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Regional - Capacity Development Technical Assistance (R-CDTA)

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South Asia Urban Knowledge Hub | Nepal
Work Plan

Tribhuvan University

Institute of Engineering

Lalitpur, Nepal

I. INTRODUCTION

1.   Between 2001 and 2011, the urban population of Nepal increased at an annual average rate of 3.38% (national: 1.35%) to reach 4.5 million, accounting for 17% of the national population.[1] The decade saw urban demographic share increase by 0.38 million households (1.3 million residents) – about 2/5th of the national population gain. With new municipalities added in 2014, the adjusted level of urbanization now stands close to 40%.[2] Rapid pace of urbanization has exposed large cities and emerging towns to a multitude of challenges such as poor housing conditions, inadequate infrastructure and services, congestion, pollution, and increased vulnerability to natural disasters (e.g., earthquakes and flash floods), among others.

2.   Nepal is one of the most at-risk countries in the world in terms of earthquakes.[3] The recent great earthquake – the 7.8 M_W earthquake of 25 April, 2015 with epicenter in Barpak, Gorkha – followed by powerful tremors caused huge loss of lives and properties in parts of Nepal.[4] For the country of Nepal's size, the impact of the disaster is disturbing – about 8,900 casualties; 22,300 injuries; 8 million directly affected people (or 1/3rd of national population); over half a million destroyed houses; and a drop by over 1.5 percentage points in gross domestic product (GDP).[5] The message is clear: earthquakes are unavoidable, and therefore, the need for disaster-resilient planning of human settlements – whether rural or urban – is indisputable.

3.   Relative to rural areas, cities are expected to be better equipped against disasters. On top of that, cities can also enjoy quick response from the government and other related agencies in the aftermath of disasters. However, cities are also at greater risk because of high population concentration, and ageing infrastructure and housing stock amid growing population. Because cities are called 'engine of economic development', the entire national interests are at stake when large cities are at risk.

4.   In order to guide urban planning process in the country, the Government of Nepal has formulated National Urban Policy or NUP 2007 followed recently by the National Urban Development Strategy or NUDS 2015. Although prepared prior to the recent disaster, the NUDS 2015 has adopted resilience as one of the guiding principles,[6] whereby it seeks to promote resilient urban development through climate change adaptation, development in safer locations, enforcement of building codes, regulations, guidelines and planning bye-laws; and capacity building of government institutions and local bodies. Some related proposed programs include prep-

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[1] In Nepal, urban population officially refers to the municipal population. Municipalities are cities and towns meeting government-set minimum criteria that include population size, revenue size and infrastructural strength.

[2] As of census year 2011, there were 58 municipalities. The government established 72 new municipalities in May 2014 and 61 more in December 2014, taking the total to 191. In most cases, municipalities have been created by amalgamating several Village Development Committees (VDCs) and in some cases through area expansion of existing municipalities.

[3] Based on the 1980-2000 data, UNDP (2004) ranks Nepal as the 11th most at-risk country among 198 countries studied (United Nations Development Programme. A global report - Reducing disaster risk: A challenge for development. New York, USA: UNDP/Bureau for Crisis Prevention and Recovery, 2004.). In fact, Nepal as a geographical entity owes its very creation to earthquakes (see http://pubs.usgs.gov/gip/dynamic/himalaya.html).

[4] A powerful 6.7 M_W aftershock stuck on 26 April, 2015 followed by a 7.3 M_W earthquake on 12 May, 2015 and numerous aftershocks which are expected to continue for a long time (see http://www.seismonepal.gov.np for updates) because of the accumulated energy in the Main Frontal Thrust (MFT). The MFT is the main, currently active fault marking the boundary between the Indian and Asian tectonic plates, the collision between which led to the formation of the Himalaya mountains (see http://www.nature.com/ngeo/journal/v6/n1/fig_tab/ngeo1673_F1.html). Note that M_W, used by the United States Geological Survey (USGS), stands for the moment magnitude scale, which measures the size of earthquakes in terms of energy released. The National Seismological Center (NSC) of Nepal measured Gorkha earthquake at 7.6 magnitude.

