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Wheelchair Provision in Nepal: Kathmandu, Bagmati Province, Nepal.

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Figure 1. A young man helps a person with disability on a muddy way in Kathmandu (Source: The Kathmandu Post)1

[1] The Kathmandu Post (2023). *The week in 13 photos*. [online] @kathmandupost. Available at: https://kathmandupost.com/visual-stories/2023/09/09/the-week-in-13-photos-1694252726 [Accessed 10 Jun. 2025].

Wheelchairs as an essential mobility device for people with disabilities are well recognized whereas their postural function is often overlooked. *Gowran (2012)*[2] in the 'Sustainable solutions for wheelchair and seating assistive technology provision' argues that *"using the terms wheelchair and seating together strengthen their use as a primary and essential assistive technology grouping which cannot be replaced by the assistance of another human being."* Wheelchair and seating assistive technology (WSAT) together play a pivotal role in supporting a person's physical and mental well-being, independence, and meaningful participation in society.

Wheelchair and seating assistive technology (WSAT) is both an intrinsic and extrinsic enabler, being defined by *Gowran (2012)* as:

'An enabler both extrinsically and intrinsically for people with short-term and permanent posture and mobility impairments of body functions and structures to actively participate across the life span in everyday living. The type and complexity of the wheelchair and seating technology provided will depend on the limitations and restrictions caused to individuals' posture and mobility to personally participate within their desired environment and context.'

The World Health Organization (WHO) defines an appropriate wheelchair as one that is individually fitted, responsive to the user's physical, environmental, and lifestyle needs, and is safe, durable, and locally maintainable. Its provision must be embedded within a comprehensive service system that includes assessment, fitting, training, and follow-up care.

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[2] Gowran RJ. Guest Editorial, Irish Journal of Occupational Therapy, Special Edition Wheelchair and Seating Provision. 2012; 39(2): p. 2.

Despite its significance, WHO highlights that equitable access to and standardized provision of appropriate wheelchairs remains a global challenge. Wheelchair provision encompasses the full process of design, production, supply, and service delivery, and should adhere to the principles and protocols outlined in the *WHO Wheelchair Provision Guidelines (2022)*[3]*.*

In Nepal, where services are concentrated in urban centers and inconsistent across provinces, it urgently requires a country-specific strategy for sustainable wheelchair provision due to its unique geographic and socio-political context. Despite global guidelines, evidence suggests that wheelchair service delivery remains inefficient, with limited national legislation or structured support systems in place *(Gowran et al., 2021)*[4]*.* For example, from the *'Wheelchair provision within Romania and the Philippines'* comparative study, *Gowran et al. (2019)* identified contrasting yet equally challenging service landscapes across these country contexts. Romania operates within a centralized, medicalized system marked by bureaucratic inefficiencies, limited user participation, and a lack of trained personnel. In contrast, the Philippines relies on a decentralized, NGO-driven model, resulting in fragmented services, poor coordination, and major access issues in remote areas. Despite these contextual differences, both countries face common barriers such as inadequate policy frameworks,

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[3] Wheelchair provision guidelines. (2023). Geneva: World Health Organization; Available at: https://www.who.int/publications/i/item/9789240074521 [Accessed 22 Oct. 2023].

[4] Gowran, R.J., Bray, N., Goldberg, M., Rushton, P., Barhouche Abou Saab, M., Constantine, D., Ghosh, R. and Pearlman, J. (2021). Understanding the Global Challenges to Accessing Appropriate Wheelchairs: Position Paper. *International Journal of Environmental Research and Public Health*, [online] 18(7), p.3338. doi: https://doi.org/10.3390/ijerph18073338.

limited data systems, shortage of qualified professionals, and lack of repair services and context-appropriate wheelchairs *(Gowran et al., 2019)*[5].

Studies from diverse settings such as Ireland, Romania and The Philippines by *Gowran et. al (2017, 2019, 2021)*[6] demonstrate that tailored strategic planning - developed in collaboration with governments and stakeholders - is essential for building effective, equitable, and sustainable wheelchair services. Aligning national efforts with WHO's Global Standards and Assistive Products Specifications (APS) global guidebook can help ensure quality and contextual relevance.[7] *Gowran et al.* highlights that sustainable wheelchair service provision requires global commitment and context-specific strategies that reflect users' needs across their life course. These researchers claim that despite growing demand, access remains limited due to inconsistent regulation, insufficient funding, inadequate policy frameworks, and a shortage of trained personnel. To address these challenges, researchers suggest that countries must develop inclusive, evidence-based, and integrated systems supported by competent professionals and diverse, appropriate products *(Gowran et al., 2021).*

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[5] Gowran (2019): Developing country-specific wheelchair service provision strategic plans for Romania and the Philippines, Disability and Rehabilitation: Assistive Technology, Available at: https://doi.org/10.1080/17483107.2018.1539131

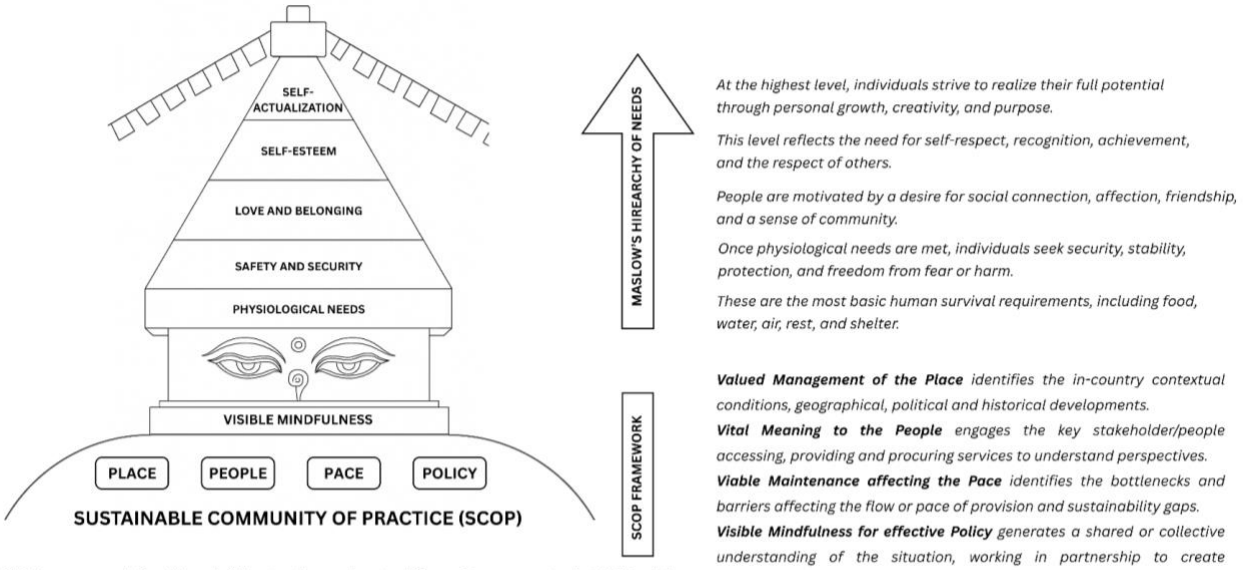
[6] Gowran, R.J., Casey, J., & Daly, J.B. (2017). Utilising a Sustainable Community of Practice Model to build best practice in Wheelchair provision on the Island of Ireland. Available at: https://pure.ul.ie/en/publications/utilising-a-sustainable-community-of-practice-model-to-build-best

[7] Assistive product specifications and how to use them. (2021). World Health Organization. Available at: https://www.who.int/publications/i/item/9789240020283. [Accessed 10 Jun. 2025].

Applying the Sustainable Community of Practice (SCOP) model *(Gowran et al., 2017)* to view wheelchair provision in Nepal, this study seeks to understand the landscape of overall wheelchair product and service provision, deep diving into its provincial situation.

This report focuses on **Bagmati Province.** The SCOP model has four interconnected dimensions which provide a foundation for countries to evaluate their current situation and build context specific platforms to support the development of appropriate wheelchair provision as a prerequisite to meet the lifestyle needs of all citizens requiring wheelchair services at any time in life.

The SCOP model four dimensions *(see figure 2)*:



SCOP Framework for Nepal (Illustration adapted from Gowran et. al. 2012 with permission)

Figure 2. Model for Building a Sustainable Wheelchair Community of Practice (SCOP) where Place, People, Pace and Policy remains the foundation for human needs (Gowran et al., 2017).

For overall background information on the Situational Analysis of Manual Wheelchair Provision process, please refer to this report.

Valued Managment of the Place (context):

Bagmati Province

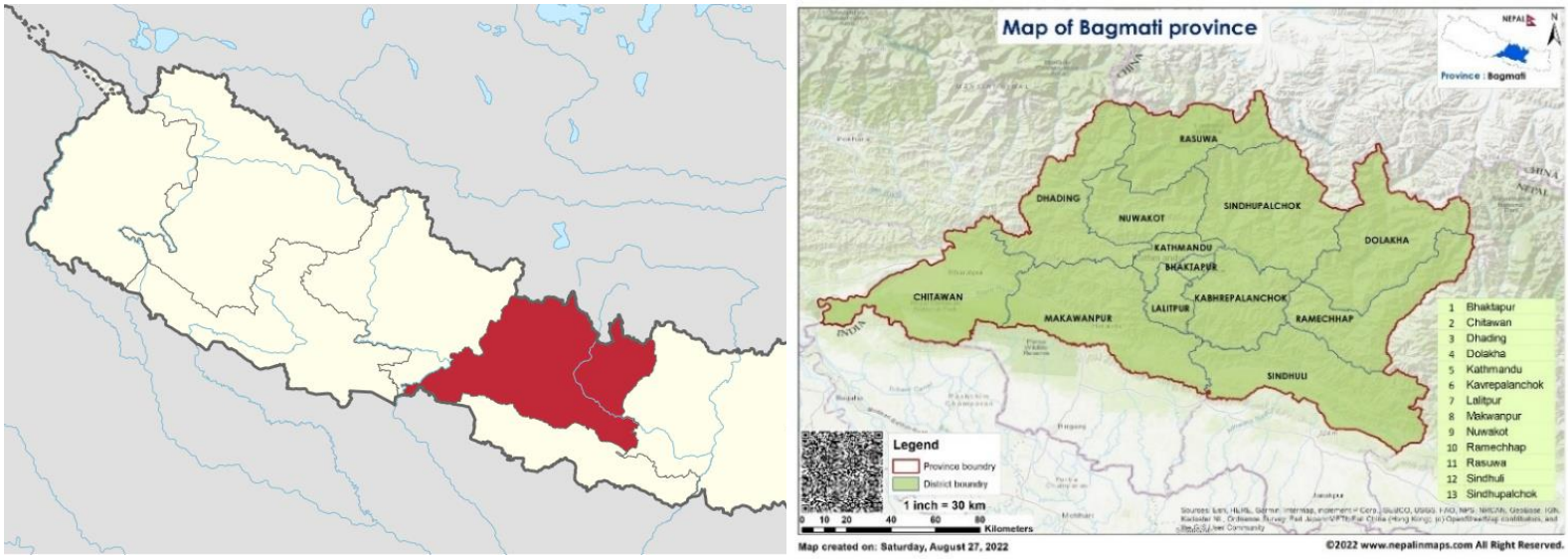


Figure 3. Bagmati Province in the map of Nepal (Source: Nepalinmaps)

This dimension presents Bagmati province identifying the contextual conditions and infrastructure from a geographical, political and historical perspective.

