



University Graduate Syllabi for Urban Studies, a comparative perspective: China, EU, World

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TABLE OF CONTENTS

| | |
|--|-----------|
| PREMISE | 4 |
| 1. INTRODUCTION | 4 |
| 2. CONCEPTUAL AND ANALYTICAL FRAMEWORK | 6 |
| 2.1 EMBEDDING EDUCATION FOR SUSTAINABLE URBAN DEVELOPMENT INTO EDUCATION SYSTEMS | 6 |
| 2.2 THE DESIGN-POLICY-MANAGEMENT DIMENSIONS IN URBAN STUDIES EDUCATION | 7 |
| 2.3 URBAN STUDIES EDUCATION (USE) FOR SUSTAINABLE URBAN DEVELOPMENT (SUD): ENABLING FACTORS, CHALLENGES, SIGNS OF PROGRESS | 8 |
| 2.4 FOCUS ON CHINA | 11 |
| 3. METHODOLOGY FOR A COMPARATIVE ANALYSIS OF PROGRAMS IN URBAN STUDIES | 12 |
| 3.1 SELECTION OF PROGRAMS IN URBAN STUDIES | 12 |
| 3.2 COLLECTION OF DATA: NETNOGRAPHY + SURVEY..... | 13 |
| 3.2.1 <i>Netnography</i> | 13 |
| 3.2.2 <i>Survey</i> | 14 |
| 4. COMPARING PROGRAMS IN EU, CN, ROW | 15 |
| 4.1 ANALYSES OF PROGRAMS: GENERAL OVERVIEW DATA..... | 15 |
| 4.1.1 <i>Programs' Orientation</i> | 15 |
| 4.1.2 <i>Educational Skills enabling Sustainable Urban Development</i> | 16 |
| 4.1.3 <i>Objectives supporting SUD, Ethical values, Cross- Inter- or Trans-disciplinarity</i> | 17 |
| 4.2 ANALYSES OF DATA ON COURSES WITHIN PROGRAMS..... | 20 |
| 4.2.1 <i>Key sustainability topics covered by courses</i> | 20 |
| 4.2.2 <i>Dominant typologies of courses</i> | 22 |
| 4.2.3 <i>Further survey results</i> | 25 |
| 5. DISCUSSION | 26 |
| 6. CONCLUSIONS AND RECOMMENDATIONS | 28 |

PREMISE

This report presents the results of **Task 6.3: Review and recommend improvements to University level syllabuses on urbanization**, the scope of which was discussed and extended at the URBACHINA project meeting and III International Conference in Kunming (3-5 June 2013), reinforcing the sustainability and comparative dimension. Following the presentation of preliminary results, it was agreed: 1) to focus the analysis on the sustainability dimension within urban studies, and 2) to expand the set of case studies to three geographical groupings: China (CN), Europe (EU) and the Rest of the World (RoW).

1. INTRODUCTION

Education for sustainability has recently emerged as an urgent cross-curricular priority and also a challenge to higher education institutions all over the world. In the wake of the United Nations declaration of the Decade of Education for Sustainable Development (DESD, 2004-2014), advocating the need for universities to address the complexity of current real-world contexts by embedding sustainability in all learning areas across the curriculum (UNESCO 2014), notions of sustainability and sustainable development have been increasingly institutionalized and incorporated into the curricula of higher education institutions (Dyment et al 2014). Over the decade, many universities worldwide have indeed adapted their syllabi so as to integrate sustainability concepts into their programs' curricula. However, this has been a slow process (Lozano 2010), education for sustainability is still lacking a consistent interdisciplinary conceptual framework (Jabareen 2012), and a coherent curriculum for sustainability and sustainable development remains a challenge (Ryan et al. 2010). As UNESCO recently recognized, a full integration of sustainability values has yet to take place in most countries (UNESCO 2014), which implies that further efforts are required to ensure that sustainability and sustainable development become an integral part of the academic culture.

Within this context, **urban studies education (USE)** – by which we mean the various academic programs associated with the study of, and planning for, urban areas and their regions, and taught with different focuses in a range of faculties (e.g. architecture, planning, geography, engineering, economics) – plays a key role. During the UN Summit for Sustainable Development in Rio de Janeiro (2012), governments again recognized the need to support higher education institutions to secure the research, innovation and skills that they will need to advance national sustainable development objectives (UNESCO 2014). Such need becomes especially evident when considering the pace and scale of urbanization in developing countries. Urbanization is amongst the most significant global trends of the 21st century and provides the "setting and underlying base" for global change (UN Habitat 2012). Thus, USE is called upon to promote a comprehensive understanding of urban processes and urbanization dynamics, advancing an academic culture of sustainability and, in particular, enabling **sustainable urban development (SUD)**, by which we mean environmental justice, economic improvement and social equity as reflected on urban systems (i.e., buildings, towns, cities and their infrastructures). The relationship between USE and SUD is the focus of this study.

Responding to an increasing complexity of social and spatial interactions in a globalized society, the focus on SUD has extended the traditional concerns of USE – as taught by most conventional

programs in architecture, planning, or urban design – from physical design to policy and social science topics (Dimitrova 2014). Professional urban practitioners increasingly need to deal with emerging ethical concerns related to social, environmental and economic issues, as well as governance challenges, formerly neglected by canonical urban studies. Future graduates will also need to respond to new societal challenges and expectations by dealing with "complexity, uncertainty, change, other disciplines, people, environmental limits, whole life costs, and trade-offs" (Cruikshank et al 2012: 249). Some master-level programs (MA or MSc) in urban studies are reportedly responding to these challenges by questioning long-established tenets of urban planning (e.g. treating cities as products instead of dynamic processes), promoting critical thinking, exploring informal urbanisms, community-building and progressive collaboration, as well as evolving towards more inter- or trans-disciplinary curricula (Silkes 2014).

USE has evolved to encompass many different academic backgrounds. There have been initiatives to define a set of common values and principles to guide scholarship in USE, such as the "statement" in the charter of the Association of European Schools of Planning (AESOP) which established the "core requirements for a high quality European Urban Education" (AESOP, 1995) followed today by all member schools. Concerned with a role for planning education, the statement emphasizes that it must involve:

the scientific study of and training in creative conceptual and practical thinking on the relation between society and environment at various territorial levels and in the search, development and advancement of opportunities for purposeful intervention in that relation to ensure sustainable development (AESOP, 1995).

Planning's ultimate goal is therefore to guarantee the sustainable development of society and environment. However, according to UN Habitat, in 2009, even though sustainable development was taught already in a majority of planning schools worldwide, curriculum reform towards sustainability was still missing in many schools. There were schools that taught the technical and analytical aspects of planning but did not incorporate the design and policy approaches, others that did not include the participatory component and others still which did not effectively integrate issues of sustainability, globalization, social equity or climate change (UN Habitat 2009).

The overall aim of the following inquiry – part of a larger study on urbanization trends in Europe and China (URBACHINA, see: <http://www.urbachina.eu/index.php/en/>) – is to carry out a comparative review of a sample of post-graduate level curricula in urban studies in Europe (EU), China (CN) and the Rest of the World (RoW), in order to examine how current post-graduate programs in urban studies are preparing the next wave of city-shapers, and ask the core question: **how are sustainable challenges to urban development being acknowledged and addressed in post-graduate (master level) urban studies programs across the world?**

The next section describes the conceptual framework of the study and summarizes the results of our detailed review of literature on education, identifying enabling factors, challenges and signs of progress in USE and SUD. On this basis we defined the key elements of our analytical framework:

- Programs' overall orientation;
- Educational skills that will enable future graduates to promote SUD;
- Objectives and subject matters supporting: SUD; an ethical perspective; and the need for interdisciplinarity;
- Sustainability topics covered by Core & Elective Courses;
- Dominant typologies of courses.