[5] National Planning Commission. Nepal Earthquake 2015 – Post Disaster Needs Assessment. Vol. A: Key Findings. Kathmandu, Nepal: Government of Nepal, National Planning Commission, 2015.

[6] The guiding principles of NUDS 2015, as stated, are sustainability, inclusivity, resilience, green, and efficiency.

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aration of risk sensitive land use planning; revision of building by-laws; modification in land readjustment regulations; regeneration of traditional settlements; and development, conservation and management of multipurpose open spaces, among others.

5.   The Urban Knowledge Hub (K-Hub) project in Nepal is supported by the Asian Development Bank (ADB), implemented by the Ministry of Urban Development (MOUD), and undertaken by the Institute of Engineering (IOE) as the National Center. The objective of the project is to engage and communicate knowledge gained through research on relevant topics with the urban decision makers in order to draw policy lessons from the knowledge products developed. Given the destruction caused by the recent earthquakes in the country, the research topics are chosen so as to support the government's urban planning objectives and strategies towards risk-resilient urban development.

II. GOAL, IMPACT AND OBJECTIVES

6.   Urban resilience is a city's ability to withstand and recover from unexpected shocks associated with natural hazards such as earthquakes.[7] Although the regions affected most by the recent disaster were essentially rural, the Kathmandu Valley – Nepal's capital region and largest urban conglomeration – witnessed about 1700 casualties, 13,000 injuries, and 724,00 collapsed houses within its three districts.[8] Although the goal of the K-Hub study is to promote risk-resilient urban development in the country, the study will particularly focus on post-earthquake rebuilding of the Kathmandu Valley.

>   **Goal:**   To promote risk-resilient urban development in Nepal.

>   **Impact:**   By 2031, earthquake-resilient building construction and land development norms are implemented in the Kathmandu Valley.[9]

7.   Building urban resilience begins with the collection and management of information on damage and prevailing risks, which will be the <u>first</u> focus of the K-Hub study. The <u>second</u> installment of the study will support the country's "building back better" mission by promoting risk-resilient urban land management using the tool of land readjustment (LR) – popularly called 'land pooling' in Nepal. The K-Hub activities are also aimed towards knowledge building (through research and improvement in urban planning curricula at IOE), application (through policy briefs), and sharing (with the MOUD, partner agencies, K-Hub regional partners, students/faculty of urban planning program at the IOE, and general public through websites and online social media.[10] Including the <u>third</u> and <u>fourth</u> parts of the study, the K-Hub objectives are categorized as follows:

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[7] Asian Development Bank. Moving from risk to resilience: sustainable urban development in the Pacific. Mandaluyong City, Philippines: Asian Development Bank, 2013. Available online at http://www.adb.org/sites/default/files/publication/31200/moving-risk-resilience-sustainable-urban-development-pacific.pdf.

[8] Source: Preliminary report (dated May 26, 2015) prepared by Ministry of Home Affairs (MOHA), Government of Nepal. Available online at http://drrportal.gov.np/uploads/document/175.pdf

[9] The year 2031 is chosen to coincide with the NUDS 2015 goals.

[10] Existing online presence include http://khub.niua.org and https://www.facebook.com/groups/KhubNepal.

Objective 1: Improve urban development policies to mitigate prevailing earthquake risks in the Kathmandu Valley by engaging decision makers with credible information and analysis on building-sector damage in the Valley due to the Nepal 2015 earthquake[11] (by July 2016).

Objective 2: Promote risk-resilient urban land development by engaging decision makers with recommendations based on critical review of existing land readjustment practices (by December 2016).

Objective 3: Have recommendations for an improved M.Sc. Urban Planning curricula at the IOE submitted to the Educational Council for approval (by July 2016).

Objective 4: Build capacity of the IOE, as Nepal National K-Hub Center, in knowledge management, communications and learning (by December 2016).