Geography, Culture, and Population

Bagmati Province, situated in central Nepal, encompasses a diverse geographical landscape, ranging from the Kathmandu Valley to the foothills of the Himalayas and the plains of the Terai. It boarders with Tibet Autonomous region of China in the North and Madhesh Province towards South. The province, home to the country's capital, Kathmandu, is the most densely populated region in Nepal, with a population of approximately 6 million as per the National Population and

Housing Census 2021 *(NPHC 2021, 2023)*[8]. Bagmati represents a mix of urbanized districts like Kathmandu, Bhaktapur, and Lalitpur, alongside rural areas in regions such as Makwanpur, Sindhupalchowk, Nuwakot, Dolakha and Ramechhap, highlighting both infrastructural advantages and accessibility challenges. As per the recent census data 2021, 77.3% of its population live in urban municipalities while 22.7% live in rural municipalities. The province is rich in cultural, linguistic, geographic and ethnic diversity which is mirrored in the ethnic composition of the population, which includes communities such as Newar, Tamang, Brahmin, and Chhetri.

Disability Rates and Trends

According to the *2021 census*, approximately 2% of Bagmati Province's population lives with some form of disability, slightly below the national average of 2.2% *(NPHC, 2021)*. This demographic is diverse in terms of disability types, ranging from physical and sensory disabilities to intellectual disabilities. Physical disability remains the highest cause amongst 35.1% of the disabled population, 4% lower than the national average, followed by low vision amongst 18% of this group.

However, the *2022 Nepal Demographic and Health Survey (NDHS, 2022)* found that 7% of its population in Bagmati Province had some or significant functional difficulties indicating higher disability rates in Nepal. This figure is even higher, up to 27% in the older population. With

[8] National Population and Housing Census 2021 (National Report). (2023). [online] Ramshahpath,Thapathali, Kathmandu, Nepal: National Statistics Office. Available at: https://censusnepal.cbs.gov.np/results/files/result-folder/National%20Report_English.pdf [Accessed 10 Jun. 2025].

increasing elderly population globally including in Nepal, the rate of disability is going to increase over the years. The report also found that disability prevalence varied by socio-economic status and education, with significantly higher rates among those with no formal education and those from the poorest households.[9]

Urban areas in the province provide relatively better access to disability services, with specialized hospitals, rehabilitation centers, and assistive device providers concentrated in cities like Kathmandu. However, rural and hilly areas still experience significant gaps in disability services, including a lack of accessible transportation and healthcare infrastructure. *'The Situation Assessment of Rehabilitation in Nepal'* report revealed highly uneven distribution of rehabilitation professionals. For example, the concentration of Physiotherapists, who are the key rehabilitation personnel in the country is at least 75% in Bagmati Province, primarily within urban centers like Kathmandu, limiting access in rural and remote regions. This figure is around 1 physiotherapist per 1,500 people in the province *(EDCD, 2022)*.[10]

Economic Activity

[9] Ministry of Health and Population [Nepal], New ERA, and ICF. 2023. Nepal Demographic and Health Survey 2022. Kathmandu, Nepal: Ministry of Health and Population [Nepal]. Available at: https://microdata.worldbank.org/index.php/catalog/5910/related-materials [Accessed 10 Jun. 2025].

[10] EDCD. (2022). Situation Assessment of Rehabilitation in Nepal. [online] Available at: https://edcd.gov.np/resource-detail/situation-assessment-of-rehabilitation-in-nepal [Accessed 29 Jun. 2024].

Bagmati Province is Nepal's economic center, with significant contributions from tourism, manufacturing, and services. Kathmandu, as a popular destination, attracts both domestic and international tourists, providing job opportunities in hospitality, trade, and cultural industries. As per the recent census *(NHPC, 2021)*, agriculture remains a predominant sector, with 36.9% of its population engaged in farming. The economic dynamics within the province influence accessibility for disabled individuals, as urban wealth concentration supports a wider array of disability services, while rural economic limitations often restrict access to assistive technologies and rehabilitation facilities. As per the national census report, 2.5% of the population in Bagmati Province reported disability/illness as the reason for not being economically active *(NHPC 2021 Provincial Report Bagmati Province, 2023).*[11]

Figure 4. Farmer in rural Nepal preparing land for cultivation with a power tiller, illustrating the gradual shift toward mechanized farming in the Himalayan foothills.

[11] National Population and Housing Census 2021 Provincial Report (BAGMATI PROVINCE). (2023). [online] Ramshahpath,Thapathali, Kathmandu, Nepal : National Statistics Office . Available at: https://censusnepal.cbs.gov.np/results/files/result-folder/province/Bagmati_Province_census_report.pdf [Accessed 10 Jun. 2025].

Wheelchair Provision Landscape

Bagmati Province, home to Nepal's capital city Kathmandu, has the most extensive wheelchair service infrastructure in the country. According to the *Situation Assessment of Rehabilitation in Nepal (EDCD, 2022)*, approximately 75% of Nepal's rehabilitation professionals and assistive technology services are concentrated in Bagmati, largely within urban areas such as Kathmandu, Lalitpur, and Bhaktapur. This centralization has enabled the growth of specialized service providers - including rehabilitation hospitals, assistive product distributors, and prosthetic and orthotic workshops - resulting in relatively higher availability of wheelchairs and associated services compared to other provinces. Facilities such as the Spinal Injury Rehabilitation Centre (SIRC), National Disabled Fund (NDF), Hospital for Rehabilitation of Children with Disabilities (HRDC) and numerous private-sector rehabilitation clinics contribute to a robust, though highly urban-centric, service ecosystem.

Yet, there are notable gaps and challenges in Bagmati Province. Government expenditure on rehabilitation constitutes only 0.2% of total health financing, with approximately 95% coming from external development partners. The rural districts of the province continue to experience barriers to access, including inadequate road connectivity, limited public transportation options, and the absence of community-based wheelchair distribution and repair programs *(EDCD, 2022).* These disparities are further compounded by socioeconomic inequalities, as wheelchair users in rural and peri-urban areas often rely on ad-hoc NGO support or must travel long distances to access suitable assistive technology services. This dependency compromises

long-term sustainability and ownership of the health system projects in Nepal *(Nepal National Priority Assistive Product List [PAPL], 2018).*[12]

The *PAPL (2018)*, developed by the Ministry of Health and Population (MoHP) and the World Health Organization (WHO), lists manual wheelchairs and related mobility aids as essential priority products requiring standardized provision, trained personnel, and community-to-tertiary referral systems. Availability, affordability, and quality control of assistive products such as wheelchairs remain problematic in Nepal. Private providers dominate the market, and there is a significant lack of standardized quality guidelines and efficient procurement systems, exacerbating accessibility issues *(PAPL, 2018).*

Moreover, the 2022 assessment by the *Epidemiology and Disease Control Division (EDCD)* highlights that rehabilitation services have yet to be systematically integrated into provincial public health reporting systems, despite ongoing efforts to embed assistive technology indicators within the *Health Management Information System (HMIS).* This suggests that regular monitoring of wheelchair distribution, use, and maintenance has not been formalized at the provincial level. While *WHO's Training in Assistive Products (TAP)* program is being introduced, its implementation across Bagmati Province remains limited, with only infrequent training efforts led by local NGOs and INGOs in an ad hoc manner.

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[12] Priority Assistive Product List of Nepal. (2018). [online] Teku, Kathmandu, Nepal : Government of Nepal Ministry of Health & Population. Available at: https://cdn.who.int/media/docs/default-source/assistive-technology-2/priority-assistive-products-list/nepal_nationalpriorityassistiveproductlist22ef6d46ef7a4079a5d2e279010a27fd.pdf?sfvrsn=9b669404_7 [Accessed 10 Jun. 2025]. Improving Access to Assistive Technology for People of Nepal.

The existing data validates the critical need for a more inclusive and well-resourced rehabilitation infrastructure across Nepal. Key priorities should include the expansion of rehabilitation services within public health facilities, increased allocation of financial resources toward assistive technologies, and enhanced rehabilitation training across diverse professional domains. The strategic direction for Nepal's health sector emphasizes equitable access and improved quality of services as fundamental to achieving universal health coverage, yet current rehabilitation provisions do not sufficiently reflect these priorities. Hence, it is important to understand the current situation of wheelchair provision in Nepal before carrying out any actions in this sector to ensure product and service sustainability now and in the future.

Vital Meaning to the People

This dimension utilises the *Soft Systems Approach (SSA)*[13] by identifying and engaging with key stakeholders i.e. the people accessing, providing and procuring wheelchair services to understand perspectives.

Participants Selection

Wheelchair service providers in Nepal are either heavily centralized or scattered and hence hard to reach in remote areas of the country. Stakeholder involvement was conducted in two stages:

Figure 5. Prof. Rosemary J Gowran presenting the SCOP framework and using SSA 'Rich Picture' methodology during an inclusive participatory workshop in Nepal.

Stage 1: Stakeholder identification and individual interviews (details provided in separate report)

In stage 1 participants were recruited first following purposive sampling and then through snowball sampling to identify stakeholders. Some of these stakeholders were *Hospital for rehabilitation of children with disabilities (HRDC), Spinal Injury Rehabilitation*

[13] Checkland, P., Scholes, J., 1999. Soft Systems Methodology in Action. Wiley, Chichester, UK.

Centre (SIRC), Gorkha Welfare Trust (GWT), International Nepal Fellowship (INF), United Mission Nepal (UMN), etc. for an individual interview (N=14). Individuals and institutions interviewed during stage one were consulted for provincial participants' identification. Some of these institutions included: *Centre for Disabled Children Assistance (CDCA); Kathmandu University Design Lab in Kathmandu; Infinity Lab at Chitwan, Karuna Foundation Nepal (KFN) in Koshi Province; Independent Living Centre (CIL) in Pokhara and Spinal Cord Injury Network Nepal* for Spinal Injury wheelchair user identification. These institutions have active presence in the disability sector, primarily in the wheelchair distribution and repairs in Nepal. Participants were informed through phone calls to wheelchair users and wheelchair suppliers, and by sending a formal invitation letter to the DPOs/NGOs and government offices.

