvVaw2IYa0YPALQoXF-zsJPamgQ&opi=89978449>> accessed 12 May 2023.

²² 'Central Bank Digital Currency (CBDC): identifying appropriate policy goals and design for Nepal' (2022) Nepal Rastra Bank, 1 <<https://www.nrb.org.np/contents/uploads/2022/10/CBDC-for-Nepal.pdf>> accessed 14 March 2023.

²³ Karan Poudel, 'What are central bank digital currencies-and why are central banks creating them' *The Farsight, Nepal* (Kathmandu, 15 March 2022) <<https://farsightnepal.com/news/47>> accessed 19 April 2022.

through a private medium over which central banks would have no control,²⁴ it would lead to undermining the monetary sovereignty and financial stability of a country.

Due to this, the move toward CBDCs is gaining momentum, driven by the ingenuity of Central Banks. Around 100 countries are exploring CBDCs at one level or another. Some researching, some testing, and a few already distributing CBDC to the public.²⁵ In the survey conducted by the Bank for International Settlements (BIS) in 2021,²⁶ 86% were actively researching the potential for CBDC, 60% were experimenting with the technology and 14% were deploying pilot projects.²⁷ Bahamas launched “Sand Dollar” for its residents on 20 October 2020, its first “live” general-purpose CBDC.²⁸ Sweden’s *Riksbank* has developed a proof of concept and is exploring the technology and policy implications of CBDC, which began e-krona in 2017.²⁹ European Central Bankers expect to launch a digital euro by 2025. In this milieu, this research aimed to study CBDC in the context of the Fintech laws in Nepal in relation to South Asia. The research was conducted to comprehend the strengths, weaknesses, opportunities, and threats (SWOT test) of the present regulatory framework of digital currencies if it is to be introduced in Nepal.

In this light, the research employed doctrinal and non-doctrinal research on the Fintech laws that govern CBDC in Nepal. Non-doctrinal research (Primary data) was conducted from the constitution, acts, directives, circulars, case law, and interviews among the members of the *Nepal Rastra Bank* (NRB), the central bank of Nepal, to exactly navigate the current

²⁴ Jahja Rustemi and Nils S. Tuchscheid, ‘Facebook’s Digital Currency Venture “Diem”: the new Frontier ... or a Galaxy far, far away?’ (2020) 10(12) Technology Innovation Management Review <https://timreview.ca/sites/default/files/article_PDF/TIMR%20review_2020_December%20-%202020_0.pdf> accessed 26 January 2023.

²⁵ Kristalina Georgieva, ‘The Future of Money: Gearing up for Central Bank Digital Currency’ (*Atlantic Council*, 9 February 2022) <<https://www.imf.org/en/News/Articles/2022/02/09/sp020922-the-future-of-money-gearing-up-for-central-bank-digital-currency>> accessed 14 May 2023.

²⁶ *Boar and Wehrli* (n 12) 110.

²⁷ The explorations include the legal framework for CBDCs and their assessment of the use of cryptocurrencies and stable coins in their jurisdictions.

²⁸ ‘Digital Bahamain Dollar’ (*Sanddollar*, 2022) <<https://www.sanddollar.bs>> accessed 23 April 2022.

²⁹ Sweden’s cash transactions comprised only 13% of all retail transactions in 2018.

status of CBDC. Purposive Judgmental Random Sampling for acquiring the primary data. Doctrinal research using secondary sources - such as books, journals, articles, reports, news, and other literature - was carried out to examine the forms of CBDC introduced or studied by representative countries, including South Asian Association for Regional Cooperation (SAARC) countries. These data were then studied and analysed to draw up the findings of the research.

3. INITIATION OF CBDC

Bank for International Settlements (BIS) has laid down “foundational principles” and “core features” of a CBDC to guide exploration and support public policy objectives, as per the need of the existing mandate of central banks. BIS has recommended three (3) foundational principles to be considered by the central banks while designing CBDC:³⁰

- a) Not harming other policy mandates of the central banks (“Do no harm”)
- b) Not replacing other existing forms of monies (“Coexistence”)
- c) Promoting broader innovation and efficiency in the overall payment system (“Innovation and efficiency”)

In summary, it emphasizes that authorities would first need to be confident that issuance would not compromise monetary and financial stability and that a CBDC could coexist with and complement existing forms of money, promoting innovation and efficiency.

To comply with the above foundational principles, BIS has further identified 14 core features related to the CBDC instrument, the underlying system, and the broader institutional framework. The core features include Instrument features (convertible, convenient, accepted and available, low cost), System features (secure, instant, resilient, available, throughout, scalable, interoperable, flexible, and adaptable), and Institutional features (robust legal framework, standards).³¹ In summary, prior to adopting CBDC, the central bank would need to be clear that the net benefit for

³⁰ BIS, ‘CBDC: foundational principles and core features,’ (*Bank for International Settlements*, 2020) 10, <<https://www.bis.org/publ/othp33.pdf>> accessed 8 September 2023. [hereinafter BIS]

³¹ *ibid* 11.

payment users, the financial system, and society as a whole would outweigh the risk attached to the new technology.

4. DESIGN CHOICES OF CBDC

Developing a suitable design for a CBDC is an important aspect to realize and reap the benefit. Being the least disruptive may be one of the main considerations of CBDC. It may be heavily influenced by the political objectives as well as technical requirements of the respective nations. Different technical designs meet the attributes to varying degrees depending on whether they take intermediaries, maintain the ledger, or provide access and facilitative retail interlinkages across borders. Since there are infinite design possibilities for digital currencies and also its supporting networks, so, central banks have the autonomy to design digital currencies according to their monetary policy and economic objectives.³²

Technically, CBDC could be developed with 2 possible use cases³³ (i.e., retail and wholesale), 4 different types of architecture³⁴ (i.e., direct, hybrid, intermediated, and indirect), 3 different types of infrastructure/ledger design³⁵ (i.e., centralized, semi-centralized, and decentralized), and 2 forms of access³⁶ (i.e., account and token). Moreover, the CBDC instruments could be remunerative or non-remunerative, 24/7 available for

³² IANS, 'How Blockchain-based CBDC and crypto are different?', *The Statesman* (Kolkata, 6 November 2022) <<https://www.thestatesman.com/business/how-block-chain-based-cbdc-and-crypto-are-different-1503128776.html>> accessed 5 June 2023.

³³ It determines whether the CBDC design is made to meet the payment need of households held by citizens or between the financial institutions for the settlement of interbank transfers or wholesale transactions.

³⁴ It is the legal structure of the claims and the respective operational roles of the central bank and private institutions (PSO, digital wallet or BFIs) in payments.

³⁵ It refers to how the ledger of the transactions and balances of end users are kept. This technology differs in terms of efficiency and degree of protection from the single point of failure. A blockchain is a type of distributed ledger technology.