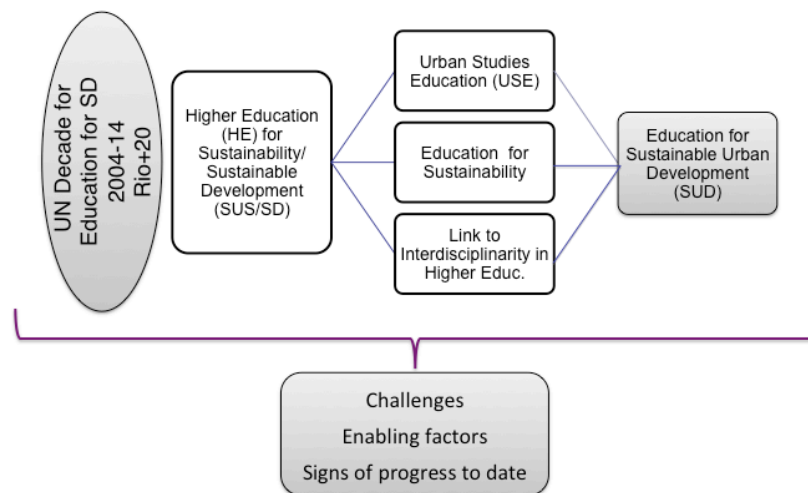
Section 3 describes the methodology for the selection of 25 urban studies’ programs and the method of data collection. Section 4 presents the results of the comparative analysis of the 25 programs in terms of the key elements of the analytical framework. Section 5 discusses the significance of the data collected; and Section 6 draws the overall conclusions of the comparative analysis, including elements of good practice for the framing of academic programs in urban studies capable of promoting SUD.

2. CONCEPTUAL AND ANALYTICAL FRAMEWORK

2.1 Embedding education for Sustainable Urban Development into education systems

Our analytical framework was shaped on the basis of a comprehensive review of the academic literature on education in urban studies and education in sustainable development (see Figure 1 below), which identified the major challenges, enabling factors and signs of progress to date in higher education for Sustainable Urban Development (SUD).

Figure 1 – Conceptual framework



Source: Authors

As mentioned in the introduction, the UN Decade of Education for Sustainable Development (EfSD), launched in 2005, has initiated an important movement towards embedding the notions of sustainability into education systems around the world. It was a call for universities to adapt their curricula by incorporating concepts of environmental and social responsibility into the fields of action of architects, planners, engineers, and other graduates (Junyent and de Ciurana 2008). As recently stated by UNESCO, “the launch of the Decade of EfSD in 2005 marked the beginning of 10 years of an explicit global movement towards improving and reorienting education systems towards sustainable development” (UNESCO, 2014). This trend was further advanced recently by the Rio+20 Higher Education Sustainability Initiative, where governments recognized the need to support higher education institutions to secure the research, innovation and skills that will be needed to advance sustainable development objectives (Rio+20 HESI 2012).

Some key findings of the Final Report of the UN Decade of Education for Sustainable Development show that nearly three-quarters (72%) of Member States believe that progress has been made with respect to embedding sustainable development into education systems (UNESCO 2014). However, findings also show that a full integration of sustainable development into higher education systems has yet to take place in most countries. Among other requirements, an innovative agenda in USE towards SUD needs to include strategic spatial planning, new urban management approaches, participatory processes, and sustainable urban form (UNHabitat 2009). We will explore such requirements in the following sections.

2.2 The design-policy-management dimensions in Urban Studies Education

Based on UN-HABITAT's framing of the key debates on urban planning education over the last century (UN Habitat 2009) and other authors (see below), and as already mentioned on the previous section, it was possible to identify an important nexus between the design, policy and management dimensions in the field of USE. These three dimensions, or major orientations, are not exclusive and are present, albeit in different combinations, in all USE programs. The literature reviewed supports the idea that programs with a stronger sustainability focus have a balanced mix of these three dimensions/orientations. In short, these are:

- **Design** - with a focus on planning instruments (e.g. neighborhood-scale projects, master plans). However, besides architecture, spatial planning and landscape architecture (the traditional fields of urban planning) USE must acknowledge social and environmental concerns and address the sustainability challenges underscored by the social sciences (Krieger 2009; Yüsek 2013; Bodenschatz 2011);
- **Policy** - with a focus on social sciences' concerns and challenges. While urban planning must be informed by the social sciences, it differs from these in fundamental ways, including its persistent ties with practice - thus with spatial planning and urban management - as well as its normative nature, concerned with "how the world should be" (Beard and Basolo 2011);
- **Management** - with a focus on urban dynamics and change (including strategic planning and futures studies). Urban strategic planning and future thinking/visioning are management tools that differ from conventional urban planning and can be more effective to address the complexity of urban dynamics and manage processes of city change (UN Habitat 2007; Rohweder & Virtanen 2009). Strategic plans, however, do not dispense with spatial planning (UN Habitat 2007).

Our analytical framework integrates these interrelated dimensions, as well as the enabling factors of USE for SUD (see section 2.3), in order to probe the sample of 25 USE programs, as detailed in sections 3 and 4.

2.3 Urban Studies Education (USE) for Sustainable Urban Development (SUD): Enabling factors, Challenges, Signs of progress

A comprehensive review of the literature helped to identify a set of enabling factors, challenges and signs of progress in Urban Studies Education (USE) for Sustainable Urban Development (SUD). These were integrated into our analytical framework (see section 3), are described below and are summarized in Table I.

- **Integrating physical design and social science/policy approaches, as well as urban management issues** is key to effectively incorporate sustainability in urban studies. There is an enduring tension between design and policy orientations in USE. Programs with a focus on urban design have gradually moved towards an increased focus on policy and social science. However, during the last decade of the 20th century there has been a resurgence of design in a number of schools (UN Habitat 2009). As implied by Senbel (2012) literacy in urban design is necessary for understanding the spatial implications of policy decisions (Senbel 2012). Moreover, in order to address the complexity of urban dynamics and deal with processes of city change, an important focus on implementation and management has been adopted by several new post-graduate programs (Silkes 2014). These programs favor future thinking/visioning (Rohweder & Virtanen 2009) and dynamic, inclusive and participatory strategic planning (UN Habitat 2007), as part of an innovative agenda towards SUD. As UN Habitat (2009) has asserted, however, some schools do not fully integrate all these dimensions (UN Habitat 2009).
- **Skills towards SUD**, according to UN Habitat (2009), may be essentially grouped into three categories: analytical, technical, and communication/negotiation. Worldwide, there are considerable differences in the relative weight given to these different skills in the planning curricula. This relates mostly to the schools' orientation in terms of design and/or policy approaches. For example, planning schools in Asia value more analytical and technical skills; in Latin America emphasis on technical skills is more common than on participation or negotiation; and in Europe planning education is characterized by a wide diversity of curriculum content, according to the diverse national approaches (UN Habitat 2009).
- **Merging theory and practice** in urban studies concerns the need to develop capabilities to translate knowledge and analysis into action (Campbell 2012). A proper mix of theory and practice is required in order to combine critical reflection, phenomenological experience, and procedural knowledge (Geppert and Verhage 2008) and is essential to develop students' ability to engage in ethical reflection, and reflective practice (Schön 1983, Frank 2002). A tension between theory and practice, however, underpins the debate on what should be the ideal core curriculum and which skills are most useful: academics tend to overemphasize the abstract, while practicing professionals tend to emphasize the instrumental (Edwards and Bates 2011).
- **Geographical focus on the local-global nexus** is required in order to provide future professionals with alternative theoretical frameworks that acknowledge and address new urban contexts and the now-dominant conditions of urban life in many cities – mostly, but not only, on the Global South (Watson 2009). Urban sustainability is local in nature but needs to acknowledge regional and global interdependencies (Vojnovic 2014; Wals & Corcoran, 2006). The USE curricula need to contribute to an understanding of the dynamics shaping 21st century cities and bring to the fore planning concerns and knowledge about socio-

spatial trends and challenges of rapid urbanization and urban informality, climate change and ecological concerns. It also needs to help develop the understanding of participatory planning issues in multicultural contexts (UN Habitat 2009). There is, however, a gap between more traditional approaches to planning – mostly shaped by planning theories and practice originated in the global North – and the problematic conditions of urban life (including poverty, inequality, informality and spatial fragmentation) on a growing number of world cities (Watson 2009).