Key themes were identified following analysis of individual interviews and presented as part of the introductory session during workshops in *stage 2.*

Stage 2: Provincial Participatory workshops with Rich Pictures: Bagmati Province

Stakeholders were invited to participate in a one-day workshop in Kathmandu. The purpose of the workshop was to engage participants in reflection and collaborative discussion about wheelchair provision in the province, to identify service flow, bottlenecks, and systemic enablers, through facilitated discussion and *'Rich Pictures'*

Participants: There was a diverse and inclusive participation of 27 people in Kathmandu, Bagmati Province *(See table 1)* with representation from Wheelchair User groups, the Local Government, Service Provider institutions such as hospitals, OPDs, NGOs and rehabilitation centers and wheelchair suppliers. Among these, 30% were female and 10 people out of 27 participants stated they had a disability. The 5 wheelchair users who attended the workshop

were involved in diverse occupations, with most of them engaged in the wheelchair sector. 2 of the wheelchair users were wheelchair repair technicians and 1 was a wheelchair supplier.

Table 3. Workshop participants summary – Kathmandu, Bagmati Province

Participation	**Female**		**Male**		**Grand Total**
	Disability		**Disability**		
Sector	**No**	**Yes**	**No**	**Yes**	
Local Government	**2**				**2**
Policy Maker	2				2
Service Provider	**4**	**1**	**11**	**4**	**20**
Policy Maker			1	1	2
Rehabilitation Provider	4	1	9	3	17
Wheelchair Technician			1		1
User		**1**		**4**	**5**
Officer		1			1
Supplier				1	1
Artist				1	1
Wheelchair Technician				2	2
Grand Total	**6**	**2**	**11**	**8**	**27**

Workshop Delivery

Facilitators: The workshop was facilitated by researchers from University of Limerick, Ireland (RJG) the Global Disability Innovation Hub, UK (RCT) and Kathmandu University (AT). The sessions were conducted in both English and Nepali to enhance inclusivity and comprehension among participants.

Venue: An accessible venue (Yellow Pagoda Hotel) with lifts and step-free toilet access was chosen for the workshop in Kathmandu.

Workshop: The workshop ran from 9am to 3pm (6 hours) with 1 hour of lunch break in between. The detailed itinerary of the workshop is outlined in *table 2* below. During the workshop, participants were divided into four small mixed stakeholder groups. including policymakers, representatives from non-governmental and organizations of the person with disability (NGOs/OPDs), and wheelchair users, to ensure a broader representation of perspectives.

Table 4. Structured itinerary of the Kathmandu-based workshop aimed at understanding the current landscape of manual wheelchair provision in Nepal.

Time	**Agenda**
08:00 – 09:00 AM	Breakfast and Check-in
09:00 – 10:00 AM	Registration, Welcome, Introductions, Workshop Orientation
10:00 – 10:30 AM	Presentation of Preliminary Findings from the Interview Process and Observations (Introducing Key Concepts)
10:30 – 12:00 PM	Wheelchair Service Understanding (4 Questions) – Group Discussions (30 mins each)
11:10 – 11:30 AM	High Tea during Discussions
12:00 – 01:00 PM	Lunch Provided
01:00 – 02:00 PM	The 'Rich Picture' Activity – Group Work to Illustrate Wheelchair Service Experiences
02:00 – 02:30 PM	Reflection and Discussion – Group Presentations on Rich Pictures
02:30 – 02:45 PM	Plan of Action – Key Priorities and Next Steps for Consensus Building
02:45 – 03:00 PM	CDCA Presentation – Short Introduction

03:00 – 03:10 PM	Design Lab, Kathmandu University – Short Introduction
03:10 – 03:30 PM	Close and High Tea with Networking

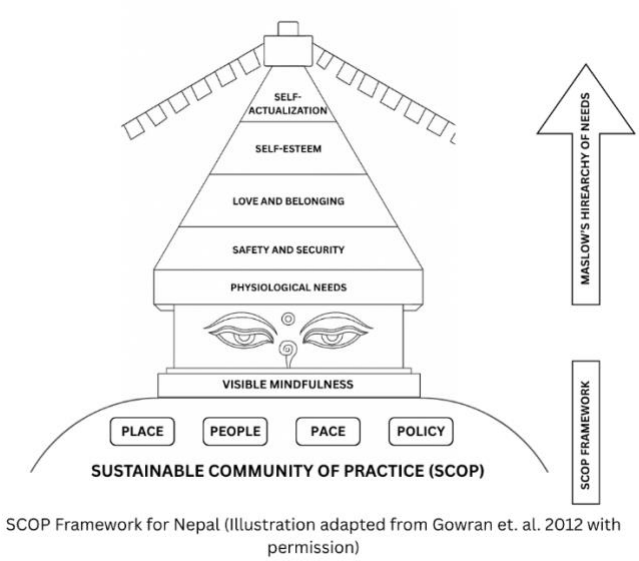
The workshop consisted of two main sessions:

Session 1:

Participants were divided into small mixed groups on round tables and provided with flipcharts and materials, and engaged in discussions structured around four reflective questions to capture an understanding of wheelchair provision locally.

Prior to the discussion participants were introduced key concepts from the SCOP model (*figure 6)* and the WHO's '5P' people-centred model *(figure 7)* presented in the *Global Report on Assistive Technology (GReAT) – (UNICEF,2022)*[14]*.*

[14] Global report on assistive technology. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF), 2022. Licence: CC BY-NC-SA 3.0 IGO.



SCOP Framework for Nepal (Illustration adapted from Gowran et. al. 2012 with permission)

Image 6. Sustainable Wheelchair Community of Practice (SCOP) model remains the foundation for human needs (Gowran, 2012)

Image 7. The WHO '5P'People-centred assistive technology model: People, Products, Provision, Personnel and Policy extracted from WHO GReAT report (UNICEF, 2022)

Session 1 discussion questions focused on:

- Current Wheelchair Services Landscape
- Stakeholder Identification and Their Roles
- Barriers Affecting Service Flow
- Stakeholder Sentiments and Perceptions
- Each group nominated a spokesperson to present key reflections to the plenary. Participants had an opportunity to discuss after each presentation.

Session 2: Rich Picture Creation

Following the morning session discussion, participants engaged in creating rich pictures using tools for collage including coloured paper, pens, glue and scissors. The *'Rich Picture'* is a participatory activity where stakeholders produce a visual representing the current state of wheelchair provision in their region. Adapting this concept from the SSA, *Gowran et al. (2014)*[15] proposes the use of creative materials to create images that depict key stakeholder perspectives, identifying issues and service challenges, and interactions and linkages between keys actors.

[15] Encarnação P, Gowran RJ, McKay EA, O'Regan B. Sustainable solutions for wheelchair and seating assistive technology provision: Presenting a cosmopolitan narrative with rich pictures. Technology and Disability. 2014;26(2-3):137-152. doi:10.3233/TAD-140408

The objective of the rich picture is to facilitate open dialogue and shared understanding, promoting a holistic view of the challenges and opportunities in the wheelchair service landscape, locally and nationally. This exercise is essential in grounding future action plans in lived realities and visual systems thinking.

Each group subsequently presented their findings to the larger workshop assembly. These presentations were recorded, transcribed, and analyzed using *Braun & Clarke's (2006)* thematic analysis approach[16]. This method allowed for the systematic identification of themes, providing a nuanced understanding of the wheelchair provision landscape in Bagmati Province. Findings and observations from the workshop are outlined in the sections below. The insights from this analysis contribute to actionable recommendations to improve wheelchair access and support systems in the region.

[16] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Viable Maintenance Affecting the Pace

This dimension depicts the current situation of wheelchair provision in the Bagmati province, identifying the bottlenecks and barriers affecting the flow or pace of provision and sustainability gaps.

This section summarises of findings from workshop discussion base on the four key questions and Rich Pictures and presents emerging themes.

Current wheelchair services landscape

The landscape of wheelchair services in Bagmati Province is marked by fragmentation, limited access, and inadequate support systems. Participants consistently emphasized that appropriate wheelchairs are scarce and expensive, with most users receiving donations that do not meet their individual needs. One group shared:

"Wheelchairs are expensive due to lack of local manufacturing and the cost of importation is high. Some universities and institutions have piloted or prototyped wheelchair production as a project but haven't manufactured it."

This mismatch in supply and demand disproportionately affects users reliant on charitable distributions. Despite some university-led prototype efforts, Nepal lacks sustained local production, leading to overdependence on imports and inconsistent quality. Furthermore, participants reported that repair and maintenance services are sparse, and there are few trained technicians to provide ongoing support. A team shared:

"There is a problem in repair and maintenance of wheelchairs. Very recently, some institutions (NGOs) have begun repair initiatives but that's inadequate. There is a shortage of skilled wheelchair technicians/professionals."

A critical challenge identified was the absence of a centralized and reliable data recording system, resulting in some individuals receiving multiple wheelchairs while others are entirely neglected. This unequal distribution has led to widespread dissatisfaction amongst stakeholders. It can be clearly understood from this team's statement:

"We lack appropriate data of users and distribution. The situation is that some users receive up to 4-5 wheelchairs while some users receive no wheelchair at all. There is inequal distribution of resources resulted by lack of data and recording."

Moreover, physical and bureaucratic inaccessibility was described as pervasive, with respondents remarking,

"Complex and lengthy government procedures are causing challenges in wheelchair provisioning."

"Physical infrastructure and environment are not disability friendly."

Stakeholder identification and roles

Stakeholders in the wheelchair service ecosystem span across government, non-governmental actors, and end-users, yet their roles are poorly coordinated. The primary stakeholders include wheelchair users, Organization of the Person with Disabilities (OPDs), NGOs, INGOs, donor groups (e.g., Rotary Clubs), healthcare professionals, and three tiers of government (Local, Provincial and Federal).

Figure 8 below illustrates a multi-level framework involving key actors at the '*Policy Level'*, such as the Ministry of Health and Population (MoHP) and the Ministry of Women, Children and Senior Citizen (MoWCSS), among others. The '*Service Level'* includes hospitals and rehabilitation centres (e.g., HRDC, SIRC, SGCP), welfare societies (e.g., CDCA, SDSS), healthcare professionals (PTs, OTs, P&Os), NGOs, OPDs, donors, suppliers, and corporate

houses. At the core, the '*Society Level'* focuses on the users - comprising user groups, self-help groups, and families - who are central to the system.