³⁶ This design choice is concerned with either tying access to the CBDC to an identity system adopting an account-based technology (requires the account holder to verify the identity and rely on a central party to manage the accounts to record credits and debits between them) or securing via cryptographic schemes that do not require identification by adopting a token-based technology (requires the payee to verify the validity of the payment object and rely on decentralized transactions to operate the transfer of the tokens).

transactions, quantity-restrictive, multi-system interoperable (with other payment systems), and programmable. Among the countries that have launched CBDC by July 2023, most of them have developed CBDC for retail purposes, using intermediated architecture, and distributed ledger allowing both account-based and token-based access. Rest countries are exploring CBDC mainly for the retail use cases in intermediated architecture with DLT infrastructure.³⁷

5. STATE PRACTISES IN CBDC

The recent rollouts of CBDCs in many countries, most notably China with the *Digital Yuan*, have prompted many large Western economies such as the US Federal Reserve and the European Central Bank to look into and even begin developing their CBDCs, but many questions remain as to specific implementation details.³⁸

5.1 SAARC Countries

- a) Bangladesh Bank, in 2022, the Ministry of Finance disclosed the plan to conduct a feasibility study on CBDC in the country's budget FY2022-23 as viable alternatives to risky private digital currencies.³⁹
- b) Bhutanese central bank Royal Monetary Authority (RMA), in 2021, partnered with Ripple to pilot a CBDC using Ripple's CBDC Private Ledger (based on the public, open-source XPR Ledger). RMA pilot retail, cross border, and wholesale payment use cases for a digital *Ngultrum* in phases with a motivation to accelerate its mission to increase financial inclusion in the country to 85% by 2023.⁴⁰

³⁷ Design choices being considered by 109 countries exploring CBDC (2023) <atlanticcouncil.org/cbdtracker/> accessed 15 July 2023.

³⁸ S. Hansen, 'Fed Chair Powell Says Digital Dollar is a High Priority Project' (*Forbes*, February 2020) <<https://www.forbes.com/sites/sarahhansen/2021/02/23/fed-chair-powell-saysdigital-dollar-is-a-high-priority-project/?sh=6464097f7e4c>> accessed 17 May 2023; 'A digital euro', (2021) accessed 17 May 2023.

³⁹ Wahid Pessarlay, 'Bangladesh exploring CBDC as an alternative to 'risky' private digital currencies', (*Coingeek*, 19 June 2022) <<https://coingeek.com/bangladesh-exploring-cbdc-as-an-alternative-to-risky-private-digital-currencies/>> accessed 30 June 2023.

⁴⁰ Royal Monetary Authority of Bhutan, Ripple Partner to Pilot CBDC Using Private Blockchain (*Team Ripple*, 22 September 2021) <<https://ripple.com/ripple-press/>>

- c) State Bank of Pakistan, in 2019, said it has launched laws, designed with the help of the World Bank, for Electronic Money Institutions (EMIs)⁴¹ as a step toward issuing digital currency by 2025.⁴²
- d) India, in 2022, announced the *Digital Rupee* in the Union Budget for FY2022-23 to introduce CBDC within the fiscal year (1st April). An appropriate amendment to the RBI Act, 1934 has been included in the Financial Bill, 2022, and the Bill has been enacted providing a legal framework for the launch of CBDC.⁴³ Subsequently, RBI launched its wholesale digital rupee pilot project in November 2022 and its retail in February 2023.
- e) Nepal Rastra Bank, in its monetary policy for FY 2021/22 (2078/79),⁴⁴ announced to carry out a study regarding the usage and feasibility of digital currency, and subsequently, a concept report was released for public consultation in Aug 2022.⁴⁵ As per the report, a CBDC Unit has been established under the Payment Department of NRB to determine the design choice of CBDC to launch for the pilot study.
- f) Sri Lanka has formed a Ways and Means Committee to move the process of moving from the “Lanka Pay” system to CBDC.⁴⁶ It will be a proof-of-concept (PoC) before proceeding with a phased pilot to test real-world scenarios.

royal-monetary-authority-of-bhutan-ripple-partner-to-pilot-cbdc-using-private-blockchain/> accessed 30 June 2023.

- ⁴¹ They are non-bank entities that will be licensed by the State Bank of Pakistan (SBP) to issue e-Money for the purpose of digital payments.
- ⁴² Khurshid Ahmed, ‘Pakistan to tap into digital currency potential by 2025’ *Arab News* (Pakistan, 3 April 2019) <<https://www.arabnews.pk/node/1476496/pakistan>> accessed 30 June 2023.
- ⁴³ Reserve Bank of India (7 October 2022) <<https://rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=1218>> accessed 30 June 2023.
- ⁴⁴ Monetary Policy 2021/22 (Nepal Rastra Bank, Nepal, 13 August 2021) <<https://www.nrb.org.np/contents/uploads/2021/10/Monetary-Policy-2021-22.pdf>> accessed 29 June 2023.
- ⁴⁵ Nepal Rastra Bank, ‘Central Bank Digital Currency (CBDC) : Identifying Appropriate Policy Goals and Design of Nepal’ (Currency Management Department, August 2022) Nepal.
- ⁴⁶ Yohan Perera and Ajith Siriwardana, ‘Central Bank to introduce digital currency by the end of this year’, *DailyMirror* (Colombo, 13 January 2024) <<https://www.parliament.lk/en/news-en/view/3831?category=33&tmpl=component&format=pdf>> accessed 22 June 2024.

State	Official Name	Announcement date	Central Bank	Status	Motivation	Progress
Afghanistan	Not Available (NA)	NA	Da Afghanistan Bank	NA	NA	NA
Bangladesh	Digital taka (e-taka)	2022	Bangladesh Bank (blockchain technology)	Research	As an alternative to risky private digital currencies	
Bhutan	Digital Ngultrum (Retail, Wholesale)	2021	Royal Monetary Authority (Ripple's XPR Ledger Technology)	Research	To accelerate its mission to increase financial inclusion in Bhutan to 85% by 2023.	Collaborated with Ripple to test the potential of CBDCs to provide an alternative and sustainable digital payment instrument.
India	Digital Rupee (eINR (Retail, token-based)) India CBDC (Retail e₹-R, Wholesale e₹-W)	2020	Reserve Bank of India (Blockchain DLT)	Pilot	Financial inclusion, to remove the security printing cost borne by the general public, businesses, banks, and the RBI on physical currency	Wholesale digital rupee was launched on 1 November 2022 while the retail one was announced to start a similar trial in the same month. In 2025, RBI plans for testing cross-border payments.
Maldives	Digital Rufiyaa	2023	Maldives Monetary Authority	Research	To facilitate financial inclusion and make it easier to implement fiscal policies	MMA has set up infrastructures like the National Data Centre, National Centre for IT, Electronic Transaction Law, National Cyber Security Act, etc. ⁴⁷
Nepal	Name not decided (Retail)	2022	Nepal Rastra Bank (DLT)	Research	To find a better way to meet the wide variety of policy goals taken by central banks, such as financial inclusion, optimal payment system, and cost-efficient currency management, among others.	NRB has set up a CBDC Unit under its Payment Department to determine the design choice of CBDC. Expected to roll-out in 2026.
Pakistan	Name not decided (Retail)	2019 (issue by 2025)	State Bank of Pakistan	Research	To promote financial inclusion and reduce corruption, and improve efficiency	Launched the National Payment System Strategy in November 2019. A pilot is expected in 2026
Sri Lanka	Name not decided (Retail) Project Lanka Ray	2022	Central Bank of Sri Lanka (Blockchain Technology)	Research	To reduce cryptocurrency adoption, increase financial inclusion, and complement cash use.	Plans proof-of-concept CBDC in 2024 with a study by the Ways and Means Committee