- **Promoting participatory processes and deliberative approaches** is indispensable to achieve equity in urban processes and decisions, a core principle of SUD. Advocacy planning (Davidoff 1965), deliberative and participatory planning (Forester 1999), along with social learning (Bandura 1971) became the keystones upon which many planning schools have developed their curricula and the basis for current bottom-up theories and initiatives of civic engagement in governance strategies and planning processes (Healey, 1996; UN Habitat 2009). Endorsing collaborative planning in USE, through team work, workshops and community projects is therefore indispensable to the promotion of SUD.
- **Ethical values and critical reasoning** are inseparable from the principles of sustainable development. "Critical reflection" and "values clarification" have become core components of education for sustainability (Du et al. 2013). To embed sustainable development in the curricula requires more than including new contents; USE for SUD requires the endorsement of ethical and critical reasoning (Holmberg et al 2008) through a curricula that promotes awareness of ethical values such as social and economic equity, and environmental responsibility (UN Habitat 2009). The need to critically engage with contemporary urban issues (Silkes 2014) and increasingly complex social and spatial interactions, requires dealing with emerging ethical issues related to social and environmental justice, formerly neglected by canonical urbanism (Dimitrova 2014). The engagement with the normative foundations of SUD, such as "human flourishing and the just city", however, will be always a contested territory (Friedmann 2008). Issues of gender, for example, are still exceptional in the core curricula of most urban planning schools (UN Habitat 2009).
- **Interdisciplinarity and cross-sector collaboration** are critical to USE for SUD, because sustainability is inherently interdisciplinary, requiring integrative approaches, systemic thinking and cross-sector collaboration (Rohweder and Virtanen 2009). It is also consensual that urban complexity cannot be understood from the perspective of a single discipline (Trencher et al 2014; Beard and Basolo 2011; Krieger 2009; Friedmann 2008; Martin and Beatley 1993). On the other hand, interdisciplinarity faces many challenges. Traditional disciplines are entrenched academic territories (Mitrany and Stokols 2005) with resilient disciplinary boundaries and discreet epistemologies, methods and discourses (Bradbeer 1999), subscribing particular worldviews, tools, exempla, concepts, and theories (Feng 2012). Research across disciplines rarely satisfies the criteria and standards of each of the disciplines involved (Mitrany and Stokols 2005) and there is a stigma of legitimacy, associated with the risk of superficiality/generalization (Bursztyjn & Drummond, 2013).

Table I summarizes the enabling factors, challenges and signs of progress to date in USE for SUD, identified in the literature.

Table I - Enabling factors, challenges and signs of progress to date in USE for SUD

| Enabling factors | Major challenges | Signs of progress |
|--|---|---|
| 1. Integrating physical design and social science/policy approaches with urban management | <ul style="list-style-type: none"> • Full integration of these dimensions is difficult to achieve in the short time-span of a typical programme | <ul style="list-style-type: none"> • The focus on sustainability has extended the concerns of spatial planning education from physical design to social science and urban management topics, and most planning schools worldwide already mix design and policy approaches in their curricula |
| 2. Analytical, technical, and communication skills enabling SUD | <ul style="list-style-type: none"> • Diverse schools rank the importance of these skills differently: this relates mostly to the schools' orientation in terms of design and/or policy and management approaches | <ul style="list-style-type: none"> • A diversity of educational approaches tends to favor context-oriented USE, rather than a 'one-world' universalist approach to urban planning |
| <i>Merging theory and practice</i> | <i>Academics emphasize theory; practicing professionals put a stronger focus on practice</i> | <ul style="list-style-type: none"> • Merging theory and practice is pursued in many planning schools through 'project-based learning', including hands-on studios and workshops, field trips, community projects and real life problem-solving planning experiences |
| <i>Geographical focus on the local-global nexus</i> | <i>Gap between traditional approaches, shaped by theories and practice of the 'global North' and the conditions of urban life on a growing number of world cities</i> | <ul style="list-style-type: none"> • New urban perspectives from the 'global South' are being taught at some schools, providing an important conceptual tool for a shift in planning theory and practice |
| <i>Participatory processes and deliberative approaches</i> | <i>Growing number of stakeholders and diverse interests involved in governance and planning processes</i> | <ul style="list-style-type: none"> • On a global level, curriculum content in the areas of sustainable development, including participatory or deliberative planning and social equity is covered by the majority of planning schools (climate change matters are less prevalent) |
| 3. Ethical values and critical reasoning | <ul style="list-style-type: none"> • Emerging ethical issues related to social and environmental justice are a politically charged and contested territory | <ul style="list-style-type: none"> • A new ethical relationships between people and the environment, inherent to the concept of sustainability, is already patent in the curricula of most schools |
| 4. Interdisciplinarity and cross-sector collaboration | <ul style="list-style-type: none"> • Resilient disciplinary boundaries; discreet epistemologies, methods and discourses. | <ul style="list-style-type: none"> • Evidence suggests that cross-sector university partnerships for urban sustainability are increasingly common worldwide and these partnerships have the potential to link place-specific issues to regional and global concerns. |

Source: Authors

2.4 Focus on China

We have also identified some of the challenges of USE for SUD that are particular to China. Besides broad geographical differences and the cultural diversity of a vast country (Tove et al. 2014; Niu et al. 2010), Chinese programs need to endorse more interdisciplinarity, or "broader educational approaches across academic disciplines" (Niu et al. 2010). The rising demands for SUD in China require an urgent improvement in environmental education in Chinese universities (Xiong et al. 2013), as well the development of critical thinking and reflection skills, which are lacking in Chinese students (Du et al. 2013). Moreover, there is limited information and few publications on sustainable development initiatives in Chinese universities (Niu et al. 2010). Beyond the implementation of 'green University' policies, focusing on the physical campus operation, such as 'green living' and energy saving measures, curricular orientation towards SUD needs to be improved (Yuan et al. 2013). Some Chinese scholars also point out the need to underplay formalism-oriented architecture design and Western influences in favor of the core values of urban design based on Eastern traditions (Cai 2011).

On the other hand, there are also signs of progress in USE for SUD, both in China and worldwide. Progress towards education for SUD varies somewhat across world regions, but in all regions there are signals that students are starting to look for a sustainability-centered education (UNESCO 2014). Despite current challenges, some level of sustainability and SUD has been incorporated into most planning schools curricula (UN Habitat 2009). Moreover, the focus on SUD has extended the concerns of traditional planning education from physical design to policy and societal topics (Dimitrova 2014), thus incorporating many of the sustainability concerns of the social sciences into spatial planning. Many USE programs worldwide already mix design and policy approaches in their curricula, albeit in different combinations. While in the UK and USA programs are more likely to focus on policy/social science approaches, Southern European countries, as well as China, tend to emphasize physical design (UN Habitat 2009). Evidence also suggests that cross-sector university partnerships for urban sustainability, with the potential to link place-specific issues to regional and global concerns, are increasingly common all over the world (Trencher et al. 2014) and new conceptual tools, such as "a view from the global South", are being taught on some programs, providing an important contribute for a shift in USE theory and practice (Watson 2009). Last but not the least, an emphasis on interdisciplinary curricula in USE have already widen the educational options for students interested in becoming professional urban practitioners (Silkes 2014) in many countries.

In China, the Agenda 21 of 1994 identified for the first time "education and capacity-building" as essential to sustainable development; and in 1996 it promoted, on selected universities, a series of pilot initiatives education for sustainable development (Niu et al. 2010). As Chinese scholars Du et al (2013) have asserted, given China's multiple challenges of sustainable development "in all aspects of society", the Chinese higher education system has the responsibility and the need to provide young professionals with knowledge of, and skills in, sustainability. In fact, the concept of "Sustainable University" or "Green University" has been widely debated on Chinese scholarship over the last decade (Yuan & Zuo 2013), and recent trends indicate that environmental protection and sustainable development are being gradually incorporated into the curricula of many disciplines of the natural and social sciences, as well as on campus life (Xiong et al. 2013).

3. METHODOLOGY FOR A COMPARATIVE ANALYSIS OF PROGRAMS IN URBAN STUDIES

3.1 Selection of Programs in Urban Studies

To answer our core question we have examined 25 post-graduate programs in urban studies (8 in EU; 9 in CN; 8 in RoW) – considered among some of the best and innovative in their country and world region. The selection of this sample was thus based on the method of judgment sampling (non-random sample that is selected based on the opinion of an expert), drawing first on a survey involving the 12 members of the URBACHINA consortium (representing Europe and China) and its Scientific Committee (8 members from Canada, China, France, Sweden and the UK), and then on snowball sampling involving scholars worldwide (an additional 52 scholars contributed).¹

Finally, we compared the resulting selection of 25 programs with the world ranking of the university they belong to. Each program's university was ranked according to its score in: the QS World University Rankings WORLD 2014 (world-a); the Times Higher Education World University Rankings 2014-2015 (world-b); and the QS World University Rankings BRICS 2014 (BRICS) where applicable. We found that the final sample is representative of some of the most prestigious universities in the three regions (see Table II). Thus, while by no means comprehensive, it offers a valid judgment sample for our qualitative study. Table II lists the final selection of programs in Urban Studies in Europe, China and the RoW.