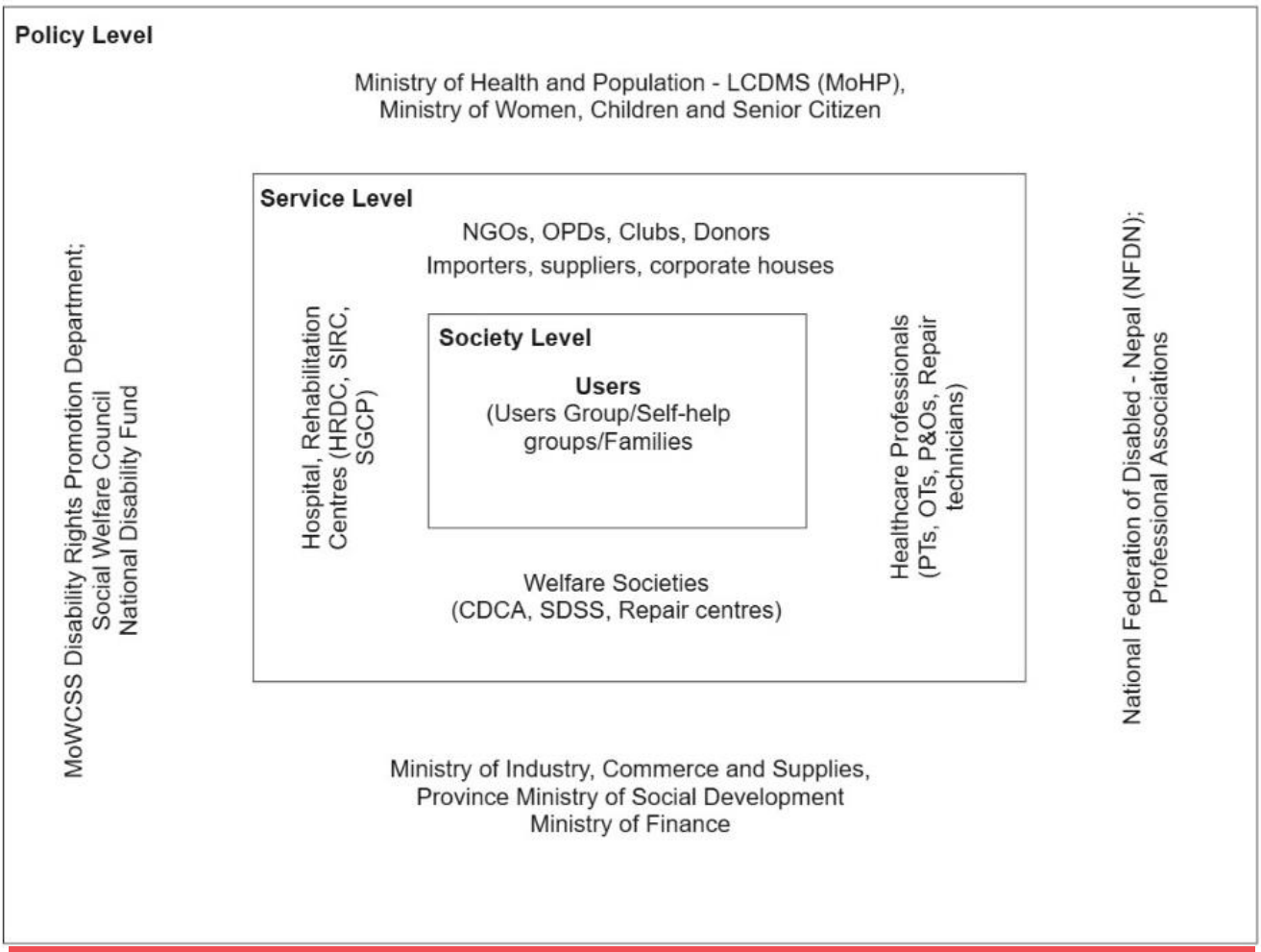


Figure 8. Framework illustrating the multi-stakeholder architecture in Nepal's wheelchair provision ecosystem, identifying roles across policy, service delivery, rehabilitation, and end-user engagement.

Despite this wide array, participants emphasized that many donor agencies and NGOs lack awareness of appropriate wheelchair standards, distributing devices unsuited for user needs. Governmental agencies, notably *the Ministry of Women, Children and Senior Citizens (MoWCSC) and the Ministry of Health and Population (MoHP),* were identified as key policy players, but their engagement appears insufficient and uncoordinated. As one group stated, distribution is random and often done for publicity purpose.

"In the name of distribution, government agencies distribute inappropriate wheelchairs whatever is available… they provide 20" size wheelchair to a child….and share across social media platforms."

Additionally, the Social Welfare Council (SWC) plays a regulatory role in import permissions, while the private sector (suppliers, importers) remains underutilized in collaborative efforts. One of the team criticized the position of government as being passive and can be understood from the following statement:

"Our first stakeholder is the government and if government does not perform its leadership and governance role well then it affects (us) service providers and users."

There is also a glaring lack of effective user representation at policy levels, hindering inclusive decision-making. This can be understood from this expression:

"……there is no effective and impactful representation of wheelchair users and service providers/DPOs in major platforms [discussions]."

Barriers affecting service flow

Multiple systemic barriers impede the effective provision of wheelchair services in Bagmati Province. First, participants repeatedly emphasized gaps in policy implementation, citing that

while acts and guidelines exist, *“they are not implemented and are limited to paper.”* Procurement regulations also restrict flexibility, as Nepal’s Public Procurement Act does not permit the import of reconditioned wheelchairs, limiting affordable options. Furthermore, infrastructure inaccessibility, complex geographic terrain, limited rehabilitation centers, and weak referral systems exacerbate user challenges. A key concern was the lack of awareness among users and providers regarding the types of wheelchairs needed for specific conditions, such as spinal injuries. One participant remarked,

“I’m not aware of what wheelchair is required for spinal injury patients… if government could provide customized wheelchair and cushion, it would give me means to live a better life.”

Additionally, poverty, unemployment, and educational gaps intersect with disability to deepen marginalization. The repair ecosystem is weak due to the scarcity and high taxation of spare parts. There is also a lack of evidence-based research, resulting in service models struggling to evolve. Finally, political favoritism and random distribution mechanisms weaken equity and credibility in the system.

Stakeholder sentiments and perceptions

Stakeholder sentiments about wheelchair services in Bagmati were largely negative, marked by dissatisfaction, frustration, and a sense of neglect. Participants voiced concerns about lack of awareness, inefficient bureaucracy, and non-inclusive service design. One group shared that access to wheelchairs and their service experience depends on 'affordability'. The group shared:

"For those who can afford services, process is good. One can order and buy. But for those who can't afford the wheelchair service process is not good."

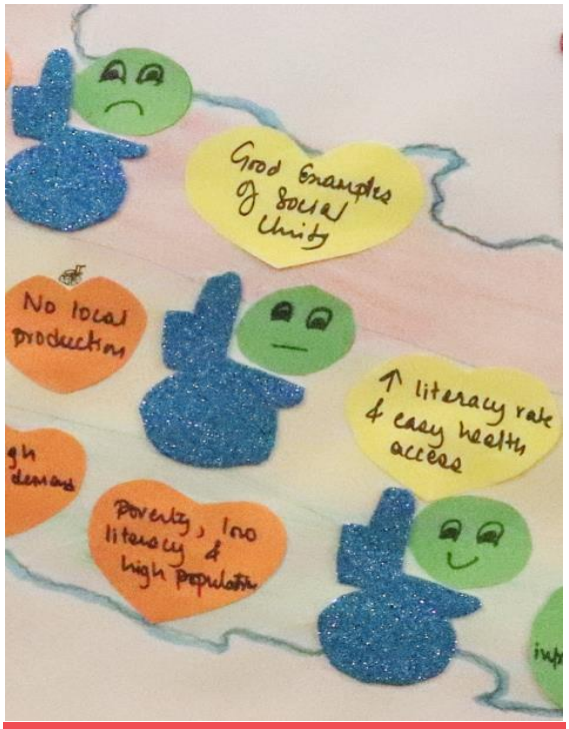


Figure 9. Rich picture portraying varying user satisfaction across terrain.

A female wheelchair user who acknowledged past supports from donor expressed her dissatisfaction with following remarks:

"Relatively, I have received lots of support, and I say wheelchair service is somehow okay, but I'm not satisfied."

Another group portrayed varying user satisfaction across geographic terrain of Nepal which decreases with rise in altitude *(see figure 8)*. As per the picture and their statement,

"In Terai (plain), wheelchair users might be happy or satisfied. While users in hilly region (mid hills) may be somehow satisfied and those in the mountains (high hills) may be unsatisfied."

This reflects the broader problem of mismatched service delivery. Nonetheless, there were also calls for opportunity and reform, with some noting successful local initiatives by the local government such as *Gokarneshwor Municipality's free wheelchair repair center,* which could

be a replicable model. Despite challenges, participants displayed hopeful outlooks for change, asserting that inclusive discussions and national strategies are necessary to ensure user dignity and quality of life.

An Initiative: Local Government Supported Wheelchair Repair Centre

Figure 10. Wheelchair repair centre run by Gokarneshwar Municipality at BIA, Jorpati, Kathmandu.

Following the workshop, a visit to the repair center was made by GDI hub researcher (RCT) with the objective of understanding more about it. It is worth highlighting this initiative.

Participants from the *Gokarneshwar Municipality* and those who were aware of the local government's repair initiative acknowledged positive change sprouting in Kathmandu and they wished for its adoption across other local governments.

The positive initiative highlighted was the *"free repair center established by Gokarneshwar Municipality"* in Kathmandu, which employs a spinal injury wheelchair user to provide essential repair and maintenance services for other users within its administrative region, serving as a potential model for other local governments to replicate. Here, local government supports repair space, tools and technician's salary and partially fund for spare parts. Whereas users contribute for the required spare components. Such efforts by the local government is highly praised by the participants as it impacts users life greately.