Figure 2: Table representing the status of CBDC among SAARC countries; Source: <https://www.atlanticcouncil.org/cbdctracker>, last updated: July 2023

⁴⁷ Emir Hrnjic and Gordon Clarke, 'National Study on Central Bank Digital Currency and Stablecoin in the Maldives', (2022) UN Department of Economic and Social Affairs <<https://repository.unescap.org/bitstream/handle/20.500.12870/4758/ESCAP-2022-RP-National-study-central-bank-digital-currency-stablecoin-Maldives.pdf?sequence=1&isAllowed=y>> accessed 14 May 2023; 'Maldives to introduce Rufiyaa's digital currency version', *Atoll Times* (Male, 29 November 2022) <<https://atolltimes.mv/post/news/1328>> accessed 23 March 2023.

5.2 Representative Countries

- a) People's Bank of China (PBOC), in 2014, announced to research e-CHY (based on Feitian Technologies).⁴⁸ In 2020, the pilot project was launched in 4 major cities, becoming the world's first major economy to pilot a digital currency, which was later expanded to the entirety of 4 provinces. While it is yet to announce the date for the nationwide launch of e-CHY, however, tech giant companies including Alibaba and Tencent have integrated e-CNY into their systems as a payment option.⁴⁹
- b) The Central Bank of the Bahamas was the first central bank to introduce a full-fledged CBDC in October 2020, namely *Sand Dollar*. The Eastern Caribbean Currency Union, consisting of Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines, launched its digital currency in March 2021.⁵⁰
- c) US Federal Reserve (Fed) of New York, in 2020, launched the inaugural project of the New York Innovation Center to develop a technical framework for a theoretical wholesale CBDC in the Federal Reserve context. Also, a discussion paper in January 2022 was released examining the pros and cons of a potential retail CBDC.⁵¹ Fed has been conducting research since 2020 with the Massachusetts Institute of Technology (MIT) to lay the technical groundwork for the potential creation of a CBDC.
- d) The Central Bank of Russia, in 2019, announced the CBDC research and CBDC strategy in late 2020. A separate bill named the *Digital Rubble bill* has been in the parliamentary hearings

⁴⁸ 'Progress of Research & Development of E-CHY in China' (*The People's Bank of China*, July 2021) <http://www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021072014364791207.pdf> accessed 31 August 2025.

⁴⁹ 'Influencing the Velocity of Central Bank Digital Currencies' (*cLabs Team*, 14 May 2020) <<https://celo.org/papers/cbdc-velocity>> accessed 30 June 2023.

⁵⁰ Mark McKenzie, 'The Rise of Central Bank Digital Currencies in the Caribbean' (*The SEACEN Centre*, 10 May 2022) <https://suara.seacen.org/the-rise-of-central-bank-digital-currencies-in-the-caribbean> accessed 31 August 2025.

⁵¹ 'All About Project Hamilton' (*Federal Reserve Bank of Atlanta*, 9 June 2022) <<https://www.atlantafed.org/rprf/events/talk-about-payments/2022/06/09/all-about-project-hamilton/transcript.aspx>> accessed 30 June 2023.

process in the State Duma, the Federal Assembly's lower house.⁵² CBR published a consultation paper on a digital ruble in October 2021 and launched digital currency pilots with several domestic banks in 2022.⁵³

- e) Central Bank of Iran (CBI), in 2018, initiated the digital Rial project called the *crypto rial*, which is pegged to the national currency, the Iranian rial at a 1:1 ratio. It runs on a platform known as Borna, developed using Hyperledger Fabric (an IBM open-source DLT platform). Iran has completed a pre-pilot phase in the development of CBDC as announced at the 9th annual conference on electronic banking and payment systems on 20 February.⁵⁴
- f) Nigerian Central Bank (CBN), in 2021, launched retail DLT *eNaira* partnered with Bitt Inc. based on Hyperledger Fabric technology. *eNaira* is implemented into the Nigeria Inter-Bank Settlement System (NIBSS), especially, into NIBSS Instant Payments (NIP- a virtual real-time Inter-Bank payment method based on account numbers) where customers can now transfer money from their *eNaira* wallet to any Nigerian bank account of their choice.⁵⁵
- g) Venezuela, in 2018, launched a digital currency, *the petro*, purportedly backed by oil, natural gas, and mineral reserves and administered using blockchain technology. Petro has not been adopted for general use, and there is little evidence that it is a functional or operational digital currency.⁵⁶

⁵² The bill intends to amend at least 8 federal laws and five codes, including the Civil Code, Tax Code, Budgetary Code, Criminal Code and Administrative Code.

⁵³ David Attlee, 'Russian lawmakers propose amendments on digital ruble bill' *cointelegraph* (New York, 23 May 2023) <<https://cointelegraph.com/news/russia-digital-ruble-bill-receives-amendments-from-lawmakers>> accessed 30 June 2023.

⁵⁴ Helen Partz, 'Iran completes per-pilot phase of central bank digital currency' *cointelegraph* (New York, 6 March 2023) <<https://cointelegraph.com/news/iran-completes-pre-pilot-phase-of-central-bank-digital-currency>> accessed 30 June 2023.

⁵⁵ Turner Wright, 'Nigeria's central bank partners with fintech firm Bitt Inc for CBDC rollout', *cointelegraph*, (New York, 31 August 2021).