8.   In summary, within an overarching theme of risk-resilient urban development, the K-Hub study focuses on consolidating and managing knowledge on risks and damage due to the recent earthquakes, an on promoting land readjustment techniques for risk-resilient urban land management based on the lessons learnt from recent disasters, previous experiences on LR project implementation, and related international experiences.[12] The study will develop and deliver evidence-based policy recommendation and strategies.

III. OBJECTIVE 1

Objective 1: Improve urban development policies to mitigate prevailing earthquake risks in the Kathmandu Valley by engaging decision makers with credible information on and analysis of building-sector damage in the Valley due to the Nepal 2015 earthquake (by July 2016).

9.   The first question arisen in the aftermath of the disaster is also the most important one: *Why did some buildings failed while others in the same locality endured seismic shocks?* Answers to this seemingly simple question cover complex issues ranging from building attributes (e.g., age, construction materials and technology, mode of construction, and so forth) to building codes, building byelaws, local geology, and even household economic status.[13] Likewise, the matters of building permit issuance, professional practice (and ethics) and public awareness also deserve attention.[14]

10.   In the aftermath of the recent disaster, different agencies conducted rapid visual damage assessment (RVDA) of public and residential buildings.[15] Following international practice, the

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[11] In this document, "Nepal 2015 earthquake" refers collectively to the Gorkha earthquake and the subsequent tremors.

[12] The objectives have been endorsed by the MOUD in writing.

[13] For instance, in old traditional neighborhoods, despite good intentions, building byelaws could be discouraging renovation and maintenance of ageing buildings. On the other hand, although many ancient, traditional buildings were destroyed, the reason is not technological failure as such but lack of maintenance which could be due to poor economic conditions. Note that built with indigenous and ingenious building technology, those same buildings earlier withstood the powerful 1934 earthquake.

[14] Question does arise, for instance, why high-rise buildings in the Kathmandu Valley were constructed and permitted on geologically very weak locations that would have required but apparently did not receive the right construction techniques. It is to be noted that the Department of Mines and Geology has already prepared geological maps of major cities including that of the Kathmandu Valley. See http://www.dmgnepal.gov.np/geology-of-nepal.

[15] For e.g., MOHA gathered data on casualties and property losses in affected districts. The MOUD investigated high-rise buildings and government office buildings. The IOE performed damage assessment of Tribhuvan University-affiliated campus buildings. Nepal Engineers' Association performed RVDA of thousands of residential buildings.

post-earthquake RVDA in the urban areas in Nepal involved categorizing existing buildings – using color stickers – into three groups as per the structural damages observed: green ('safe to enter'), orange ('limited entry') and red ('no entry').[16] Although the RVDA has its own limitations due to short inspection time (30 minutes or less), it provides quick information on 'what-went-wrong' side of urban planning and development. Therefore, it has strong urban policy implication, particularly to identify prevailing risks. For instance, many affected buildings have been hastily repaired or demolished without expert supervision; in such case, distributing informational materials at the time of inspection itself would have been an appropriate policy intervention.

11.   In this study, information from different sources on the RVDA in the Kathmandu Valley will be collected and consolidated for two purposes: (a) documentation and analysis of damage (Knowledge Product or KP 1), and (b) identification of prevailing risks and policy implications (KP-2). A case study of Sankhu, a traditional town which is among the worst-hit settlements in the Kathmandu Valley, will be performed (Case Study 1).

12.   Draft knowledge products will be discussed with urban policymakers (notably from MOUD, Ministry of Federal Affairs and Local Development or MOFALD[17], Kathmandu Valley Development Authority or KVDA, and municipal offices), other related agencies, academicians, practitioners, and relevant non-state actors through a strategically designed workshop to polish policy recommendations. The end products will be handed over to the MOUD, and disseminated publicly.

13.   **Activities:** The activities under Objective 1 are summarized below along with time schedule.

   i.   Draft a concept paper for knowledge products KP-1 and KP-2 (October 2015).

   ii.   Prepare case study on earthquake damage assessment in the traditional town of Sankhu, one of the worst-hit settlements in the Kathmandu Valley (Case Study 1, October 2015).

   iii. Draft an engagement strategy, and adapt and fill-in on an ongoing basis while engaging stakeholders throughout the process (review by Michelle L) (October 2015).

   iv.   Prepare documentation on post-earthquake RVDA in the Kathmandu Valley (KP-1, January 2016).

   v.   Develop policy recommendations for mitigating prevailing earthquake risks in the Kathmandu Valley (KP-2, March 2016).