A group shared:

"I think Gokarneshwar Municipality in Kathmandu is the first local government in Nepal to

Based on discussions and reviewing the Rich Pictures produced, the *WHO's 5P framework* was used to capture the key themes under the following headings: *People, Products, Provision, Personnel and Policy.*

People

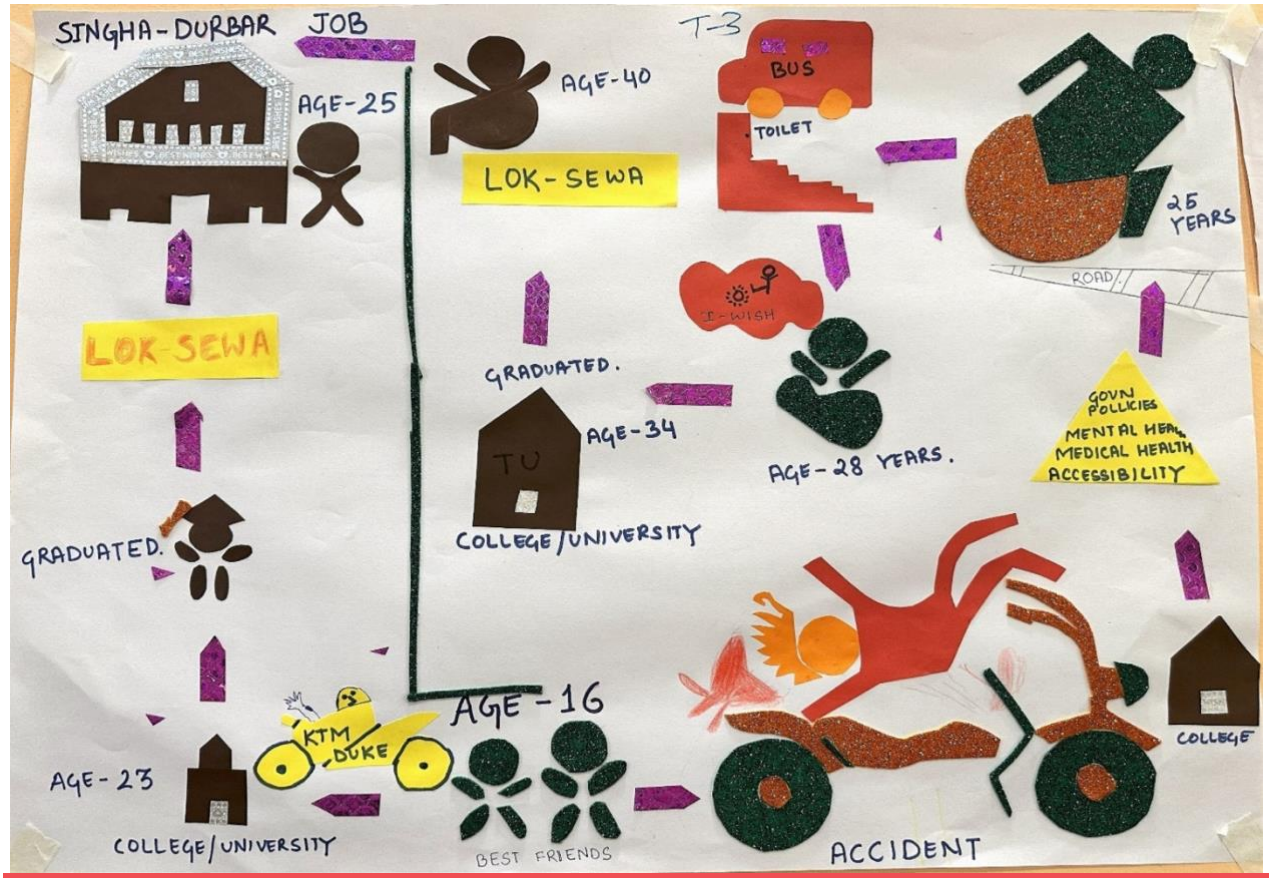


Figure 11. This Rich picture portrays a contrasting life trajectory of two best friends who both have motorbikes, person (left) takes a typical journey and person (right) has a motorbike accident at the age of 16 becoming a wheelchair user thereafter faces many barriers delaying access to education and employment with a 15 years lag to reach independence compared to his friend.

At the center of the wheelchair provision system are the individuals who require lifelong mobility and postural support. In Bagmati Province, wheelchair users often

face compounded disadvantages shaped by socio-economic, geographic, and infrastructural barriers.

This powerful visual story *(figure 11)* from the workshop portrays the life trajectories of two best friends starting at age 16. On the left, one friend takes a smooth path - he attends college and university uninterrupted, takes the Public Service Commission exam, and secures a job at Singha Durbar (symbol of public administration) by age 25.

Whereas, on the right, his best friend meets with an accident - symbolizing poor road conditions and systemic negligence - which results in a disability requiring wheelchair use. His life is abruptly altered. The journey toward recovery and participation becomes long and delayed. He faces layers of barriers: *inaccessible public infrastructure, limited access to rehabilitation, mental health challenges, policy gaps, and unavailability of assistive devices.* It takes until age 25 to receive a wheelchair, and until age 28 to re-enter higher education. Only at age 40 does he sit for the same public service exam his friend passed at 25.

This 15-year disparity is visually and emotionally captured in the diagram - highlighting how exclusionary systems delay opportunity. Despite eventual triumph - graduation, employment, and sports participation - his journey was prolonged and avoidable.

The message is clear: equity in mobility must begin with inclusive infrastructure, timely assistive provision, and systemic reform.

Following themes further expands on wider issues faced by wheelchair users and in general people involved in wheelchair provision both locally and nationally.

Poverty amongst users resulting in widespread charitable distribution

Many wheelchair users and their families live in poverty and rely on charitable donations due to their poor economic conditions, creating a mindset of dependency. *“Poor economic status/situation of users and their families”* were recurring themes across all groups. As presented by a group, *"Wheelchair is perceived as a charitable product by the user,"* which leads to difficulties in accessing the right wheelchair. Poverty severely limits access to quality assistive devices, especially when users cannot afford repairs or maintenance. As mentioned by a group, *“Wheelchair repair costs are unaffordable for most users, leading to abandonment of devices after minor breakdowns.”*

Data gaps resulting in unmatched needs

The lack of accurate data on the number of wheelchair users or people requiring wheelchairs hinders effective service provision and planning. This possesses a challenge in equitable resource allocation. The following quotes highlight the consequences of not having proper data on users, products and disability issues.

“We lack appropriate data of users and distribution. Some users receive up to 4-5 wheelchairs while others receive none. We could envision a one-door system for wheelchair distribution.”

“There is a significant data gap in user demand and product availability, leading to unequal distribution.”

Participants reported a significant mismatch between wheelchair type and individual need, which not only undermines physical mobility but compromises self-dignity and social participation. One participant stated:

“In the name of distribution, inappropriate wheelchairs are given. They invite people and give 20-inch wheelchairs to children. What good is that?”

Proper data collection is essential for equitable resource allocation, preventing duplication, and ensuring that all users in need receive appropriate wheelchairs.

Communication and coordination gaps

Coordination between service providers and wheelchair users is inadequate, resulting in users being unaware of where to access appropriate services. For example, a user said, *"There is no information on where wheelchairs are available,"* signaling failures in communication, outreach, and referral pathways. This issue stems from poor record-keeping and lack of a unified system to manage distribution. This eventually impacts end users, as a group noted, *“There is a coordination gap between different service providers (and beneficiaries), which eventually impacts user groups.”*

Challenges due to geography and infrastructure

The terrain and lack of accessible infrastructure hinder mobility as a group said, *“Inaccessible physical infrastructures and Nepal’s geographical challenges cause problems in wheelchair mobility.”* Users face significant barriers in accessing services because of complex geographic terrain, inadequate public infrastructure, and widespread poverty. Users *"face challenges everywhere due to complex geography, poor infrastructure, and poverty,"* which makes service delivery extremely difficult.

Exclusion, Stigma and Attitudes: Social attitudes can marginalize wheelchair users, creating barriers to inclusion and self-determination. Users often experience inappropriate behaviour from the public, such as receiving unsolicited help without consent. One wheelchair user shared, *“People often don’t take consent before assisting wheelchair users, showing a lack of respect for autonomy.”* This reinforces dependency rather than empowerment.

Wheelchair users and disability-focused institutions are often excluded from policy-making processes as their representation is often limited. As a group mentioned: *"There is no effective and impactful representation of wheelchair users and service providers/DPOs in major platforms."*

This leads to a disconnect between the needs of users and the policies designed for them. This is also evident from a wheelchair technician who is also a user who voied: *“I am a wheelchair user and a technician too… but I have never been consulted about what really works for us.”*

Lack of training and awareness

Both service providers and users alike are inadequately informed about wheelchair provision processes and appropriate assistive technology. Referring to the limited understanding of the term 'Appropriate wheelchair', one team criticized it being the hurdle for proper service provision.

"*Limited awareness about appropriate wheelchairs amongst users, sellers, distributors, service providers, government, and family members of wheelchair users.*"

This user voice also supports the above argument:

"Wheelchair users like me are unaware of what kind of wheelchair is required for us….. For example, I am not aware of what wheelchair is required for spinal injury patients and if government could provide customized wheelchair and appropriate cushion based on my needs, it would give me means to live a better life."

The users and their families also lack awareness on proper wheelchair hygiene and daily maintenance issues, and they often arrive for repair at *'last minute'* when the damage is critical. Awareness and training among stakeholders ensure that users receive suitable, safe, and effective devices and services.

"Lack of knowledge regarding proper wheelchair fitting and repair impedes service quality."

Health and Livelihood impacts due to Delayed Services

Many users miss critical opportunities because of delays in receiving wheelchairs. A group quoted, "*Wheelchair access is a lengthy and tedious government procedure, and it's not prioritized by the government sector,"* This suggests that delays arise from systemic failures. Service delays can cause severe health impacts. This was understood from a group who shared,

"Due to delays (in service), wheelchair users face psychological and social consequences from prolonged immobility."

The lack of timely access to services and proper rehabilitation impacts users' mental health and social well-being. One group mentioned referring to a recent study that, *"Spinal injury patients die after 2 years without proper rehabilitation, leading to depression and decreased quality of life."*

Distinction between life trajectories of disabled person and their abled friend/colleague was heavily portrayed in the rich picture which depicted up to 15 years of opportunity cost for disabled users to achieve similar level of independence in life. Timely services are crucial to prevent deterioration in users' mental health, independence, and overall quality of life.