⁵⁶ Marc Labonte and Rebecca M. Nelson, 'Central Bank Digital Currencies: Policy Issues', *CRS Report* (Congressional Research Service, 7 February 2022) 13. [Labonte and Nelson]

- h) European Central Bank, in 2021, announced the retail *Digital Euro*. Pilot projects have been kick-started and task forces launched at the central banks of Sweden, France, the Netherlands, Lithuania, and England among others. European Bank Federation (EBF), which presents 33 national banking associations and 3500 individual banks, has released a paper dated 28 March detailing its vision for a digital money ecosystem which contains 3 elements, viz., the digital euro, a wholesale CBDC, and bank-issued money tokens.⁵⁷
- i) Eastern Caribbean Central Bank (ECCB), in March 2021, launched a pilot of DCash. DCash is issued by the ECCB and distributed by licensed banks and non-BFIs (Banking and Financial Institutions) in 4 pilot countries (Saint Christopher [St. Kitts] and Nevis, Antigua and Barbuda, Grenada, and Saint Lucia). Consumers and businesses can use an application on smart devices to make financial transactions. DCash cannot be used for transactions outside the Eastern Caribbean Currency Union (ECCU).⁵⁸

These are the current trends of the representative jurisdiction from around the world. It can be deduced that these new developments in technology have not barred countries poor or rich, West/East, and, so-called first-world/third-world in the race of adopting CBDC to reap the facility it provides provided that CBDC aligns with their respective legal and regulatory regime.

6. LAWS AND JURISPRUDENCE

One of the key foundational issues related to CBDC that have been discussed in various reports, papers, and articles has been adequate legal, regulatory, supervisory, and oversight frameworks to ensure trust, resilience, security, and confidence in any CBDC. The authority of Central banks to issue the digital currency, and its equivalence to the real currency as a legal tender is a major question that the law should answer in order that the private alternatives would not gain popularity against the CBDC.

⁵⁷ Derek Andersen, 'European Banking Federation shares its vision of digital euro, wCBDC, bank tokens', *cointelegraph* (New York, 28 March 2023) <<https://cointelegraph.com/news/european-banking-federation-shares-its-vision-of-digital-euro-wcbdc-bank-tokens>> accessed 30 June 2023.

⁵⁸ *Labonte and Nelson* (n 56) 12.

What status CBDC would have legally and which existing legal frameworks, that are specifically enacted in a pre-digital age, need reform is another significant question to answer.

6.1 National Laws

A robust and unambiguous legal framework is an essential prerequisite for any Central Bank issuing a CBDC. Since the first survey on this question in 2017, there has been a slow but steady trend of more and more central banks either obtaining legal authority or clarifying that they do not have it. Some 26% of central banks do not have the authority to issue a CBDC and about 48% remain unsure.⁵⁹ The legal consideration will mainly be dependent on the final operational, and technological design features as well as a form of issuance. This paper discusses the following regulatory regime in consideration of the design choice as suggested by NRB in its consultation paper.

6.1.1 Monetary Policy and Liquidity Management

According to the BIS Report (2018),⁶⁰ CBDC does not alter the basic mechanics of monetary policies but rather a timely transmission of the same. Its implication for monetary policy essentially depends on the way it is designed and its degree of usage. Unlike the physical cash which bears interest when kept on a bank as a deposit, CBDC has the advantage of not losing its face value and is easy to be stored in large amounts without a need to depend upon financial intermediation. This switching from deposits from BFIs or impairment to CBDC would directly impact the banking system, monetary policy, and financial stability.

The change in the form of the currency (from physical to digital) may bring about a change in the behaviour of public holding of money and the central bank's plan and execution of its discretionary liquidity (injection/absorption) measures. Due to the potential scope for substitution

⁵⁹ The increased share of responses indicating uncertainty about the legal authority to issue CBDC can be attributed to changes in the sample, compared to the 2019 survey. *Boar and Wehrli* (n 12) 10.

⁶⁰ Bank for International Settlements, 'Central Bank Digital Currencies' (2018) Committee on Payments and Market Infrastructures/ Markets Committee <<https://www.bis.org/cpmi/publ/dl174.pdf>> accessed on 21 June 2024.

of deposits of commercial banks by CBDC, there might be a much larger impact on reserve money, money supply, net demand, and time liabilities. Banking and Financial Institutions (BFIs) might be more dependent on the central bank's liquidity provisions as a result of financial disintermediation. For the same, the economic design of CBDC like access criteria of CBDC, limit on CBDC fund holdings, and interest on CBDC⁶¹ are crucial. However, all the above policy considerations cannot be gauged prior provided that most of the central banks are still exploring issuance of CBDCs.

6.1.2 Central Bank Act⁶²

Issuing CBDC as a digital legal tender requires the act to be within the mandate⁶³ of the central bank stated in its functions (what the bank must do to achieve its objectives), powers (how the bank can act to implement its functions), or objectives.⁶⁴ For example, similar to the functions, duties

⁶¹ For instance, CBDCs of China (e-CNY), the Bahamas (Sand Dollar), and Nigeria (e-Naira) are non-interest-bearing.

⁶² For Nepal, Nepal Rastra Bank (NRB) is the only central bank, and the central bank act is Nepal Rastra Bank (NRB) Act, 2002 (2058 BS). BS means Bikram Sambat, which is the official calendar of Nepal.

⁶³ According to the preamble of the NRB Act, the 3 key mandates for NRB are (1) to maintain the stability of price, the balance of payment, and the entire financial sector, (2) to increase financial access, and (3) to develop a secure, healthy, and efficient system of payment; s. 51(1) specifies issuing banknotes and coins as the functions and duties of the NRB. Moreover, the act can also include a function to promote technological innovation in the banking system. Such a type of provision can be relevant for CBDC. Specifically, when the legal basis is otherwise relatively weak, such a provision can be an additional argument to support the legal basis for the issuance of CBDC.

⁶⁴ Consideration should also be given to the third legal component of the central bank mandate: the objectives. Today, this aspect may appear less relevant, as the issuance of currency constitutes only a minor element of pursuing price stability. Going forward, central banks contemplating the issuance of CBDC will need to justify how such issuance contributes to the pursuit of their objectives, which may in some jurisdictions require compliance with a “proportionality test.” In that regard, the impact of the issuance of CBDC on the stability of the banking sector and the possibility to charge (including negative) interest on CBDC may influence this assessment. For instance, the latter may establish a very direct link between the central bank’s objectives and the functions of the issuance of currency and the formulation and implementation of monetary policy. See Nepal Rastra Bank Act [2002] (Nepal), ss. 52, 53. [NRB Act].

as well as the power to issue banknotes and coins.⁶⁵ Two (2) typical functions are particularly relevant for the issuance of CBDC, that is, currency issuance functions (whether to issue all types of currency or only banknotes and coins) and payment system function (whether the transfer of money using technology or procedure used in CBDC could amount to the payment system or whether the central bank has authority to open access to its payment system to and among the general public). For the same, the act shall also incorporate the power to issue digital currency and other concomitant changes pertaining to the production, circulation as well as withdrawal (or issue currency in general) and be acceptable to all.⁶⁶ This is especially important because the issuance of CBDC is a novel and potentially contentious activity as it is ultimately a liability (debt) of the central bank.