Table II – Selected Programs

| Ref. | University/School | Master programmes | World University Rankings |
|------|--|--|------------------------------|
| EU1 | TU Delft University of Technology - Faculty of Architecture, THE NETHERLANDS | Architecture, Urbanism & Building Sciences | 86 (world-a) 71 (world-b) |
| EU2 | University College London (UCL) The Bartlett Development Planning Unit, UK | Urban Development Planning | 5 (world-a) 22 (world-b) |
| EU3 | University of Oxford, UK | Sustainable Urban Development | 5 (world-a) 3 (world-b) |
| EU4 | University of Cambridge, UK | Architecture & Urban Studies | 2 (world-a) 5 (world-b) |
| EU5 | Institut d'Urbanisme de Paris (IUP) Centre Franco-Chinois Villes et Territoires, FRANCE | Urbanisme et aménagement | n/a |
| EU6 | London School of Economics, Department of Geography and Environment, UK | Urbanisation & Development | 71 (world-a) 34 (world-b) |
| EU7 | Erasmus Univ. Rotterdam, Institute for Housing and Urban Development Studies, THE NETHERLANDS | Urban Management & Development | 90 (world-a) 72 (world-b) |
| EU8 | Technische Universitat Berlin, GERMANY | Urban Design | 192 (world-a) |

¹ Respondents were asked to list between 10 and 15 graduate programs (in China, the EU and the rest of the world), focusing on what they considered to be among the best (the most prestigious amongst peers) and innovative programs in the broad field of Urban Studies. Overall, we sent the survey to 72 individuals and collected 21 valid responses (28% response rate). The respondents identified a total of 181 programs (74 in Europe; 24 in China; 83 in the RoW). From this larger sample we selected 25 programs that represented the best programs based on the criteria of "excellence according to peers", and which also represented: a) well established but also innovative programs - where possible given suggestions made; b) a balanced sample of the diverse faculties represented (architecture, planning, geography and other social sciences); and c) a wide geographical perspective with regards to the RoW group of programs: here we included programs of the Global South, even if they scored less well than programs in North America.

| Ref. | University/School | Master programmes | World University Rankings |
|------|---|-------------------------------------|---|
| CN1 | Tongji University - College of Architecture and Urban Planning | Urban Design | 23 (BRICS) 393 (world-a) |
| CN2 | Nanjing University, School of Architecture and Urban Planning | Urban Planning | 251-275 (world-a) |
| CN3 | Tsinghua Urban Planning & Design Institute | Architecture (China Builds program) | 1 (BRICS) 393 (world-a) |
| CN4 | University of Hong Kong | Urban Planning | 28 (world-a) 43 (world-b) |
| CN5 | Peking University - School of Urban Planning and Design | Urban & Regional Planning | 2 (BRICS) 57 (world-a) 48 (world-b) |
| CN6 | Chinese University of Hong Kong - School of Architecture | Urban Design | 46 (world-a) 129 (world-b) |
| CN7 | Xi'an Jiaotong-Liverpool University, Department of Urban Planning and Design | Urban Planning & Design | 19 (BRICS) 47 (world-a) 276-300 (world-b) |
| CN8 | South China University of Technology | Urban Planning & Design | n/a |
| CN9 | East China Normal University, School of Resources and Environment Science | Human Geography | n/a |
| Ref. | University/School | Master programmes | World University Rankings |
| RW1 | UC Berkeley, College of Environmental Design, USA | City & Regional Planning | 27 (world-a) 8 (world-b) |
| RW2 | Columbia University - School of Architecture, Planning and Preservation, USA | Urban Planning | 14 (world-a) 14 (world-b) |
| RW3 | Harvard University - Graduate School of Design, USA | Urban Planning | 2 (world-a) 2 (world-b) |
| RW4 | MIT - Department of Urban Studies and Planning, USA | City Planning | 1 (world-a) 6 (world-b) |
| RW5 | El Colegio de Mexico, MEXICO | Estudios Urbanos | n/a |
| RW6 | Universidade Federal do Rio de Janeiro, Instituto de Pesquisa e Planejamento Urbano e Regional, BRAZIL | Planejamento Urbano e Regional | 271 (world-a) 21 (BRICS) |
| RW7 | Pontificia Universidad Católica de Chile Instituto de Estudios Urbanos y Territoriales, CHILE | Desarrollo Urbano | 167 (world-a) |
| RW8 | University of Cape Town, School of Architecture, Planning, and Geomatics, S. AFRICA | City & Regional Planning | 141 (world-a) 124 (world) |

Source: Authors

3.2 Collection of data: Netnography + Survey

3.2.1 Netnography

We conducted a netnography² of all the selected Master programs, based on the content analysis of two types of data accessible from the programs' websites: (1) the (explicit) statements and (implicit) aims³ of the program, as described on the programs' and departments' webpages; and (2) the more

² Responding to the growing importance of the internet as a site for research, netnography is a qualitative, interpretive research method that adapts ethnographic techniques to the study of social media (Kozinets 2010). It is a methodology especially designed to study cultures and communities online.

³ By *implicit aim*, we mean, for example, assuming that a program addresses 'Social/economic equity' based on the statement that one of its objectives is to teach students notions about "social and spatially just urban governance" (EU2).

detailed information available from the individual courses' syllabi. We therefore drew on two types of data available: the general overview of the programs as expressed in their opening statements and descriptions, and the detailed data available from the breakdown of each program into individual courses (core and elective) and the content analysis of their syllabi (in some cases we had to ask the Faculty or Department for additional information). This data was then examined in light of the analytical framework, developed from the review of the literature, and summarized in section 2. Results of the netnography are described in section 4.

3.2.2 Survey

In order to comment, add to, and validate our analysis, we have conducted a survey to the 25 programs, targeting their directors and colleagues involved in the management and shaping of the course (see Appendix 3 for the online survey template). We received valid responses from 13 programs. The survey consisted of 8 questions intended to evaluate the role/weight the program gives to specific sustainability themes and educational skills. For each of the 25 programs, the questionnaire evaluates: (1) Priorities influencing the focus of the program; (2) Integration of sustainability dimensions; (3) Promotion of educational skills capable of enabling SUD; (4) Promotion of interdisciplinarity. There were also specific questions to check if the data resulting from our netnographic evaluation of the program was consistent with the respondents' direct knowledge, and views.

From the review of literature we defined the five dimensions of the inquiry that would help answer our research question:

1. The Higher Education Program's overall orientation, in term of the three dominant dimensions of urban studies: *design, policy and management*;
2. Objectives and subject matters that support Sustainable Urban Development (SUD), an ethical perspective, and the need for interdisciplinarity;
3. SUD topics covered by Core & Elective Courses;
4. Educational skills that will enable future graduates to promote SUD; and
5. Dominant format of Core Courses.

While the netnography focused on all the topics, the survey focused on sustainability topics (point 3) and educational skills (point 4). Results of the survey are fully described in section 4.

There are limitations to our data collection, which are partly due to limited resources that did not allow for a full survey or further triangulation of data (beyond literature, netnography and a limited survey). Some descriptions of programs and/or courses are very general and therefore will not fully express their actual motivation towards sustainability and SUD. For example, practical courses under the guidance of advisors, as well as internships and field work, which are critical to develop communication skills, may not appear in the materials provided and accessible on the internet. Considering however that the programs' websites are the programs' presentation to the outside world, one may question the relevance attributed to sustainability and SUD – even if present, it is not visible and, as such, not considered a factor of attraction for students.

Overall, we believe the study provides a sufficiently diverse and detailed review of state of the art graduate urban studies, to raise important questions about the direction, strengths and weaknesses of their sustainable development orientation.