Product

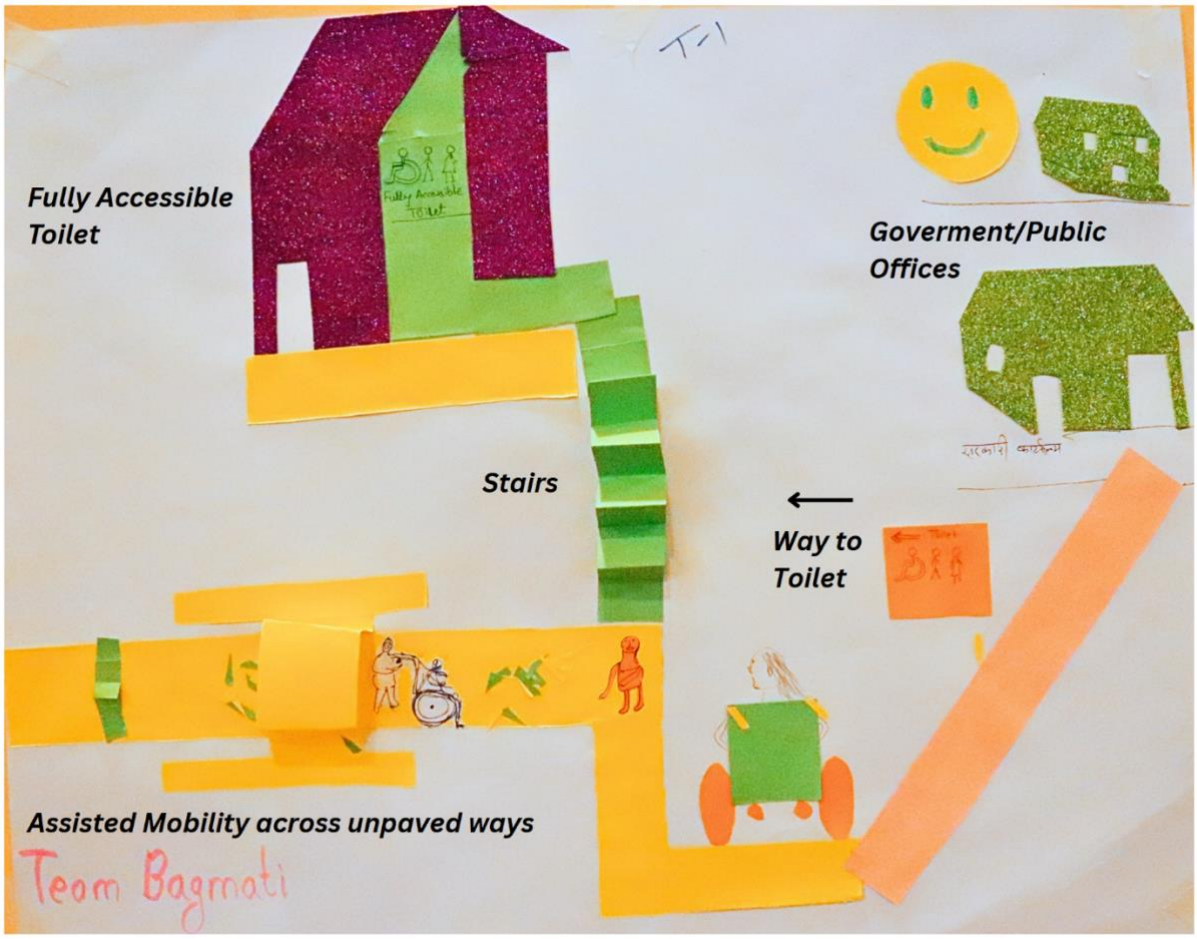


Figure 12. This rich picture maps an uncertain user journey between home and government/public offices – thereby visualizing critical environmental obstacles such as 'narrow staircase' to the accessible toilet, steep ramp access to the office itself and repair issues stranding a user during the mid journey.

This rich picture presentation by Team Bagmati portrays the paradox between infrastructure and inclusion. At the top of the image is a large building labelled *"fully accessible toilet."* However, the path to reach this facility - a narrow staircase - creates a barrier for the wheelchair user as depicted below.

"Though the toilet is accessible from the inside, there is no inclusive route to get there. One user, confused by the signage, is unable to figure out how to reach the

facility. Another wheelchair user faces a broken wheelchair while navigating a pothole-filled road, relying on a pedestrian for assistance."

The scene mirrors real-life challenges - where services appear inclusive in form but fail in function due to poor connectivity and design. Team members also highlighted systemic issues around wheelchair repair and reuse. Wheelchair parts are expensive, sometimes taxed up to 35% as *"luxury"* goods on spare parts. It's understood that local innovators have tried using hospital bed and trolley wheels for repairs, but this is not sustainable without proper parts supply and policy support.

The picture reflects a broader message: meaningful accessibility is more than ramps and signs - it requires *coordinated systems, inclusive design, timely maintenance, family support, and awareness*. Without these, even the best facilities remain out of reach.

Following themes discuss the issues and challenges around wheelchair product and service delivery in Bagmati Province.

Discrepancies in supply and demand

A key issue highlighted equally amongst all groups was the significant gap between the number of people needing wheelchairs and the availability of appropriate devices. One participant said, *"Wheelchair availability and access is not adequate."* Another group added that, *"Support needed, and support provided are not well matched."* Addressing supply-demand discrepancies can reduce waste and ensure equal access to wheelchairs for all users in need as the participant mentioned,

“Unequal distribution of wheelchairs has resulted in some users receiving multiple devices while others receive none.”

Limited availability and access to appropriate wheelchairs and services

Wheelchairs that suit the specific needs of users are hard to come by as *“Wheelchairs and services are not easily available as per user needs.”.* Appropriate wheelchairs that fit users' needs, such as those for spinal cord injury patients or electric wheelchairs, are scarce. Imported products often don’t meet the local terrain and user needs. Lack of appropriate devices results in unsafe usage, leading to potential accidents and injuries. This is supported by the group saying, *“Inappropriate wheelchair donations lead to accidents and unsafe usage for local users.”*

Charitable distribution of poor-quality wheelchairs

Most wheelchairs are sourced through donor-driven or imported channels, resulting in standard models that do not match user needs, local terrain, or repair capabilities. As noted by a group, *"Several institutions/clubs bring in and distribute wheelchairs haphazardly, often inappropriate for users."* Similarly, others mentioned that *“Free wheelchairs from charities are usually low-quality and do not meet user-specific needs.”* The dominance of donor-led provisioning, without adherence to national standards or guidelines, leads to wastage and unmet needs. One participant voiced a common concern:

“Whatever wheelchairs are brought from Japan, Germany… their spare parts are not available in Nepal. These wheelchairs are used once and left to rust after a minor breakdown.”

In addition, public procurement laws prohibit the import of refurbished wheelchairs, narrowing affordability options. Participants also raised alarms about the lack of cushion provision for spinal injury users, where one noted:

“Government gives wheelchairs but not cushions. Without pressure relief, we suffer from wounds and infections.”

High cost due to lack of local manufacturing

Wheelchairs, especially electric ones, are expensive due to importation costs, high taxes on spare parts, and a lack of local production. As one group quoted, *"Wheelchairs are expensive due to the lack of local manufacturing and cost of importation."* Another group mentioned,

“Universities have piloted wheelchair production, but no local manufacturing has been established.”

Local manufacturing could reduce costs, making wheelchairs more accessible and affordable for users.

Lack of product customization and adherence to standards

Wheelchairs often do not meet the specific needs of users, particularly those with specialized conditions like spinal cord injuries. One group shared that *"Inappropriate sizing leads to discomfort and limited functionality for users."* One user emphasized the need for *"customized wheelchair and appropriate cushions based on users' need"* to live a better life. Customizable and standard-compliant devices would better meet diverse user needs and simplify repairs. But, from what one group mentioned, wheelchair spare parts are not universal. This is supported by this technician's quote:

"Most wheelchair companies use custom components rather than universal parts, making repair and customization difficult."

Inadequate repair and maintenance centre

Regular maintenance is essential to extend wheelchair lifespan, reduce abandonment, and ensure safety. There are limited centers for repair and maintenance of wheelchairs, and spare parts are expensive as well as difficult to source, making wheelchairs unaffordable for ongoing use. A group drew attention to an issue as:

"There is a shortage of repair and maintenance centers; only a few places are available for wheelchair repair, which is inadequate."

Another participant, who is also an experienced wheelchair technician linked *'irreparability'* to *'unavailability of spare parts'* in the local market and 'high cost for imported parts.' He added that the fate of such wheelchair results into 'abandonment' even after facing a minor breakdown. Below is the extract from his quote:

"I have been on a wheelchair for 11 years and I'm also a wheelchair technician/repairer/mechanic. I also went to Japan for wheelchair training. Whatever wheelchairs are brough in from Japan, Germany, its spare parts are not available in Nepal. Even a small bearing costs NPR 300-3500 ($30) and most users can't afford to repair it. Such wheelchairs are used once and abandoned after a minor breakdown."

One group stated that there are only 3 wheelchair repair centres in Kathmandu and others mentioned 'urban centric' repair services don't serve rural populations. Users' stories highlighted repair issues affecting their life severely correlating wheelchair's functionality to their own life. An electric wheelchair user shared,

"I am an electric wheelchair user, and I have problem in my hand. What I'm worried is I don't know where to go if my wheelchair breaks down. I will not find properly matching spare parts/components and if my wheelchair stops functioning, my life stops too."

Provision

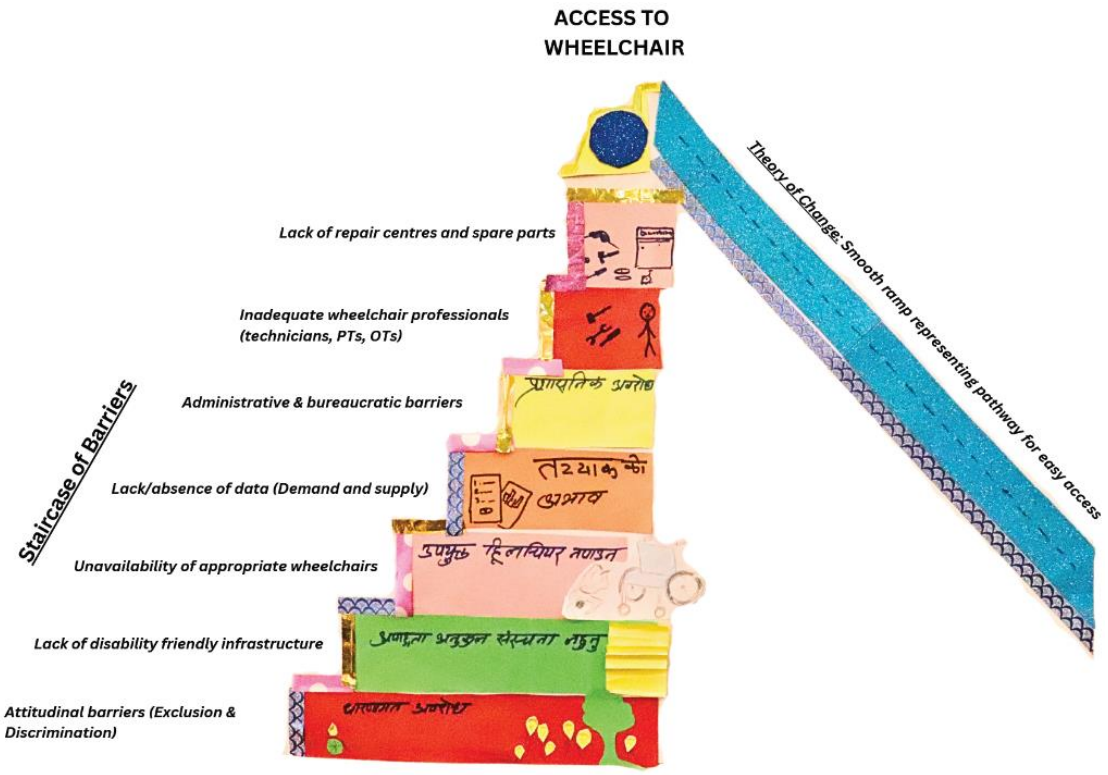


Figure 23. Workshop rich picture contrasting the 'staircase of barriers' confronting wheelchair users in Nepal.

This rich picture by another team illustrates the uphill journey faced by wheelchair users in Nepal through a "staircase of barriers." Each step represents a major obstacle - from attitudinal discrimination and infrastructural barriers to institutional and service system barriers. Together, these challenges delay or deny access to mobility.