        – Include relevant elements of good practices or experiences from other South Asian K-Hub partner countries based on the feedback received.

   vi.   Communicate with stakeholders and decision makers on policy recommendations via a range of tactics including but not limited to:

        – Policy brief to communicate findings of KP-1 and KP-2 (PB-1 – April 2016)

        – One national workshop (May-June 2016)

        – Lecture as part of Eminent Lecture Series (May-June 2016)

        – High-level meeting with decision makers (July 2016)

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[16] 'Red' buildings require demolition whereas 'green' buildings may require some minor repairs. 'Orange' buildings require more detailed repair to be determined through further investigation.
[17] Although the MOUD makes urban policies, municipalities function under the MOFALD.

14.   **Outputs:**

- Case Study 1 on earthquake damage assessment in Sankhu
- Concept paper for KP1 and KP2
- Engagement strategy
- Documentation on post-earthquake RVDA in the Kathmandu Valley (KP-1)
- Policy recommendations for mitigating prevailing earthquake risks in the Kathmandu Valley (KP-2)
- Lecture as part of Eminent Lecture Series
- Policy brief (PB-1)
- National workshop
- High-level meeting with decision makers

15.   **Indicators of success:**

- At least 10 key decision makers (minimum two from MOUD, two from MOFALD, 5 from the offices of Kathmandu Valley municipalities,[18] one from Kathmandu Valley Development Authority) attend the high-level meeting.

IV. OBJECTIVE 2

Objective 2: Promote risk-resilient urban land development by engaging decision makers with recommendations based on critical review of existing land readjustment practices (by December 2016).

16.   Pioneered by Germany and Japan, land readjustment (LR) is a proactive land management process whereby a government agency consolidates a selected group of land parcels into a large estate, provides infrastructure and services, and subdivides the estate into serviced residential plots, street network, and open space, with the sale of some of the plots for the project cost recovery, and the distribution of the remaining plots back to the original landowners. The process is more commonly known as 'land pooling' in Nepal.

17.   In recent decades, Kathmandu Valley and many other regions have witnessed rampant residential growth spilling over the jurisdictions of established urban areas. Acres of farmlands have been converted prematurely into urban use. The practice of constructing buildings first and then seeking access to municipal services (road, piped water connection, and sewer lines) continues to prevail. With landholders acting in their own individual interests, new residential areas are falling prey to disorganized spatial pattern as land parcels fragmented into irregular shapes and sizes, resulting into haphazard layout of buildings and access roads. To improve this scenario, the NUDS 2015 aims to get *half of the new residential area developed through land readjustment process by 2031*.

18.   The lack of open space in the Kathmandu Valley was felt deeply in the aftermath of recent massive earthquakes. In the times of such disasters, open spaces are not only important for temporary settlement but also for immediate safety because there are risks from falling ob-

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[18] As of now, the Kathmandu Valley has 21 municipalities.

jects and collapsing buildings.[19] However, open spaces are scarce not only in the traditional core areas of the Valley but also in more recently developed residential areas. In this regard, the LR technique is also a very effective way of building urban resilience. Besides providing serviced plots within the environment and ambience of a planned neighborhood, LR facilitates adoption of risk-resilient land use planning and zoning including provision for open space, improves infrastructure design standards to address natural hazard and risks, and preserves or promotes natural ecosystem functions such as natural drainage channels and green space.[20]

19.   So far, 12 LR projects have been implemented within Kathmandu Valley (area: 260 hectares, housing plots: 12,160) with 11 projects coming up (area: 405 hectares; housing plots: 10,000). LR projects are also being implemented outside the Valley. However, to what extent earthquake risk resilience is taken into consideration in the existing and completed LR projects is a matter of debate or critical review. The Objective 2 will investigate this through a case study (Case Study-2).