Similarly, if the central banks decide to issue the CBDCs in account form, legal amendments shall be required to allow central banks to open and hold cash current accounts for the public. Currently, in Nepal, NRB is generally not capable of opening bank accounts to the public but with only government, public, and foreign institutions.⁶⁷ The act should authorize the creation of central bank liability. Moreover, the illegality of forging, counterfeiting, or altering CBDC shall also be prohibited under criminal law. Like the crypto case, if it is not recognized as legal tender, it is considered a violation of foreign exchange policy and foreign exchange management and prosecuted accordingly.

At first, CBDC must support public policy objectives without impeding central banks' ability to fulfil their objectives. There are certain mandates provided to the central bank,⁶⁸ so, any policy goal selected for CBDC first needs to be related to the policy mandates of the central bank. The definition of money⁶⁹ may not fit the notion of digital currencies. Like the monopoly of issuing bank notes, the central bank needs to have a

⁶⁵ NRB Act (n 65), s. 5(1)(a).

⁶⁶ NRB Act (n 65), ss. 53, 56.

⁶⁷ *ibid* s. 13.

⁶⁸ Like in Nepal, NRB Act (n 65), s. 5.

⁶⁹ Apart from currency, it also includes certain types of assets or instruments that are readily convertible or redeemable into currency, like book money and electronic money (like Bitcoin, recognized under Tax Law but not under financial law in India).

monopoly to issue CBDC at its outset, and if not possible and BFIs are allowed, such bank should exercise firm oversight over such issuance.

In summary, the state shall sanction the use of official means of payment: currency essentially through five (5) important legal mechanisms, that is, the monopoly to issue CBDC, *cours force*⁷⁰ for token-based CBDC, legal tender status, privilege under private law (to favour circulation), and protection under criminal law.

6.1.3 Foreign Exchange Laws

First, the country shall be clear on its stand on privately issued cryptocurrencies. If it does not, which is a common scenario, the state shall provide the legal backdrop for the prosecution of the illegal trade of crypto. An instance from the Supreme Court of India is worth studying.⁷¹ Similarly, the state shall provide legality to CBDC via its foreign exchange

⁷⁰ It means the value of a CBDC is the amount of the official monetary unit valued against it by the issuer. CBDCs are to be accepted in payment for the value, without convertibility into banknotes.

⁷¹ In the case, *Internet and Mobile Association of India v. Reserve Bank of India* [2020] Writ Number 373/2018, Supreme Court of India [4 March 2020], the Supreme Court struck down the circular issued by the Reserve Bank of India (RBI) as it is illegal, and the guideline is unenforceable. The circular issued dated 6th April 2018, tends to put a ban on banks and other entities from trading virtual currencies (cryptocurrencies) and barred from providing any kind of services (maintaining the accounts, registering, trading, settling, clearing, giving loans against virtual currencies, accepting them as collateral, opening accounts of exchanges dealing with them and transfer or sale/purchase of virtual currencies) to any individual or entity dealing or setting the virtual currencies. The Petitioner opines that there was no legislation passed imposing the ban, so there is a lack of jurisdiction for the RBI to do so. In other words, the virtual currency was separated from the assets of the economy. Moreover, they also contended that virtual currencies (cryptocurrencies) are not a kind of currency note or coin but a medium of exchange or a store of value. On the other hand, the RBI was concerned with the loss to the economy or hacking and promotion of ML/FT and opines that cryptocurrency is a mode of digital payment that the RBI holds the power to control. The court (Justice Rohinton Nriman, Anirudhha Bose, and V. Ramadubramanion) accepted that the RBI has wide powers; however, it declared the restrictions imposed by the RBI on banks and other entities in regard to the trading of virtual currency are inappropriate (illegal) and unenforceable, as no damage suffered by the regulated entities is shown. Similarly, in Nepal, *Sagar Baral et al. v. Prime Ministers/Council of Ministers and others* [2022] Supreme Court of Nepal was filed requesting the opinion of the court regarding the legal status of cryptocurrency in Nepal. The final decision is still pending.

law (monetary law) by including CBDC under the definition of currency⁷², currency notes, foreign currency, as well as convertible foreign currency, and negotiable instruments. Otherwise, CBDC trading may be prosecuted under the framework of misuse of foreign exchange as these issues are particularly sensitive to developing countries.

To illustrate an example of Nepal, the accused have been prosecuted for illegal cryptocurrency transactions, based on Section 17 of the Foreign Exchange (Regulation) Act, 1962 (2019 BS) [FERA] stating that they have violated the NRB (central bank's) notice. Section 17(1) states that

If any person does any act in contravention of this Act or Rules framed thereunder or order or direction or circulation or notification or any procedure as prescribed by the [Nepal Rastra] Bank, the foreign exchange related to the offence shall be forfeited and such a person shall be fined additionally from the amount in question to three-fold of such amount in question.⁷³

However, the notice has not recognized cryptocurrency as currency but accepts illegal financial instruments. The term 'financial instrument' is not defined in FERA but only in the Negotiable Instrument Act. The notice under the NRB Act (Central Bank Act) was used as a basis for violation of Section 17, which is a legal vacuum. Jurisprudentially, a notice cannot act as a substantive law to declare an action as an offence and prescribe punishment for committing it.⁷⁴ Moreover, whether the notice under the NRB Act can be considered the same as the notice under section 17 of FERA is another pertinent question.

In order to avoid this scenario and avoid CBDC being treated as privately issued counterparts, CBDC should be considered a financial instrument and as a result, the legality of payment made via CBDC to a person residing outside or the prohibition (if any) of repatriation could be known.

⁷² "Currency" can be defined as the official means of payment of a State/monetary union, recognized as such by "monetary" law. It is always denominated in the official monetary unit. "Legal tender" status is a key attribute of currency: it entitles a debtor to discharge monetary obligations by tendering currency to the creditor.

⁷³ Foreign Exchange Regulation Act [1962] (Nepal) s. 77. [FERA]

⁷⁴ See Thurman Arnold, "The Role of Substantive Law and Procedure in the Legal Process" (1932) 45 HLR 617, 630.

6.1.4 Negotiable Instrument Act

CBDC shall be recognized as currency itself rather than a mere financial instrument or financial asset. Provided that CBDC has a different science and technologies compared to the traditional negotiable instrument in practice, the *ejusdem generis* principle may not be applied to the generic names under “other monetary instrument”⁷⁵ under Acts. CBDC should not be considered as any negotiable instrument (promissory note or bill of exchange)⁷⁶ but rather shall be a direct liability of the central bank so that the concept of drawee-drawer-maker-payee-endorser, holder as well as negotiation, presentation, and endorsement would not come into play.