In contrast, the image also presents a smooth blue ramp - symbolizing an ideal pathway where inclusive systems replace barriers, enabling timely and dignified access to wheelchairs.

"If these stairs of challenges are replaced with smooth slope of accessibility and access, the situation can change, and wheelchair services would be easily available."

The following themes highlight the issues around wheelchair service provision in Bagmati province.

Random charitable distribution

Charitable organizations including Government departments distribute wheelchairs without following proper standards for assessment and customization. This has resulted in "random distribution" where inappropriate devices are given to users, such as *"a 20-inch wheelchair to a child"* as shared by a participant. Another group shared that, *"Government agencies distribute inappropriate wheelchairs randomly, often unsuitable for specific users."* This is yet evident from the quote by another group member who stated that, *"Distribution is haphazard, often with inappropriate sizing or quality issues."* This suggests that heavy reliance on charities and randomized distributions without user assessment leads to mismatches in need, usability, and safety of devices. This dependency model is not sustainable.

Lack of monitoring and regulation

Effective monitoring and regulation can ensure fair distribution and adherence to quality standards. A group presented that *"Wheelchair distributions are not well-regulated or monitored by the government, leading to unequal access."* The provision process is impacted by nepotism and unequal distribution, with some users receiving multiple wheelchairs while others receive none. This was understood from the other group who quoted that *"Poor regulation means that some users receive multiple*

devices while others get none." The distribution process lacks proper monitoring and transparency, leading to *"unequal and unfair access".*

Inadequate care/rehabilitation centres

Inadequate rehabilitation centres were identified as a major issue. From what a group noted, *"Care centers are inadequate; 80% of spinal injury patients die after two years without rehabilitation."* Another group shared, *"Lack of local rehabilitation centers forces users to live in undignified conditions without proper care."* This stresses the importance of rehabilitation facilities across the country as they are vital for post-injury care, improving survival rates and quality of life for wheelchair users.

Service provision is challenging due to complex geographic terrain

The rugged terrain of Nepal makes service provision difficult, particularly in *"rural areas where users struggle to access wheelchair services",* and it is difficult for service providers to provide home service. Public spaces, including schools and government offices, are largely inaccessible to wheelchair users, further limiting the effectiveness of wheelchair provision. Barriers at such essential facilities were the most recurring themes in rich pictures as well. Geographic challenges require tailored service approaches to ensure that rural and remote users can access services.

Communication/coordination gaps

Coordination is essential for comprehensive and continuous service, preventing breakdowns in support for users. But a group shared that *"Gap between service*

providers and beneficiaries" exists due to *"lack of effective communication and coordination"* amongst them. Communication between users and service providers, and even among providers themselves, is lacking, resulting in inefficiency and frustration. One group commented about *"Weak coordination between ministries and service providers"* which is *"impacting users".*

Bureaucratic hurdles in import and distribution of wheelchairs

The import and distribution of wheelchairs are often delayed by bureaucratic processes, as one group highlights:

"Complex and lengthy government procedures hinder wheelchair provisioning."

This relates to the statement by another group that added, *"The process to import and distribute wheelchairs is bureaucratic and time-consuming."* These procedural delays can discourage users from seeking services due to time-consuming and discouraging administrative tasks. Simplified procedures would foster timely service delivery, reducing delays for wheelchair users.

Nepotism in distribution

Favoritism and nepotism in wheelchair distribution create inequitable access, as users without personal connections may not receive the necessary devices. As one reflection describes, *"Nepotism and favoritism in wheelchair distribution deny equal access for all."* Wheelchair distribution is often influenced by personal connections, resulting in unequal access. Users from underprivileged backgrounds often struggle

to access appropriate devices, while those with connections may receive multiple wheelchairs. For example, a group added:

"Those who have access are receiving 5 wheelchairs, and those who do not have access or connections are deprived".

Personnel

Inadequate skilled wheelchair technicians/professionals

There is a shortage of skilled technicians who can properly assess, fit, and repair wheelchairs. This was echoed in the statement, *"There is a shortage of skilled wheelchair technicians and professionals"* by one group. The other group added that, *"Many wheelchair service providers lack skilled personnel for repair, impacting service quality."* Skilled personnel are fundamental for repair, customization, and appropriate fitting, ensuring functional and safe devices for users. But there is a lack of proper recognition for certified professionals who would be crucial for service delivery. One group mentioned:

"Although occupational therapists are considered certified personnel for wheelchair services, there is no awareness amongst service providers regarding this."

Lack of appropriate wheelchairs and standard related awareness amongst service providers

'Lack of awareness' is a recurring theme across all discussions. Awareness of wheelchair standards among service providers ensures that users receive safe, high-quality devices and services. From this quote: *"Many service providers lack awareness of wheelchair standards, limiting the quality of services provided",* it can be understood that there is a greater need for wider orientation on existing national and international guidelines on wheelchair service provision. One group noted, *Service providers are unaware of the necessary measurement and adjustment of wheelchairs"* which impacts on *"users safety and comfort".*

Policy

Figure 14. This rich picture examines the strengths and weaknesses of wheelchair service provision across Nepal's three main geographical regions: the Terai, Hills, and Mountains.

One of the group participants pictured situation of wheelchair provision through a map of Nepal. They present that three geographic regions of Nepal: Plains (Terai), Hills (Pahad) and Mountains (Himal) are analogous to those of developed/high-income countries, developed/middle-income countries and least developed or low-income countries respectively. It shows that the current practices and challenges are as diverse and complex as the country's terrain is. This group presented unique features and challenges across three regions as follows:

"In the Mountain region, high social unity supports community assistance, but complex terrain, poor health services, lack of repair centers, and no local wheelchair production pose major challenges. The Hilly region benefits from government services, a strong workforce for rehabilitation and support, NGO support, and relatively good health access, yet faces issues with local production, poor policy implementation, and lack of investment in innovations. Meanwhile, the Terai region's flat terrain facilitates access to wheelchair services and raw material imports from India; however, high poverty, low literacy, high disability rates, and limited health education and referral systems create significant barriers."

The following themes explains some of the policy issues discussed in the workshop:

Policy gaps and implementation failures

While Nepal has made some progress in developing policies related to disability rights and social protection, these frameworks have not been effectively translated into wheelchair-specific strategies. Most workshop participants were unaware of any operational policy or regulatory standard guiding wheelchair provision. Effective policy implementation is crucial to transforming wheelchair accessibility from theoretical rights to practical realities. This is well expressed in these participants' voices:

"There is a policy saying wheelchair should be free… but no one is getting them. Everything is in paper only."

"Existing policies are not implemented; access to wheelchair services is limited to policy texts without practical enforcement."

Import tax policies are unclear, especially regarding electric wheelchairs and spare parts, contributing to increased costs. Manual wheelchairs are tax-free, but the inconsistencies in the policy contribute to inefficiencies in the market. This is expressed in the following statement:

"*There is no clarity in the wheelchair import tax policies. There is a tax on import of electric wheelchairs as well as on the spare parts of manual wheelchair, but there is no tax on manual wheelchairs. There is no clarity."*

Another concern amongst participants was about policy barriers for the importation of repaired/reconditioned wheelchairs. The following quote by a group discuss how it impacts users' access to wheelchair.

"Public procurement act of Nepal doesn't allow import of repaired or reconditioned or refurbished wheelchairs. This protocol negatively impacts in the availability and affordable access to wheelchairs and hampers distribution."

Bureaucratic complexity

Participants expressed frustration with bureaucratic hurdles, such as delays in import approvals and lack of transparency in distribution. Service provider's statement tells

us that *"Government procedures are complex and bureaucratic, slowing the service delivery process."* This shows that the process for importing wheelchairs is cumbersome, and approvals take significant time. Participants' expressions reveal that *"Excessive bureaucracy impedes swift access to assistive devices, affecting user independence."* Thus, streamlining bureaucratic procedures would expedite service delivery, improving timeliness and accessibility for users.

Lack of awareness amongst policymakers

Policymakers lack knowledge about assistive technology standards and wheelchair provision, which hinders effective policy formulation and implementation. A group shared that, *"Policymakers' limited understanding leads to insufficient resources and lack of focus on wheelchair services."* Awareness among policymakers is key to securing support for impactful wheelchair policies and services.

Coordination issues between focal ministries

Participants expressed that there is a lack of clarity in the roles of the Ministry of Women, Children, and Senior Citizens (MoWCSC) and the Ministry of Health and Population (MoHP), leading to coordination failures in service delivery. The absence of inter-ministerial coordination between concerned ministries means that wheelchair services fall between policy cracks. One group shared that, *"Lack of inter-ministerial cooperation hinders comprehensive service delivery for wheelchair users."*

Exclusion of users and professionals in policymaking

Wheelchair users and professionals are often excluded from policy discussions, resulting in decisions that fail to address user needs adequately. This expression from participants highlight peoples' exclusion in policymaking:

"There is no effective and impactful representation of wheelchair users and service providers/DPOs in major platforms. An inclusive and participatory discussion/workshop like this which we are having now between users, service providers and policy makers doesn't usually happen in Nepal. This should happen more often at the government/policy level too."

The other group mentioned that *"Policies are not representative of actual user needs due to lack of user involvement."* Thus, it is important to realize that inclusive policymaking would reflect user needs more accurately, leading to better-aligned and impactful policies.

Insufficient budget allocation and priority

The wheelchair sector does not receive adequate financial support, resulting in poor service provision and a lack of resources. The lack of dedicated funding for wheelchair services limits the establishment of necessary infrastructure and personnel training. *"There is no investment in the wheelchair sector; the government neither manages nor utilizes existing resources"*, shares a group on government's position. Another group mentioned that *"Budget allocations remain low, limiting the expansion and enhancement of wheelchair services."*

Furthermore, another group commented on public sector's inefficient procedures as: *"Lengthy and tedious (time consuming) government procedures and these are not prioritized by government sector".* Adequate budget allocations are fundamental to expanding wheelchair service availability, repair facilities, and training for personnel.

Lack of monitoring and proper regulation

Monitoring and regulation ensure service quality, equal access, and adherence to standards, preventing resource wastage and user dissatisfaction. The participants highlighted the ineffective system, referring to lack of monitoring the quality and distribution of wheelchairs, leading to inconsistencies and inefficiencies. As per one group, *"Government wheelchair distribution is not well-regulated, resulting in unequal access and poor service quality."* The other group mentioned that *"Lack of regulation in charitable distribution leads to a mismatch in device quality and user needs."* Inadequate regulatory oversight and monitoring allow for inconsistent service standards, impacting both service quality and equity in access.

The texts below highlights Nepal's progressive policy on AT sector.