20.   To achieve Objective 2, the K-Hub team will work with MOUD, Kathmandu Valley Development Authority (KVDA), Town Development Committees (TDCs), municipalities, and private developers. A concept paper will develop methodology to have LR agencies share their experiences – legal, institutional, and practical challenges faced – in a systematic format so that the lessons and their implications are well understood and acted upon. Private developers will be consulted to find ways to integrate their roles into the overall urban planning system. Property owners of the past LR sites will be approached for feedback. The exercise will produce policy recommendations for improved LR process and implementation mechanism in Nepal to promote risk-resilient urban development (KP-3).

21.   **Activities:** The activities under Objective 2 are summarized below along with time schedule.

    i.   Draft concept paper for knowledge product KP-3 (December 2015).

    ii.   Prepare case study on existing and completed LR projects in Nepal focusing on issues, challenges and opportunities, supplemented by a review of international best practices (Case Study 2, February 2016).

    iii.   Draft an engagement strategy and adapt and fill-in on an ongoing basis while engaging stakeholders throughout the process (review by Michelle L) (February 2016).

    iv.   Draft a plan for improved LR process and implementing mechanism (KP-3, July 2016)

        – Include relevant elements of good practices or experiences from other South Asian K-Hub partner countries based on the feedback received.

    v.   Communicate with stakeholders and decision makers on policy recommendations via a range of tactics including but not limited to:

        – Policy brief to communicate the plan (PB-3 – August 2016)

        – National workshop (September – November 2016)

        – Lecture as part of Eminent Lecture Series (September – November 2016)

        – High-level meeting with decision makers (December 2016)

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[19] For instance, see how people in a core urban area of Kathmandu looked for open space in the aftermath of earthquake: https://www.youtube.com/watch?v=Ei1FL2geuco.
[20] Ref. footnote 7.

22. **Outputs:**

    - Case Study 2 on the implementation of past LR projects in Nepal assessing reasons behind their success or failure with review of best practices from other countries

    - Concept paper for KP-3

    - Draft and final influencing strategy

    - Draft recommendations on improved land pooling process and implementation mechanism (KP-3)

    - Gaining acceptance workshop

    - Lecture as part of Eminent Lecture Series

    - Policy brief on realization of planned urbanization through land pooling – PB3

    - National workshop

    - High-level meeting with decision makers

23. **Indicators of success:**

    - At least 10 key decision makers (minimum two from MOUD, two from MOFALD, two from Kathmandu Valley Development Authority (KVDA), and four from municipalities or Town Development Committee attend the high-level meeting to look at options for improvement of land pooling process and necessary policies for the enhancement of land pooling process (Dec 2016).

V. OBJECTIVE 3

> **Objective 3:** Have recommendations for an improved M.Sc. Urban Planning curricula at the IOE submitted to the Educational Council for approval (by July 2016).

24. The graduates of M.Sc. Urban Planning Program at the IOE are future urban planners and policymakers of the country. It is therefore imperative that students receive contemporary knowledge about urban planning issues in Nepal, and in South Asia by extension. This requires a thorough review of existing curricula which have not been updated for years now.

25. The objective on curricula improvement will be achieved through active engagement and contribution of academicians and practitioners involved in different sectors of urban planning discipline including housing, urban land management, and sanitation. Expert inputs from the regional K-Hub experts are also anticipated. The last objective is an operational one aimed at strengthening the IOE as the national K-Hub center through in-house capacity building and collaboration with regional partners.