6.1.5 Laws Restricting Investment Abroad

Most SAARC countries restrict investment abroad either partially⁷⁷ or fully.⁷⁸ If the state has a policy to restrict investing abroad, it shall also be made applicable to CBDC in order to avoid a legal vacuum and mine those loopholes. For example, Nepal forbids any kind of investment abroad. The “investment” includes *investment in foreign securities, a partnership of a foreign firm, a foreign bank account, real estate situated abroad, or any other kind of cash or in-kind investment made abroad except specified by GON*.⁷⁹ To further consolidate the above provision, CBDC shall be included in the above provision in order that the potential investor from Nepal would not interpret the provision as giving a green signal to CBDC to invest abroad and free themselves from prosecution.

The same was the case for cryptocurrency where there were anomalies in considering it as an asset, investment, or currency. Because crypto is bought and sold as a digital asset in various exchanges abroad in fiat currencies, purchasing such crypto from abroad will result in the

⁷⁵ An example of Nepal under FERA (n 72) s. 2(d). Moreover, they are neither currency nor money but are legally used to effect payment in a commercial bank, book money, or in currency.

⁷⁶ Negotiable Instrument Act [1977 (2034 BS)] (Nepal), s. 2(f)(g).

⁷⁷ Foreign Exchange Act [No.12 of 2017] (Sri Lanka) ss. 7, 22; Regulations Relating to the Possession of Assets and Properties Outside Bhutan [1993] (Bhutan); Foreign Exchange Management Act (FEMA) [1999] (India) s. 6.

⁷⁸ Act Restricting Investment Abroad [1964] (Nepal); Foreign Exchange Regulation Act [1947] (Bangladesh) ss. 4, 5, 9.

⁷⁹ Prohibiting Investment in Foreign Country [1964] (Nepal), s. 2(a).

misappropriation of foreign currency and appears to be a violation of the foreign exchange law.

6.1.6 *Banking Laws*

For the adoption of CBDC, the banking law needs to introduce new types of banking frauds under its ambit in order that the offence ushered by advanced and new technologies would not go unregulated. The increasing use of cashless transactions and verbal communication means of banking have been adding up risks in financial transactions. The act should be able to facilitate coordination among central banks, investigating authorities with expertise in these technologies, and public attorneys, in order that it could properly identify, investigate, and prosecute new methods of fraud in the financial sector.

The criminal law protection from counterfeits shall be changed in accordance with CBDC. When somebody withdraws money from another person's account in an unauthorized manner,⁸⁰ transfer funds from a customer or make unauthorized payments,⁸¹ and obtain or make payment by way of abuse or unauthorized use of electronic means,⁸² shall be prosecuted as a banking offence under this act. This provision shall also be applied to CBDC transactions taking into account the special features of CBDC.⁸³ In Nepal, there are anomalies in laws related to electronic transactions which are governed by specific laws (Electronic Transaction Act) whose statutory penalties are lighter than those for banking law (BOPA) However, crime related to CBDC should be liable under banking law rather than other transactional or contractual law.

6.1.7 *Patent, Design and Trademark*

Apart from government assets, CBDC and its technologies can be protected through IP laws for their methods and processes. CBDC based

⁸⁰ Banking Offense and Punishment Act [2008] (Nepal), s. 5(a). [BOPA]

⁸¹ *ibid*, s. 5(c).

⁸² *ibid*, s. 6.

⁸³ Kenji Hayashi et al., 'Summary of the Report of the Study Group on Legal Issues regarding Central Bank Digital Currency' (*Bank of Japan*, 24 December 2019) <https://www.boj.or.jp/en/research/wps_rev/lab/lab19e03.htm> accessed 12 November 2023.

on specific technology can come under the purview of a patent⁸⁴ and any related symbol or word (that serves as a source indicator of CBDC) can come under the purview of a trademark.⁸⁵ The patent prosecution requirement of novelty, non-obvious, inventorship, and utility,⁸⁶ apply to the CBDC-based technology (centralized operational model) including the virtual payment technique, ledger management system, and money transfer platform as there is less prior art present. Not only the technology itself, patents can be used to protect the associated mechanism with the CBDC including the virtual currency management system, the data privacy or anti-theft scheme as well as interoperability with other payment service applications.⁸⁷

In the same line, in 2020, the People's Bank of China filed more than 80 patent applications related to e-CHY (Digital currency) which fall into 4 broad categories, namely, digital currency management, circulation and interbank settlement; digital currency wallets; processing payments and deposits; and distributed ledger transactions and technology.⁸⁸ On the other hand, VISA, an American finance service corporation, has filed a patent to create blockchain-based digital fiat currency.⁸⁹ Before the launch, or even prior to the pilot launch, CBDC can be patented. Besides these, the

⁸⁴ Patent Design and Trademark Act 1965 (Nepal), s. 2(a) defines patent as a useful invention relating to a new method of process or manufacture, operation or transmission of any material or a combination of materials, or that is made on the basis of a new theory or formula.

⁸⁵ *ibid.* s. 2(c), "Trade-mark" means a word, symbol, or picture, or a combination thereof, to be used by any firm, company, or individual in its products or services to distinguish them from the products or services of others.

⁸⁶ *Agreement on Trade-Related Aspects of Intellectual Property Rights, Marrakesh Agreement Establishing the World Trade Organization*, Annex 1C, 15 April 1994, 1869 UNTS 299, 33 ILM 1197, art. 27(1).

⁸⁷ Digital Cash, 'Crunchfish receives clean IPRP for key Digital Cash patent application' (*crunchfish*, 12 January 2023) <<https://www.crunchfish.com/crunchfish-receives-clean-iprp-for-key-digital-cash-patent-application/>> accessed 14 September 2023

⁸⁸ P. Boring and M. Kaufman, 'Blockchain: The Breakthrough Technology of the Decade and How China is Leading the way- An Industry White Paper', *Chamber of Digital Commerce* (China, February 2020) <https://digitalchamber.org/wp-content/uploads/dlm_uploads/2020/02/Blockchain-The-Breakthrough-Technology-of-the-Decade-and-How-china-is-Leading-the-Way.pdf> accessed 5 September 2020.

⁸⁹ Milko Trajcevski, 'Visa Files Patent for Digital Fiat Currency' (*Dailycoin*, 18 May 2020) <<https://dailycoin.com/digital-fiat-currency/>> accessed 1 October 2023.

computer software source code could be copyrighted.⁹⁰ A contrary view can be that the technologies should be open source and any tech, codes, or mark outside of the financial sphere or government (public) property could not be IP protected to apply for ownership. However, while applying to tender for the printing of currency, in Nepal, the central bank (NRB) needs to present a copyright certificate so, these certificates/ applications are acceptable practice.