In recent years, Nepal has taken several progressive policy steps to strengthen rehabilitation and assistive technology (AT) services, reflecting growing national commitment to inclusive health systems. The *Situation Assessment of Rehabilitation in Nepal (EDCD, 2022)*[18] marked a pivotal moment by systematically documenting the state of rehabilitation services across the country, identifying key gaps in infrastructure, workforce, and service integration. Complementing this, Nepal has developed its own *National Priority Assistive Products List (PAPL, 2018)*[19] in alignment with WHO's global initiative, aiming to streamline procurement and ensure the availability of essential assistive products tailored to the country's needs.

Furthermore, the introduction of *National Standards for Assistive Technology (NSAT*

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Visible Mindfulness for Effective Policy

Discussion and Recommendations

This dimension generates a shared or collective understanding of the situation, working in partnership to create actionable sustainability policy.

The insights gathered from the wheelchair provision workshop in Kathmandu, Bagmati Province stresses the urgent need for a systemic, inclusive, and sustainable transformation of wheelchair services in Nepal. Participants highlighted numerous structural barriers - ranging from poor infrastructure and inaccessible services to lack of data, limited repair networks, and absence of user participation in policy decisions. However, the workshop also illuminated clear aspirations for change. This section translates those aspirations into actionable recommendations, aligning them with the best global practices.

Promoting Local Manufacturing of Wheelchairs and Spare Parts

A recurring aspiration among participants was the desire for locally produced and affordable wheelchairs that reflect Nepal's geographic realities and user-specific needs. Stakeholders emphasized that imported wheelchairs are often mismatched in size, terrain compatibility, and spare part availability. Supporting local innovation and manufacturing can ensure products are contextually appropriate while creating economic opportunities. As one group suggested,

"Local production of wheelchairs and spare parts would make wheelchairs more affordable and accessible to those in need."

Recommendation:

Introduce government incentives and startup grants for Nepali wheelchair producers.

Encourage university-private sector collaboration for research and development, and pilot production.

Implement tax exemptions for raw materials and machinery used in assistive technology manufacturing.

Support localized prototyping labs and community-based production hubs that include users in the design feedback loop.

Expanding Repair and Maintenance Services Across Municipalities

The success of Gokarneshwar Municipality's wheelchair repair centre was widely acknowledged in the workshop. However, the absence of similar centres in other parts of Nepal leaves users without support when their wheelchairs malfunction, often leading to abandonment of the device and reduced quality of life. As a participant suggested, *"Institutions and other local governments can also replicate this model to support wheelchair users."*

Recommendation:

Replicate the free municipal wheelchair repair model across all provinces through public-private partnerships.

Train local technicians using context-specific, modular training curricula following WHO standards.

Encourage low-cost innovation using available local materials, especially for frequently damaged parts such as caster wheels, foot plates, arm rest and seats.

Ensuring Accessibility of Public Infrastructure

Despite legal mandates, most public buildings in Nepal remain inaccessible to wheelchair users. Barriers include lack of ramps, elevators, accessible toilets, and inclusive public transport. Participants emphasized that infrastructure - physical and digital - must be universally designed.

As stated by one group, *"Every public facility such as schools, government offices, and ministries should be well accessible to wheelchair users."*

Nepal's *National Building Code (NBC 206: 2015)*[22] introduces a structured framework for accessibility in public and private infrastructure through clear design requirements tailored to building size and usage. It outlines categories of accessibility with specific requirements for ramps, toilets, entrances, and lifts. Despite this progressive regulatory effort, the practical implementation remains limited due to weak enforcement and insufficient awareness among local authorities and builders. Strengthening monitoring and capacity-building mechanisms is crucial to translating these standards into tangible improvements in accessibility.

Recommendation:

Enforce compliance with building codes aligned with universal design principles in all new and renovated public facilities.

Provide subsidized accessibility retrofitting grants to government offices, health centers, and schools.

Develop a public accessibility audit system, including wheelchair user participation.

Establishing a Centralized, Real-time Wheelchair Data System

A consistent theme was the lack of real-time, disaggregated data on wheelchair users and device distribution. This leads to inefficient resource allocation, duplication, or neglect. Data-informed planning is essential for service equity. A group proposed an unified distribution, *"We could envision a one-door system for wheelchair distribution"* to prevent wastage and enable better coordination.

Recommendation:

Create a centralized digital database of wheelchair users, integrated into national health and social protection systems.

Link with municipal registries and disability ID systems to monitor need and coverage.

Pilot a QR-coded user card system, similar to the COVID-19 vaccine registry, to track repairs, services received, and device history.

Institutionalizing Representation in Policy and Planning

Wheelchair users remain systematically underrepresented in decision-making bodies, resulting in policies that often fail to reflect lived realities. Inclusion is both a rights-based imperative and a practical necessity for effective policy design.

Referring to the exclusionary practices, one group urged for more frequent dialogues between policy makers and stakeholders. The group suggested:

“An inclusive and participatory discussion/workshop like this... should happen more often at the government/policy level.”

Recommendation:

Mandate DPO and user representation in local and national assistive technology advisory bodies.

Institutionalize co-design workshops between users, engineers, and health planners.

Allocate government budget for frequent regional forums where wheelchair users engage with service planners and evaluators.

Reference:

[22] Nepal National Building Code (NBC 206: 2015). Architectural Design Requirements. (2015). Available at: https://www.moud.gov.np/storage/listies/July2019/NBC_206_2015_ARCHITECTURAL_DESIGN_REQUIREMENTS.pdf.

Ensuring accessibility in the built environment is a foundational step toward inclusive development and equitable access to services for persons with disabilities. Nepal's regulatory framework provides a solid starting point, but greater emphasis on

Nepal's commitment to universal design is enshrined in its *National Building Code (NBC 206-2015): Architectural Design Requirements*, which mandates progressive accessibility standards for public and semi-public buildings. Under the NBC:

- Buildings are categorized into three accessibility levels (Minimally, Partially, and Fully Accessible), each with clear, measurable criteria for ramps, entrances, toilets, lifts, and other access features.
- **Category 1 (plinth <100 m²)** requires at least one accessible entrance, reception area, and toilet located on the ground floor, with ramps having a gentle slope (1:8 for ≤450 mm rise, and 1:12 above) and minimum width of 1 m.
- **Category 2 (100–500 m²)** adds standards for handrails, non-slippery surfaces, and fully compliant lifts when provided, ensuring at least one accessible primary entrance and washroom per building.
- **Category 3 (>500 m²)** mandates full accessibility throughout, including lift access to all floors, accessible toilets with sufficient clearance, and clear signage using international symbols.

Additional NBC provisions include minimum door clearances (≥800 mm), turning spaces (1.8 m diameter), accessible parking, and detailed dimensions for elements like ATMs, counters, and telephones. Despite these provisions, research shows significant gaps in implementation across government offices, schools, health

enforcement and institutional coordination is needed to bridge the gap between policy and practice. The highlighted box below gives an overview of *National Building Code (NBC 206-2015): Architectural Design Requirements and its practical implications*[23].

Reference:

[23] Preparation Of Design Guidelines For Disable Friendly Building Design In Government Office Buildings For All Types Of Disabilities In Nepal. (n.d.). Available at: https://giwmscdnone.gov.np/media/pdf_upload/2._PREPARATION_OF_DESIGN_GUIDELINES_FOR_DISABLE_FRIENDLY_BUILDING_DESIGN_IN_GOVERNMENT_OFFICE_BUILDINGS_FOR_ALL_TYPES_OF_DISABILITIES_IN_NEPAL.docx.pdf [Accessed 10 Jun. 2025].

Way Forward – Consensus Workshop

The above recommendations should inform strategic development provincially and nationally. Participants across the four provinces will be invited to participate in a consensus workshop to see if themes generated represent the views of participants and that recommendations are articulated to support the development of a strategy. As a way forward participants will work together to propose a plan to build sustainable wheelchair provision service delivery systems, based on the findings, which are clearly defined and modeled to feasibly take action to improve the situation

and address the real world challenge, i.e. wheelchair provision. Through consensus-based development of a ‘root definition’ - a structured articulation of what needs to change and why *(Checkland, 1999)*. This collaborative process allows stakeholders to co-create a conceptual model for improving wheelchair services that is rooted in local realities and aspirations. As reflected in the previous research *by Gowran et al. (2019)*, stakeholder engagement through SSA fosters a ‘community of practice’, where mutual understanding, knowledge exchange, and long-term commitment are essential to sustainable system transformation.

Participants will also have the opportunity to review a proposed ‘Richest Picture’ which represents wheelchair provision, its importance and challenges, presented in a form of traditional Nepali ‘Thanka Art’. The art can be done through wheelchair user Thanka artists who were the participants of the workshop itself.

Figure 15. Male (left) and Female (right) artists who also participated in the workshop as a wheelchair user showcasing traditional Nepali Thanka Art at at Jorpati, Kathmandu.

Conclusion

The findings of this provincial situational analysis affirm that wheelchair service provision in Nepal remains a fragmented and under-regulated system, often characterized by ad hoc practices, duplication of efforts, and limited strategic oversight. Yet, the commitment to reform among stakeholders - ranging from service users and providers to policymakers - is appreciable and provides a strong foundation for coordinated change. To transition from fragmented provision to sustainable, rights-based wheelchair services, it is critical to adopt a participatory planning approach that not only reflects the complexity of the system but also fosters stakeholder ownership at all levels.

The Sustainable Community of Practice Model (SCOP-M) and the application of the Soft Systems Approach (SSA), in this study, offers a structured yet flexible approach for facilitating systemic change. By engaging stakeholders in reflective inquiry, the methodology enables identification of shared concerns and system inefficiencies, followed by consensus-based development.

Moving forward, provincial and national authorities should establish inclusive dialogue forums with the Organization of the Person with Disabilities (OPDs), Local governments, Service providers, Manufacturers, and Users to collectively review the findings of this study and define a shared vision for change through a consensus workshop. These engagements should focus on developing strategic, actionable, and contextually relevant roadmaps that include strengthening local repair and production systems, institutionalizing training and capacity building, enforcing national accessibility standards, and developing centralized data systems. Coordination across sectors - health, social protection, education, and infrastructure must be institutionalized to ensure holistic service delivery.

By situating wheelchair provision as a basic human rights issue and aligning future strategies with the *United Nations (2015)* Sustainable Development Goals (SDGs), especially SDG 3 (Good Health and Well-being), SDG 10 (Reduced Inequalities), and SDG 11 (Sustainable Cities and Communities)[24], Nepal can position itself as a regional leader in inclusive assistive technology systems. The way forward demands political will, inclusive governance, and continuous engagement with those who understand and are directly affected by the wheelchair provision system. Only through such integrated and inclusive processes can sustainable, equitable, and appropriate wheelchair services be realized.

Reference:

[24] United Nations (2015). *The 17 Sustainable Development Goals*. [online] United Nations. Available at: https://sdgs.un.org/goals.