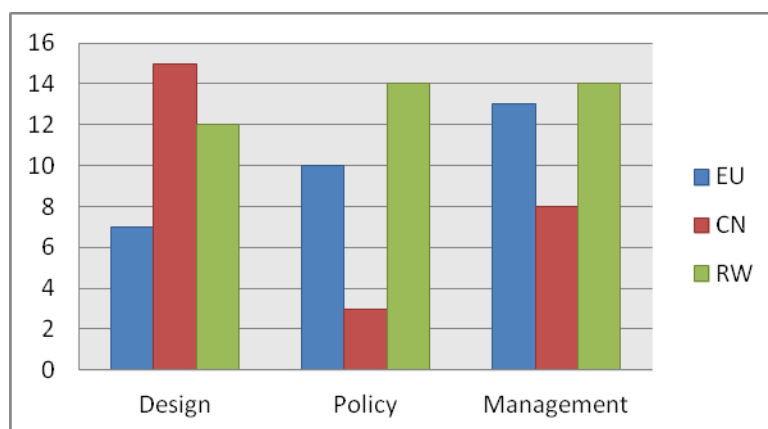
4. COMPARING PROGRAMS IN EU, CN, RoW

4.1 Analyses of Programs: general overview data

4.1.1 Programs' Orientation

Based on the statements and objectives outlined on the programs' descriptions on the web, we were able to determine the programs' orientation(s), along the three broad categories identified in the literature: (1) Design (focus on planning instruments); (2) Policy (focus on social sciences concerns and challenges); (3) Management (focus on urban dynamics and change). For each program we assigned between 0 and 2 points on each category (for example, a program could have 2 points in Design; 0 points in Policy; and 1 point in Management). Figure 2 expresses the results of this analysis grouped by regions. Values in figure 2 represent the sum of points on each category for all the programs of a given region.

Figure 2 – Programs' Orientation



Source: Authors

Compared with Europe and the rest of the World, which have a relatively balanced focus on the three dimensions/orientations of USE, Chinese programs show a much stronger (unbalanced) focus on design, and appear to pay little attention to the policy dimension. The focus on design is substantially weaker in Europe than in the other regions. Programs in RoW have the most balanced mix of the three dimensions/orientations.

Programs' Orientation: survey results

In our survey to program directors, results show that regarding the orientation of programs in terms of design, policy and management there were major discrepancies between our results, derived from the program descriptions on the internet, and the informed opinion of program directors (there were discrepancies in 9 cases). These discrepancies may be linked to limitations of this data collection, which did not include the final projects' contents. Some respondents say that graduation projects overcome some of the programs' shortcomings, as the three orientations are usually mixed

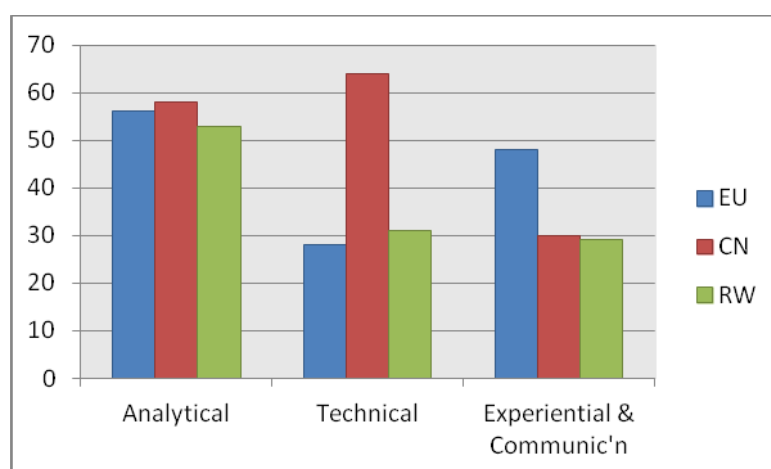
in different combinations on students' theses or final projects. As a whole, they tend to value more design (39%) closely followed by policy (35%) and then management (26%). Our analysis was correct in assuming the prevalence of the design orientation (44%), but the importance of policy (20%) and management (36%) is inverted. Both European programs and programs in the RoW put greater weight on the design component (42% and 45% respectively), while the importance of the policy and management components is reversed: more weight on policy in the RoW (30%) and more importance on management in Europe (about 30%). Our netnography indicated a more even balance in programs in the RoW, and – a major discrepancy – that the policy component had much less weight both in European and Chinese programs. A closer comparison between our findings and the informed opinion of program directors, suggests we may have underrepresented the importance programs assign to the policy orientation in their curricula. This is also true for the design component in programs in the RoW. This can be explained by the fact that these dimensions are often approached during the student's project, which has a margin of freedom.

Still there seems to be a great motivation to increase the policy and management components of urban studies programs, and some directors say they are willing to introduce changes to the curricular structure. In Europe, one said that they would like to offer students the chance to decide between a practice-focused track (design oriented) or a research-focused track, which would include a stronger orientation in policy and management, while another respondent stated that it would be desirable to add additional tracks covering more policy and management issues, if financially viable. Additionally, in China, another respondent said he/she was willing to increase the focus on the policy and management components in post-graduate programs. On the other hand, some other directors are not planning to change the program's structure in the near future because it is already consolidated, or it has just been revised. Others expect that major changes will only be possible if the teaching staff changes.

4.1.2 Educational Skills enabling Sustainable Urban Development

A list of 25 topics identified in the literature as educational skills capable of enabling SUD was organized into three categories: (1) analytical; (2) technical; (3) experiential, communication and negotiation (see Appendix A for a detailed overview of all the topics considered under Educational Skills). For each program, we have assigned 1 point for each explicit reference, in the program's statements, to a given topic on the list. We then used this information to compare the results for the 3 world regions (figure 3) to see whether there are any significant differences in orientation favoring analytical, technical or experiential skills. This regional comparison was then crossed with the next set of data and analysis focusing on sustainability, ethics and interdisciplinarity, in order to answer some of the concerns raised in the literature. Values in figure 3 represent the percentage of topics in each category that are covered by all the programs of a given region.

Figure 3 – Skills enabling SUD



Source: Authors

While programs in the three regions cover a very similar number of analytical skills, programs in China favor above all technical skills (they include over 60 percent of the technical skills in Appendix A), which links with a prevalence of the design dimension, as observed above. Comparatively programs in Europe and RoW cover less technical skills considered capable of enabling SUD. A further discrepancy is revealed in the case of experiential and communication skills, where the European programs include almost 50% of the identified skills, while both China and RoW cover less than one-third of them.

Educational Skills enabling Sustainable Urban Development: survey results

In our survey to program directors, answers confirmed the overall netnography results regarding the role/weight the programs intend to give to the different types of educational skills (capable of enabling sustainable approaches). These were found to be very consistent by half of the respondents – including all the Chinese respondents. Major discrepancies on European programs seem to arise mostly with regard to experiential and communication skills, which were considered underrepresented on our analysis in some cases. One respondent considered our evaluation not consistent (too low) on all topics, stating that the program aims to cover all the educational skills in an integrated manner.

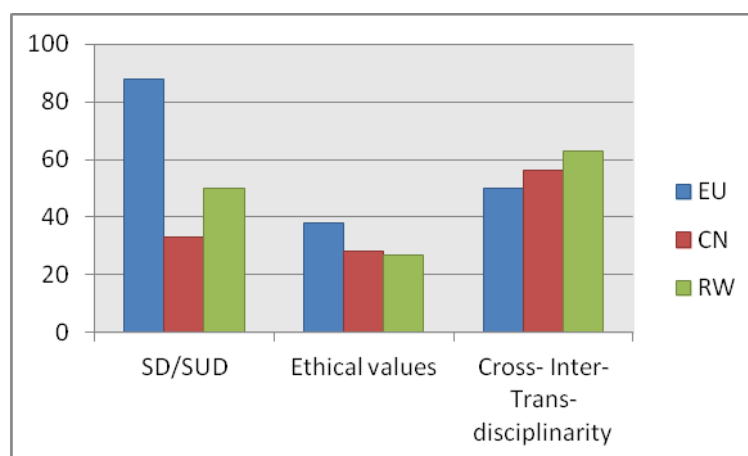
Chinese program directors all concurred that our analysis reflects in general their programs' intentions and focus on skills. However, in a few cases, communication and negotiation skills together with technical skills are said to have more weight on programs than what is shown on our findings. Concurrently, some respondents from the RoW stressed that their programs also give greater importance to experience, communication and negotiation skills (through interdisciplinary groups and fieldtrips for example), as well as technical and analytical skills (through courses on methods and on history/theory) than what is expressed in our results.

4.1.3 Objectives supporting SUD, Ethical values, Cross- Inter- or Trans-disciplinarity

Also based on the programs' descriptions, we have identified for each program the presence/absence of key statements indicative of objectives supporting Sustainable development (SD) and SUD, Ethical values, and Cross- Inter- or Trans-disciplinarity (figure 4). While support of

SD/SUD and inter-trans-disciplinarity⁴ were identified and registered simply by a yes/no [1-0] notation, objectives supporting ethical values were determined by summing up all implicit references to 5 key issues in each program, namely: Social/economic equity; Environmental responsibility; Gender issues; Multiculturalism; Normative nature of planning and sustainability. Values on figure 4 represent the percentage of programs in each region that endorse objectives on the three dimensions.