6.1.8 *Property and Contract Law*

Retail CBDC shall be considered as “property” (movable and private) which can be used or transacted in or the title thereto by way of sale, purchase, or benefit derived.⁹¹ As with banknotes, consideration could be given to granting token-based CBDC a hybrid property law status, whereby this means of payment is considered intangible for some issues, and tangible for others (as technological infrastructure allows tracing CBDC). They should be labelled as a bank deposit deposited on a bank account with a BFI and be deposited by the latter on its current account (in the case of the 2-tier model) in the books of the central bank so that CBDC is fully integrated into the fractional reserve banking system.

Under Contract Law, first of all, there should be a clear recognition of smart/digital contracts in the laws of the state for proper implementation of CBDC. Secondly, the concept of payment shall be made to include CBDC. Payment is generally defined as the delivery by the debtor of what is owed to the creditor in terms of the agreement.⁹² In other words, payment functions as a tool to discharge an obligation by furnishing what is due.⁹³ If the parties agree on the method of payment at the time of the conclusion of the contract, such a choice will be valid. If the parties agreed on other methods of payment other than legal tender, a creditor is not under a legal duty to accept legal tender as payment. Where a debtor delivers legal tender as payment, instead of the agreed method of payment, the creditor reserves the right to refuse to accept legal tender as payment and may sue

⁹⁰ Copyright Act [2002] (Nepal), ss. 2(a)(10), 21: computer program.

⁹¹ National Civil Code [2017] (Nepal), s. 251, 252, 254, 256. [NCC].

⁹² Nicola Bilotta and Fabrizio Botti (eds), *The (Near) Future of Central Bank Digital Currencies* (volume 7, Peterland 2021) 110.

⁹³ *Harrismith Board of Executors v. Odendaal* (1923) Supreme Court of South Africa, paras. 530-539.

for a breach of contract. Parties are free to exercise their choice on the method of payment they wish to use, however, if the parties, do not agree on any method of payment and the intended method cannot be inferred, then legal tender will be the preferred method of payment by virtue of law.⁹⁴

It is worth noting that the benefit of legal tender is that where there is no underlying agreement between the parties about the preferred method of payment and the preferred method of payment cannot be inferred from the tacit terms of the contract, the legal tender will be final payment by virtue of the law. Therefore, the contract law should clarify if the payment via CBDC is a valid discharge of obligation by the debtor to the creditor qualifying CBDC as a legal tender if it is to be issued a token-based form.

6.1.9 Asset (Money) Laundering Prevention Laws

Central Banks are expected to design CBDCs and their payment systems to conform to Anti-Money Laundering and Countering Financing of Terrorism (AML/CFT) requirements (along with any other regulatory expectations or disclosure laws). This means the identity of CBDC users would need to be known to at least some authority or institution in the wider CBDC network that can validate the legitimacy of their transaction. Under the intermediate model,⁹⁵ unlike direct model, BFIs have a role to conduct AML/CFT checks and maintain guidelines for it so that the central bank would not hold granular personal data on any user, reducing the privacy concerns that could arise while holding personal user data. Central Bank needs to ensure that the ultimate responsibility for Customer Due Diligence (CDD) is delineated in the framework, and the design of CBDC should have an embedded mechanism for identifying and monitoring the transactions, as per the threshold limit⁹⁶ as applicable in the case of cash, to maintain the financial sector's integrity.

⁹⁴ *ibid*, 114.

⁹⁵ Intermediated architecture is that where a central bank records wholesale balances of its intermediaries only, thereby, less exposing it to malicious attacks, and reducing the risk of data breaches at the central bank.

⁹⁶ In terms of limits on transactions, e-CNY has tiered wallets, with different caps and transaction limits for different types of wallets, e-Naira has limits on wallet transactions and Bahamas has a limit on CBDC funds that can be held in wallets.

Apart from BFIs, financial entities/ intermediaries should have AML/CFT compliance. The laws of Nepal have the following provisions in place to ensure compliance with AML/CFT by fintech entities:

- j) Fintech entities are required to maintain records of their transactions relating to asset laundering (as required by prevailing laws and directives issued by the bank and concerned entity) and submit such reports on time to the concerned entity.⁹⁷
- k) Fintech entities are required to formulate and implement policies and procedures for compliance with AML Act and AML Rules.⁹⁸ This provision of the directive lists out certain matters that must be addressed in such policies and procedures at a minimum. They are also required to follow all Know Your Customer (KYC) obligations issued by the NRB.⁹⁹ They are to make provisions for filling up/ causing to fill up and update online for fully complying/causing to comply with the provision on customer identification to the operating wallet.¹⁰⁰ They need to comply with Threshold Transaction Report (TTC) guidelines, Suspicious Transaction Report (STR) / Suspicious Activity Report (SAR) guidelines, goAML operational guidelines, and other guidelines issued by the FIU of NRB.¹⁰¹ They are required to submit STR/SAR through the software called goAML to the Financial Information Unit (FIU) of NRB in case they notice any suspicious transaction related to ML/FT.¹⁰² However, it must be noted that since the above-mentioned guidelines have not recognized fintech entities as reporting entities, the reporting obligation of fintech entities remains unclear.
- l) Entities that conduct payment service through agents are required to submit information in relation to the responsibilities of its agents

⁹⁷ Money Laundering Prevention Act [2006] (Nepal) s. 29.

⁹⁸ Unified Directives related to Payment system [2022] (Nepal) para. 1. [Payment Directives].

⁹⁹ *ibid*, para. 1(3).

¹⁰⁰ *ibid*, para. 1(4).

¹⁰¹ Payment Directives (n 99) para. 2(1).

¹⁰² *ibid*, para. 4.

against AML/CFT along with details of the internal control mechanism to be used by such agents.¹⁰³

Moreover, the central bank, with the power to manage both CBDC and fintech entities, shall delimitate the role of fintech entities in the promotion of CBDC. As a purpose, the two-tier or hybrid architecture model¹⁰⁴ of CBDC can accommodate the role of BFIs as well as fintech entities in realizing the goal of CBDC and its subsequent implementation. Further, this law shall include disclosure norms, wallet specifications, interoperability standards, liability in unauthorised transactions, fraud, security and privacy breach, dispute resolution mechanisms, data governance standards, risk mitigation strategies, and outsourcing policies.¹⁰⁵

6.1.10 Data Protection and Privacy Matters

These issues are a matter of concern to policymakers in government and other authorities and should be considered carefully when designing CBDCs. CBDC would indeed need to be compliant with AML regulations, which rule out truly anonymous payments, however, on the other hand, CBDC should be designed to protect privacy and give users control over whom they share data with. A mid-point can be “managed anonymity” as RBI proposed in India,¹⁰⁶ where small transactions are anonymous and large-value transactions are traceable. As each digital payment leaves a transaction trail, the risk and security framework should be considered carefully. Three important consumer risks, *viz*, privacy, technical/security, and accountability risk need to be considered.