26. **Activities:** The activities under Objective 3 are summarized below along with time schedule.

    i. Form Curricula Committee (August 2015).

    ii. Draft an engagement strategy, and adapt and fill-in on an ongoing basis while engaging stakeholders throughout the process (review by Michelle L) (September 2015).

    iii. Prepare roster of expert reviewers (September 2015).

iv. Prepare terms of reference for expert reviewers (September 2015).

v. Prepare a preliminary diagnostic report on existing curricula to share with expert reviewers and K-Hub regional partners (October 2015).

vi. Review existing urban planning curricula in South Asia region and three additional internationally recognized institutes around the world to identify gaps and opportunities for improved curricula (November 2015).

vii. Prepare a draft report on improved curricula with inputs from expert reviewers (December 2015).

viii. Collect and compile experts' reports on revised curricula (January 2016).

ix. Discuss knowledge to date with Curricula Committee (January 2016).

x. Prepare technical brief and presentation slides to communicate with the identified audience (March 2016).

xi. Promote the recommendations to the identified audience via (April - May 2016):

  – Workshops with academics, relevant experts, and decision makers.

  – Lecture as part of Eminent Lecture Series.

xii. Incorporate workshop feedback and finalize report on curricula (June 2016).

xiii. Submit recommended curricula to IOE Educational Council for approval (July 2016).

27. **Outputs:**

  – Diagnostic report on existing curricula

  – Peer review workshop with curricula review committee

  – Report of recommendations for curricula improvement

  – Brief explaining recommendations for communication purposes

  – Lecture as part of Eminent Lecture Series

  – Workshops with high level academics, related experts, and decision makers

  – Meeting with curricula decision makers

28. **Indicator of Success:**

  – IOE Educational Council accepts submission of improved curricula and initiates further administrative process by July 2016.

VI. OBJECTIVE 4

Objective 4 (Operational): Build capacity of the IOE, as Nepal National K-Hub Center, in knowledge management, communications and learning (by December 2016).

29. **Activities:**

i. Activating and maintaining webpage / website (September 2014 ongoing)

  – Participating in working group (1 meeting/month)

- Providing content (minimum 1 web story/month, documentation for K-Hub publications such as work plan, case studies, and KPs)

ii. Contributing to Newsletter - twice yearly

- Participating in working group (twice yearly outputs)
- Providing content for two newsletters /year

iii. Reporting and Learning (ongoing activities)

- Monthly Telecoms (to ADB) by team leader
- Progress Reports every 2 months (to Regional Coordinator and ADB)
- Annual Reports of Working Groups (to ADB, Regional and National Centre)
- Steering Committee Meetings (team leader, at least once per year)
- Twice Yearly reflections on outcomes (telecoms between our team and ADB)
- Mid Term Capacity Building / Reflection Retreat (for national teams - early 2016)
- Participation in two training webinars per year (for national teams, online)
- Participation in a final Reflection Workshop on Lessons on Implementation of Regional K -Hub (mid- 2017 - K-Hub partners and implementing agencies)

iv. Knowledge Products (ongoing activities)

- Contributing to Knowledge Products of other countries by submitting country profile on the topics requested (9 in total)
- Reviewing the KP concept paper of other countries and providing comments
- Contributing to the regional knowledge product(s) (i.e. regional database led by NIUA in India)
  - Participate in working group
  - Contribute to influencing strategy
  - Contribute to the concept note on the KP
  - Support implementation

30. **Outputs:**

- Webpage / website
- Newsletter
- Knowledge Products
- Quarterly Progress Reports
- Annual Reports
- Working Groups
- Steering Committee
- Participation in training

31. **Indicator of success:** Team members show progression from researchers to engagers by having influencing strategies for work outside the K-Hub deliverables by December 2016.