Figure 4 – Program objectives supporting SD/SUD, Ethical values, Cross- Inter- or Trans-disciplinarity



Source: Authors

Ethical values came out as an important skill, mentioned by several program directors in the survey. While a Chinese respondent recognized that "the neglect of ethical values is an undeniable fact" in her/his program, another one stated that a major goal of his/her program is to nurture future professionals with an ethical commitment towards society. Similarly, in the RoW ethical values in research were said by one respondent to be an issue "we need to discuss and try to emphasize in our programme", while another one stated the intention to further increase ethical components in existing courses.

As for cross- inter- or trans-disciplinarity, about half the programs, or more (50% in EU, 56% in CN and 63% in RoW) stated objectives related to it. supporting. Sustainability and SUD are endorsed by most European programs (88%), by half of the programs in the RoW, and just by one-third of the programs in China. Ethical values are less evident in the programs' descriptions: only in 38% of the European programs, and in 27% and 28% in programs in China and RoW respectively.

Cross-Inter-Trans-disciplinarity: survey results

In the survey to program directors, we have also asked how important was for them, and for the program's objectives, the promotion of inter/transdisciplinary research skills in the study of urban development themes. All respondents considered it very important, except on two programs from the RoW, which considered it somewhat important. Similarly, all respondents except two from the

⁴ While their purpose and reach may differ (Lang et al., 2012), in this study we follow Petts et al. (2008) in adopting the term 'interdisciplinarity' as a concept that occupies the broadest position on the spectrum. In the survey we invited respondents to consider that 'interdisciplinarity, and related ideas of 'cross' and 'trans' disciplinarity, all pertain to the idea of linking disciplines and perspectives for the purpose of researching complex problems and reaching a synthesis of knowledge'.

RoW have declared that their program has made changes to the curriculum in the past 5 years in order to strengthen inter/transdisciplinarity. On the whole, these changes concerned the broadening of the scope of program with the introduction of new courses and/or joint degrees with other faculties. In Europe, changes were said to focus on exploring new teaching methods that foster inter/trans-disciplinarity; networking the program with other programs and make students from different faculties work together; and strengthen linkages between teaching and research. Major obstacles were found to be practical matters, such as matching different credit systems from different schools, and the time and effort needed for coordinating joined teaching and collaboration with external partners.

Chinese programs have also introduced several changes, such as adding new courses that increase the focus on social and environmental values; the improvement of synergies between programmes of different departments; the introduction of community outreach programmes to increase students communication skills and understanding of local communities; and the engagement with international partner universities. In a couple of cases, the introduction of studios and workshops was regarded as an effective teaching method to integrate different disciplinary knowledge and skills, as they expose students to the complexity of urban conditions and the need to develop holistic strategies. Main barriers to change were said to be the lack of resources (recently created programs still have a limited diversity of courses to offer, and there is shortage of teachers with interdisciplinary skills) and the short duration of some programs (12 months) which is not enough to build-up sufficient skills.

In the RoW, besides the addition of new optional courses on urban topics with an interdisciplinary approach, major changes were said to have been the admission of faculty with different disciplinary backgrounds, and program restructuring with the aim to open up more alternative lines of study allowing students greater freedom of choice on electives. This was in some cases done by the introduction or improvement of joint degrees with other faculties and programs (e.g. between law, public policy, public administration, landscape architecture, architecture, real estate, and design studies) to engage with urban topics from different disciplinary perspectives. Major obstacles reported were red tape and lack of time, as well as difficulties in combining different disciplinary methodologies. The only two programs in the RoW which did not make changes in the curricula in the previous 5 years justified it by stating that the programs were considered to enjoy already a significant degree of interdisciplinarity and freedom for students to choose among several alternative lines of study and research.

When questioned if the program is planning to introduce changes in order to strengthen programs' inter/transdisciplinarity dimension in the future, responses were consensual in Europe (yes) and in the RoW (no). Differently, on Chinese programs responses were mixed. European programs' plans to strengthen the inter/transdisciplinarity dimension include the introduction of new interdisciplinary didactic teaching methods that better link the institutions involved in teaching and research, as well as fine-tuning the coordination of different tracks within departments. Anticipated obstacles are, again, the time and effort required for the coordination of joined teaching with external partners.

The reported changes that Chinese programs expect to implement in the near future are the recruitment of teachers with interdisciplinary backgrounds; the improvement of analytical skills; and the addition of new program components that help students understand and address environmental issues. Expected challenges are the budget implications of additions (of courses, of faculty) to the program, as well as the credit system, which limits the number of courses a program can offer. One respondent added that another challenge is that despite having an interdisciplinary background,

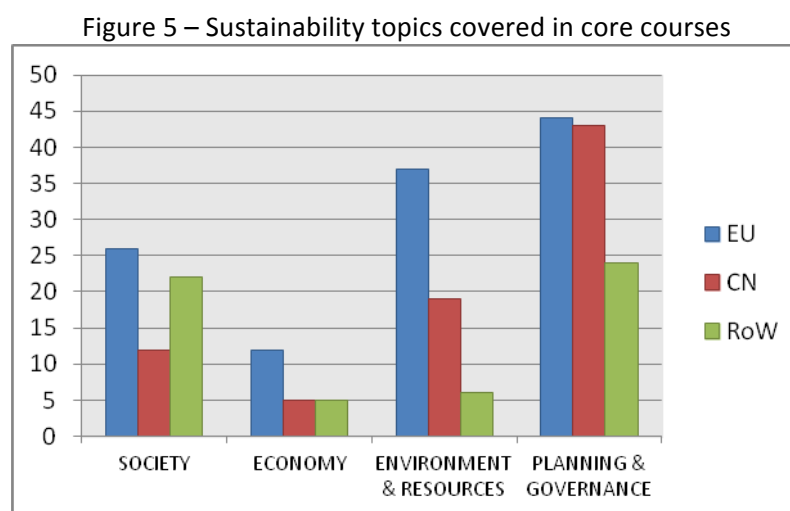
young teachers lack geographical thinking. Chinese programs that expect to introduce no changes in the near future justified the option either because the program is already considered very interdisciplinary, with students from diverse disciplines and professors from diverse backgrounds, or because the program is very recent so it will follow the present strategy, wait for a year or two, and then evaluate the results.

As noted above, all programs in the RoW are not planning any changes in the short run. This is either because the program is considered to be highly or 'enough' interdisciplinary, because major changes need to be discussed and decided by the collective of the teaching staff, which is a slow process, or because the priority is to focus on areas outside the program (e.g. events). In short one can say that interdisciplinarity is almost unanimously considered important, and has driven changes, mostly curricular. These arise often through partnerships with other programs. Main limitations for interdisciplinarity relate to internal formal constraints, such as the limited number of credits and the short duration of programs, but also the time and energy needed to coordinate and integrate different disciplines/programs and the lack of teachers with interdisciplinary background.

4.2 Analyses of data on Courses within Programs

4.2.1 Key sustainability topics covered by courses

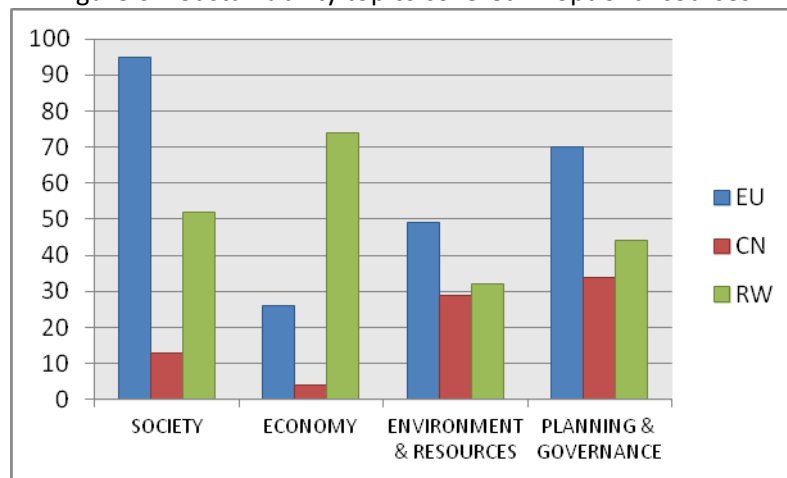
A list of 36 topics identified in the literature as key to sustainability and SUD was organized into four categories: (1) Society; (2) Economy; (3) Environment & Resources; (4) Planning & Governance (see Appendix B for a detailed overview of all the sustainability topics). In order to analyze how well the urban studies programs are integrating the dimensions of sustainability, we have identified (in both core and optional courses) how often each of these sustainability topics was mentioned in the courses' syllabi. In some cases we had to ask the Faculty or Department for additional information. We have assigned 1 point for each time a topic is present (explicitly or by inference) in a course⁵. Figures 5-7 compare the coverage of sustainability topics for the four categories: in core courses (fig. 5), in optional courses (fig. 6), and in all courses (fig. 7). Values on the Y-axis stand for the sum of points (and therefore of courses that mention one of the topics) on each category for all the programs of a given region.