Especially in the two-tier model, the bank should regulate the CBDC

¹⁰³ Payment and Settlement Byelaw 2015 (Nepal) Byelaw 40(2)(c).

¹⁰⁴ In a hybrid architecture, intermediaries handle real-time payments while records are maintained by the central bank, which they use to transfer holdings between PSPs in the event of a technical failure. But in this architecture, the central bank needs to honour claims of which it has no record.

¹⁰⁵ Shehnaz Ahmed and Swarna Sengupta, ‘Examining the Policy and Legal Consideration of a Digital Rupee’, *Vidhi Centre for Legal Policy* (Part II CBDC blog series, 16 November 2022) <<https://vidhilegalpolicy.in/blog/examining-the-policy-and-legal-consideration-of-a-digital-rupee/>> accessed 12 November 2023. [Ahmed and Sengupta]

¹⁰⁶ *ibid*.

intermediaries by delineating the roles and responsibilities of itself and Intermediaries in such regulations. Principles for Financial Market Infrastructures (Principle 2 on Governance and Principle 17 on Operational Risk)¹⁰⁷ maybe referred to as a guideline for the same.

In Nepal, the data protection issues are governed by the Individual Privacy Act, 2018 (2075 BS) and Individual Privacy Regulation, 2020 (2077 BS) in Nepal. These provisions are also incorporated in the National Penal Code, 2017 (2074 BS). However, Nepal does not have unified data protection legislation yet that incorporates who can collect, process, and store data, the purposes for which data will be used, and if the data can be shared with other entities,¹⁰⁸ including NRB and government entities for law enforcement. Further, cross-border implications of sharing data outside Nepal may also have to be examined. An entirely new Act to govern digital currency-related data protection issues is needed for the implementation of CBDC to address the regulatory concerns such as the risk of loss, counterfeiting, a threat to privacy, and customer data protection needs and also specifies the responsible body for accessing, implementing and regulating CBDC.

From the above illustration, it is clear that prior to the introduction of the CBDC, concerned stakeholders shall carefully consider the legal foundations of CBDC when and if it is decided to introduce this digital means of payment. In some cases, broad interpretations of existing legal provisions might work while in others, a comprehensive review of monetary as well as fiscal law is required. Ideally, this takes place within a broader endeavour to review other legal issues as well including but not limited to private, criminal, and tax law.

7. ANALYSIS AND CONCLUSION

Economically, money is a unit of accounts, a means of payment used to acquire goods and services, a measure of the value of goods and services, and a store of value. Legally, till now, it refers to banknotes and coins

¹⁰⁷ Bank for International Settlement and International Organization of Securities Commissions, 'Principles for financial market infrastructures' (2012) Committee on Payment and Settlement Systems/ Technical Committee of the International Organization of Securities Commissions, 3 < <https://www.bis.org/cpmi/publ/d101a.pdf> > accessed 21 June 2024.

¹⁰⁸ Ahmed and Sengupta (n 103).

issued by the central bank and has a legal tender. Money or methods of payment from one stage to another have been developed for ease, efficiency, and convenience attached to the usage of the new advances. At its outset, e-money and digital currencies have come into existence with the emergence of new technologies. With the advent of cutting-edge technologies, the digitalization of money is the next milestone in monetary history which has made possible the development of a new form of money viz. CBDCs. Interest and work on CBDCs are global, but motivations for their potential issuance are shaped by local circumstances.

There should be a legal certainty of CBDCs otherwise it will expose the central bank and the whole banking system to legal, financial, and reputational risks. For the operation of CBDC, *first*, it should have a legal tender status and must be accepted as a means of payment by all businesses and the government. Consumers must be able to hold and transact with CBDCs without the need to hold a bank account. Existing payment systems should be present alongside CBDC and consumers need to be provided with channels to obtain or change CBDC to physical cash or commercial bank money. For convenience, CBDC must be accepted as a means of payment and allow person-to-person transfer without the need for an independent clearing and settlement body. Moreover, the transaction should be traceable and auditable in terms of proof of issuance and ownership.

Alongside the existing payment system, such as fiat currency and other e-monies, there is no doubt NRB (Central Bank of Nepal) should issue its own CBDC which would give it to stronger access to the online payment environment, allow retain its power to issue currency and supervise the financial landscape and lessen the dangers associated with the reliance on private payment systems for financial stability without stifling innovation.

The experience of CBDC with a few countries should be crucial learning for Nepal to learn CBDC, understand the technology, and policy implications, and build capacity prior to launching CBDC on its own. Some central banks have initiated pilot projects and have a trial period for the same. In some instances, it may require formal organizational changes or work with existing structures, especially in forming new committees, divisions, or research centers, as well as training the staff.¹⁰⁹ Moreover,

¹⁰⁹ More : Where People's Bank of China has created a separate Digital Currency Institute with its subsidiaries across geographical areas to organize the e-CNY

developing required infrastructures like telecommunications, software, authentication, cybersecurity, operational risk mitigation, and other technical capacities including but not limited to internet connections/coverage, mobile networks, and electricity requires huge costs to be borne by the central bank.

Apart from the institutional challenges, most people in Nepal still carry cash for their daily needs despite e-monies being available. This is mainly because e-monies are still not widely accepted in the market, particularly in retail shops, medical stores, public vehicles, and remote locations. Therefore, a complete withdrawal of physical currencies from the system seems unfeasible shortly given the current practice of its usage. Further, if people convert their physical cash into CBDC more rapidly than expected, NRB might face the challenge of storing cash as a massive volume of cash would return to the central bank's vaults. The potential role of BFIs in the CBDC ecosystem, lack of techno know-how among the general people, and issues of privacy in CBDC use are other concerns.

CBDC seems to be a herculean project for central banks for now as it requires a visionary approach to gradually shift the cash-based economy to a digital economy that demands wider political support and public acceptance. Moreover, such a CBDC instrument should be interoperable with other domestic payment systems, non-remunerative, available for use round-the-clock, quantity-capped, and programmable for broader usage options.

While the intent of CBDC and the expected benefits are well understood, the issuance of CBDC needs to follow a calibrated and nuanced approach with adequate safeguards to address potential difficulties and risks in order to build a system that is inclusive, competitive, and responsive to innovation and technological changes. In this light, CBDC aims to complement current forms of money and is envisaged to provide an additional payment avenue to users, not to replace the existing payment systems at least for now, thereby, enhancing Nepal's digital economy, making the monetary and payment systems more efficient and contribute to furthering financial inclusion.

pilots, and the central bank of Bahamas has created a new unit for Sand Dollar that works under a policy steering committee.