VII. WORK-PLAN FRAMEWORK

Design Summary	Performance Targets and Indicators of Success	Risks
Intended Impact	By 2031, earthquake-resilient building construction and land development norms are implemented in the Kathmandu Valley.	Rapid urban growth may intensify informal or private land development activities beyond the capacity of the government or municipality to regulate
Objective 1: Improve urban development policies to mitigate prevailing earthquake risks in the Kathmandu Valley by engaging decision makers with credible information on and analysis of building-sector damage in the Valley due to the Nepal 2015 earthquake (by July 2016).	– KP1 on documentation and analysis of damage prepared – KP2 on identification of prevailing risks and policy implications prepared – PB1 on policies for risk resilient housing-sector prepared – Options for adopting recommendations explored by decision makers	Agencies possessing data on building-sector damage assessment may not share their datasets in full and/or on time.
Objective 2: Promote risk-resilient urban land development by engaging decision makers with recommendations based on critical review of existing land readjustment practices (by December 2016).	– KP3 on improved LR process and implementing mechanism prepared – PB2 to communicate the plan prepared – Options for improving LR process and implementation mechanism explored – Recommendations for improving LR practice developed by engaging decision makers	Several prevailing legal and technical shortcomings in the LR process in Nepal may dominate research discourse and overshadow the focus of research which is risk-resilience.
Objective 3: Have recommendations for an improved M.Sc. Urban Planning curricula at the IOE submitted to the Educational Council for approval (by July 2016).	– Existing curricula accessed. – Recommended curricula submitted to Educational Council for approval	Delay in the Educational Council meeting may delay further action on the recommended curricula as well.
Objective 4: Build capacity of the IOE, as Nepal National K-Hub Center, in knowledge management, communications and learning (by December 2016).	– K-Hub webpage / website and newsletters developed – Knowledge products developed and shared – Policy strategies are influenced	Different priorities and schedules among the network members may affect harmonized progress.

Activities with Milestones

Objective 1: Improve urban development policies to mitigate prevailing earthquake risks in the Kathmandu Valley by engaging decision makers with credible information on and analysis of building-sector damage in the Valley due to the Nepal 2015 earthquake (by July 2016).
  i. Draft a concept paper for knowledge products KP-1 and KP-2 (October 2015).
  ii. Prepare case study on earthquake damage assessment in the traditional town of Sankhu, one of the worst-hit settlements in the Kathmandu Valley (Case Study 1, October 2015).
  iii. Draft an engagement strategy, and adapt and fill-in on an ongoing basis while engaging stakeholders throughout the process (review by Michelle L) (October 2015).
  iv. Prepare documentation on post-earthquake RVDA in the Kathmandu Valley (KP-1, January 2016).
  v. Develop policy recommendations for mitigating prevailing earthquake risks in the Kathmandu Valley (KP-2, March 2016).
    – Include relevant elements of good practices or experiences from other South Asian K-Hub partner countries based on the feedback received.
  vi. Communicate with stakeholders and decision makers on policy recommendations via a range of tactics including but not limited to:
    – Policy brief to communicate findings of KP-1 and KP-2 (PB-1 – April 2016)
    – One national workshop (May-June 2016)
    – Lecture as part of Eminent Lecture Series (May-June 2016)
    – High-level meeting with decision makers (July 2016)

Objective 2: Promote risk-resilient urban land development by engaging decision makers with recommendations based on critical review of existing land readjustment practices (by December 2016).
  i. Draft concept paper for knowledge product KP-3 (December 2015).
  ii. Prepare case study on existing and completed LR projects in Nepal focusing on issues, challenges and opportunities, supplemented by a review of international best practices (Case Study 2, February 2016).
  iii. Draft an engagement strategy and adapt and fill-in on an ongoing basis while engaging stakeholders throughout the process (review by Michelle L) (February 2016).
  iv. Draft a plan for improved LR process and implementing mechanism (KP-3, July 2016)

- Include relevant elements of good practices or experiences from other South Asian K-Hub partner countries based on the feedback received.
v. Communicate with stakeholders and decision makers on policy recommendations via a range of tactics including but not limited to:
    - Policy brief to communicate the plan (PB-3 – August 2016)
    - National workshop (September – November 2016)
    - Lecture as part of Eminent Lecture Series (September – November 2016)
    - High-level meeting with decision makers (December 2016)