Source: Authors

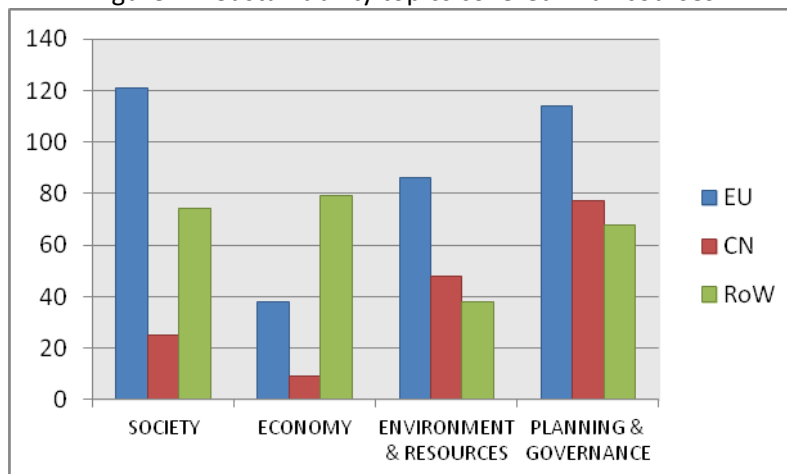
⁵ Within each program, a topic may occur several times in different courses – each occurrence counts as 1 point.

Figure 6 – Sustainability topics covered in optional courses



Source: Authors

Figure 7 – Sustainability topics covered in all courses



Source: Authors

The programs' core curricula in the three regions are all especially strong in the field of Planning & Governance. Topics relating to Environment & Resources are second in importance in European and Chinese programs, followed by topics on the fields of Society and Economy. Sustainability topics on the Economy have a minor presence in the programs' core curricula in the three regions.

On the other hand, the coverage of sustainability topics on optional courses shows a different pattern. Overall, the optional courses in European and Chinese programs put a weight on sustainability topics similar to that of the core curricula. The exception are European programs, which show a much higher prevalence of Societal topics. In programs in the RoW, however, optional courses have a stronger focus on Economy, as well as Environment & Resources topics, when compared to the core curricula.

Sustainability dimensions: survey results

Survey results show that directors of Chinese programs, except for one, considered our findings for the most part either somewhat consistent or not consistent with their own opinion/knowledge of the program. This is partly explained because our results do not reflect the fact that in some programs students can take elective courses offered by other Master programs. For example, it was

reported that one recent master program and has started with a relatively small number of courses. However, students may choose additional electives from two other master programs that focus entirely on "sustainability". In other cases, like stated by the director of another program, the contents of courses focused on planning & governance are also closely related to societal issues.

Respondents on RoW programs, except for one, considered our results either very consistent or somewhat consistent with their own opinion/knowledge. Major divergences seem to be related to the overlapping of themes on different dimensions. Environment and resources, in particular, was the dimension where most program directors disagreed with our findings. While in one case the environmental dimension was said to be covered by real estate courses, which deal with energy and resources, in another it was noted that on the latest adjustments to the program new optional courses are now focusing specifically on environment and resources issues.

The results of our netnography, therefore, had mixed evaluations in what concerns their consistency. The greater discrepancy seem to be related with the role/weight that some programs intend to give to the social dimensions of sustainability, which program directors considered to be under-valued on our analysis. This might be probably due to the variety of teaching formats, especially those with a greater practical component such as studios and final projects, which can give greater relevance to societal dimensions. Moreover, syllabi do not always include a thorough description of all the matters covered in the course. In addition, society issues may be approached on courses primarily dealing with planning and governance.

When asked if they were planning to make any changes in the program in order to strengthen its sustainability dimension, overall, half of the respondents gave a positive answer. However, one European respondent and two RoW respondents admitted not having such plan because the program is already considered strong in sustainability, or because it has already enough courses related to sustainable development.

Most surveyed Chinese programs are planning to introduce changes, so as to strengthen the sustainability and SUD dimensions. Planned changes comprise: increasing interdisciplinary integration, including improved synergies between complementary programs (e.g. between Urban Design, Sustainable Design and Advanced Environmental Planning Technologies); adding more courses related to urban ecology; including more critical studies in urban design; and finding a better integration and balance of social, environmental and economic issues in Design Studios, which were considered the best way to explore and develop an integrated perspective towards better solutions in practice. Major obstacles to such changes are considered to be the time it takes to optimise the linkages and synergies to existing programs, the ability to hire staff with enough competency on sustainability matters, and to integrate and balance theoretical social, environmental and economic issues with planning practice.

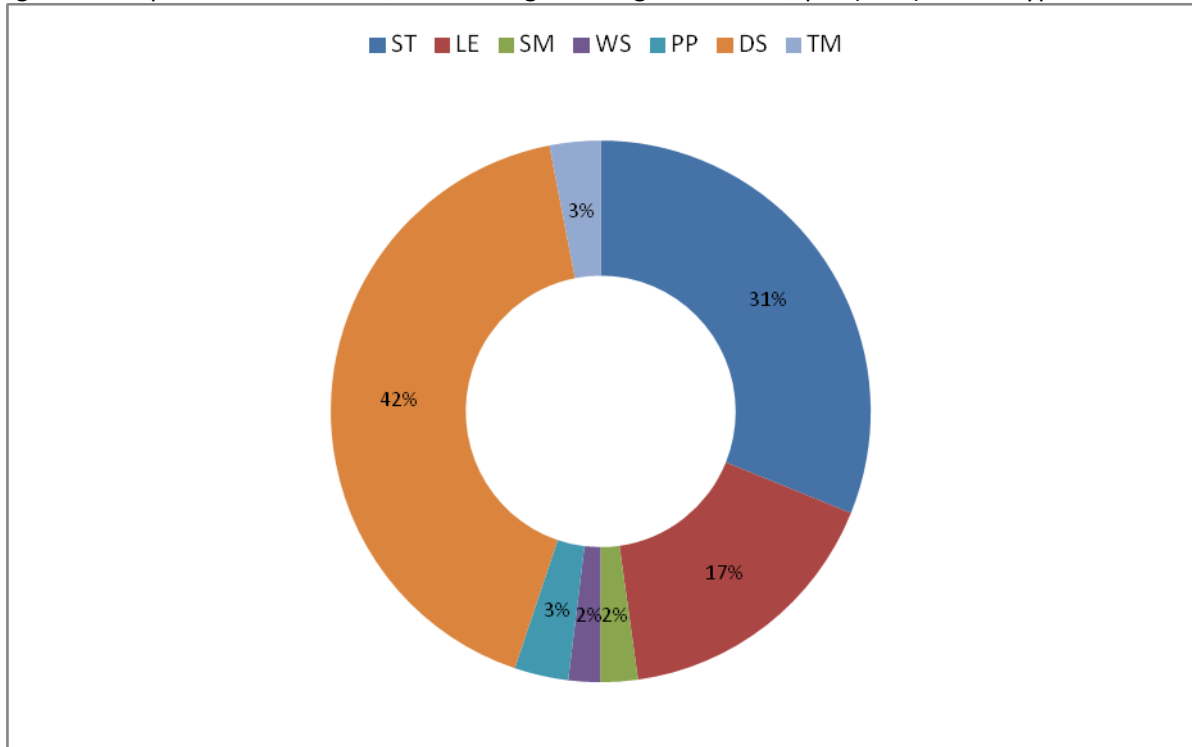
The main changes reportedly planned for programs in the RoW, consist in hiring more staff with the appropriate training to teach SUD; and in one case launching an interdisciplinary centre, linking the faculty of different master programmes around the objectives of SUD. Major obstacles seem to be related primarily with the time such changes take to implement, and secondly with difficulties in adjusting the various dimensions of SUD to the overall structure and objectives of the program.