Objective 3: Have recommendations for an improved M.Sc. Urban Planning curricula at the IOE submitted to the Educational Council for approval (by July 2016).
i. Form Curricula Committee (August 2015).
ii. Draft an engagement strategy, and adapt and fill-in on an ongoing basis while engaging stakeholders throughout the process (review by Michelle L) (September 2015).
iii. Prepare roster of expert reviewers (September 2015).
iv. Prepare terms of reference for expert reviewers (September 2015).
v. Prepare a preliminary diagnostic report on existing curricula to share with expert reviewers and K-Hub regional partners (October 2015).
vi. Review existing urban planning curricula in South Asia region and three additional internationally recognized institutes around the world to identify gaps and opportunities for improved curricula (November 2015).
vii. Prepare a draft report on improved curricula with inputs from expert reviewers (December 2015).
viii. Collect and compile experts' reports on revised curricula (January 2016).
ix. Discuss knowledge to date with Curricula Committee (January 2016).
x. Prepare technical brief and presentation slides to communicate with the identified audience (March 2016).
xi. Promote the recommendations to the identified audience via (April - May 2016):
xii. Workshops with academics, relevant experts, and decision makers.
xiii. Lecture as part of Eminent Lecture Series.
xiv. Incorporate workshop feedback and finalize report on curricula (June 2016).
xv. Submit recommended curricula to IOE Educational Council for approval (July 2016).

Objective 4 (Operational): Build capacity of the IOE, as Nepal National K-Hub Center, in knowledge management, communications and learning (by December 2016).
i. Activating and maintaining webpage / website (September 2014 ongoing)
    - Participating in working group (1 meeting/month)
    - Providing content (minimum 1 web story/month, documentation for K-Hub publications such as work plan, case studies, and KPs)
ii. Contributing to Newsletter - twice yearly
    - Participating in working group (twice yearly outputs)
    - Providing content for two newsletters /year
iii. Reporting and Learning (ongoing activities)
    - Monthly Telecoms (to ADB) by team leader
    - Progress Reports every 2 months (to Regional Coordinator and ADB)
    - Annual Reports of Working Groups (to ADB, Regional and National Centre)
    - Steering Committee Meetings (team leader, at least once per year)
    - Twice Yearly reflections on outcomes (telecoms between our team and ADB)
    - Mid Term Capacity Building / Reflection Retreat (for national teams - early 2016)
    - Participation in two training webinars per year (for national teams, online)
    - Participation in a final Reflection Workshop on Lessons on Implementation of Regional K-Hub (mid- 2017 - K-Hub partners and implementing agencies)
iv. Knowledge Products (ongoing activities)
    - Contributing to Knowledge Products of other countries by submitting country profile on the topics requested (9 in total)
    - Reviewing the KP concept paper of other countries and providing comments
    - Contributing to the regional knowledge product(s) (i.e. regional database led by NIUA in India)
        - Participate in working group
        - Contribute to influencing strategy
        - Contribute to the concept note on the KP
        - Support implementation

ADB = Asian Development Bank, IOE = Institute of Engineering, K-Hub = knowledge hub, KP = knowledge product, NIUA= National Institute of Urban Affairs, PB = policy brief, RVDA= Rapid Visual Damage Assessment.

VIII. TEAM INPUTS

Objective 1: Improve urban development policies to mitigate prevailing earthquake risks in the Kathmandu Valley by engaging decision makers with credible information on and analysis of building-sector damage in the Valley due to the Nepal 2015 earthquake (by July 2016).

Position	Person-month inputs
Team Leader	4
Urban Specialist	3
Infrastructure Specialist	5
Non-key Specialists	3
Research Assistants	15
Total	**30**

Objective 2: Promote risk-resilient urban land development by engaging decision makers with recommendations based on critical review of existing land readjustment practices (by December 2016).

Position	Person-month inputs
Team Leader	4
Urban Specialist	5
Infrastructure Specialist	3
Specialist Associates	3
Research Assistants	15
Total	**30**

Objective 3: Have recommendations for an improved M.Sc. Urban Planning curricula at the IOE submitted to the Educational Council for approval (by July 2016).

Position	Person-month inputs
Team Leader	4
Urban Specialist	4
Infrastructure Specialist	4
Non-key Specialists	4
Research Assistants	2
Total	**18**

Objective 4: Build capacity of the IOE, as Nepal National K-Hub Center, in knowledge management, communications and learning (by December 2016).

Position	Person-month inputs
Team Leader	3
Urban Specialist	3
Infrastructure Specialist	3
Research Assistants	1
Total	**10**