4.2.2 Dominant typologies of courses

Finally, we have identified 8 types of courses in the curricular structure of urban studies programs. These are: Studio (ST); Lecture (LE); Seminar (SM); Workshop (WS); Project or Plan (PP);

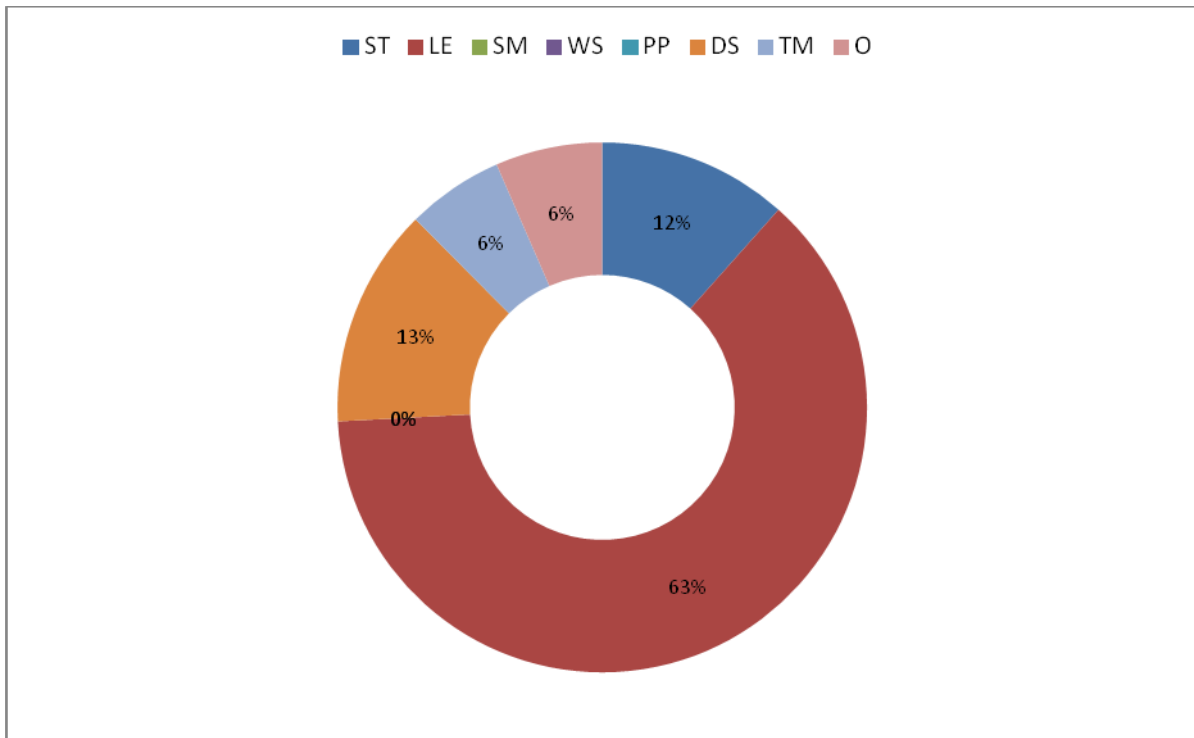
Technical/Methods course (TM); Dissertation (DS); Other (O). Considering the weight of credits per (core) course type on each program, we were able to determine and compare the importance that programs assign to each course type in their core curricula, in the three regions (figures 8, 9 and 10). To estimate this, we have added the total number of credits for each course type and calculated its relative percentage to the total number of credits needed to complete the program. Values in the graphs below represent the weight (or importance), in percentage, of each course type present in all the programs of a particular region (EU, CN, and RoW). Thus, for example, Figure 8 shows that 31% of the European programs are taught in the format of studios (ST) and 17% through lectures (LE).

Figure 8 – Importance of courses, considering the weight of credits, per (core) course type: EUROPE



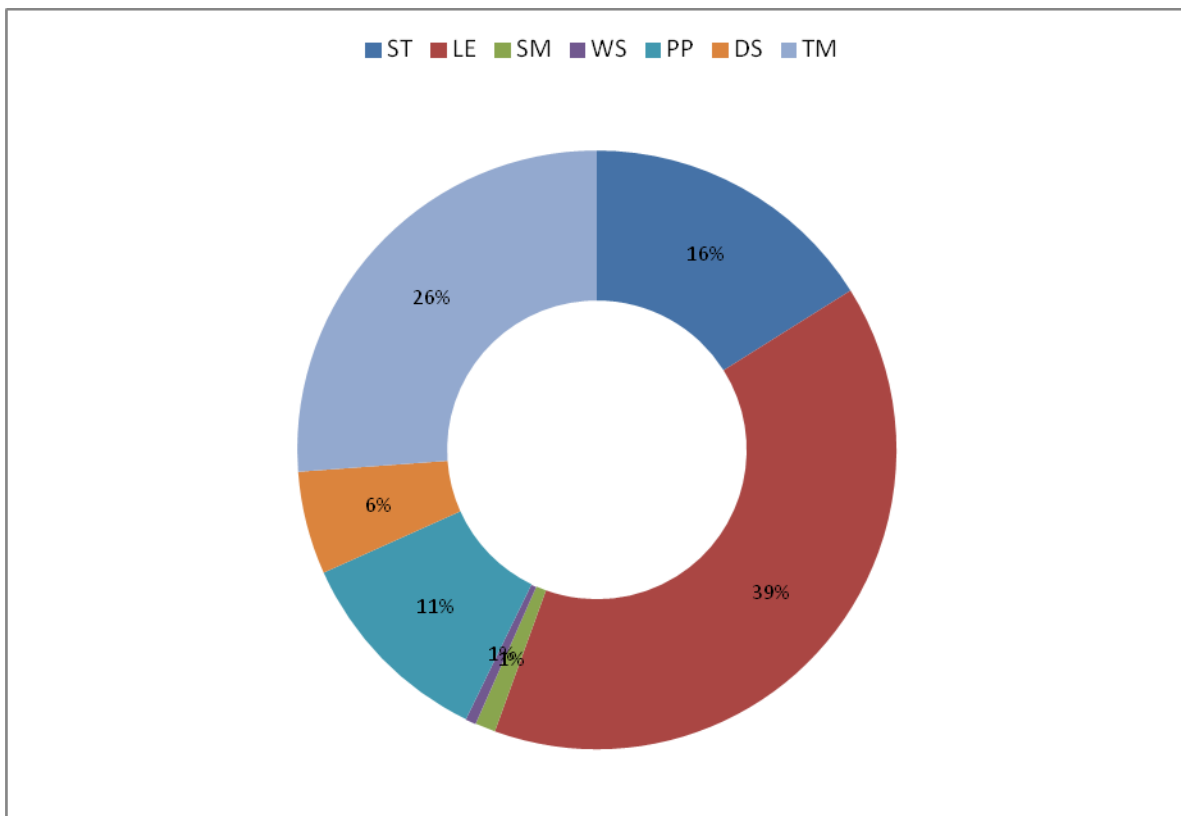
Legend: Studio (ST); Lecture (LE); Seminar (SM); Workshop (WS); Project or Plan (PP); Technical/Methods course (TM); Dissertation (DS); Other (O). Source: Authors.

Figure 9 – Importance of courses, considering the weight of credits, per (core) course type: CHINA



Legend: Studio (ST); Lecture (LE); Seminar (SM); Workshop (WS); Project or Plan (PP); Technical/Methods course (TM); Dissertation (DS); Other (O). Source: Authors.

Figure 10 – Importance of courses, considering the weight of credits, per (core) course type: RoW



Legend: Studio (ST); Lecture (LE); Seminar (SM); Workshop (WS); Project or Plan (PP); Technical/Methods course (TM); Dissertation (DS); Other (O). Source: Authors.

Results of this analysis show wide differences between regions. While in Europe the dissertation is the most important part of the programs, weighting on average 42% of the total credits needed to complete the programs, both in China and the RoW a greater importance is given to lectures, which represent 63% and 39% of the total credits needed to complete the programs, respectively. Comparatively, in Chinese and RoW programs, the dissertation has a weight of just 13% and 6%, respectively, of the total number of credits needed. Technical & Methods courses have a very significant weight in programs in the RoW (26%), while this value for China is only 6% and for Europe just 3%. Projects & Plans are also more important in programs in the RoW (11%) than in Europe (3%) and China where they are not mentioned. Studios have a greater weight in European programs (31%), followed by the RoW (16%) and China (12%). The importance of seminars and workshops is residual in European and RoW programs, and is not mentioned in Chinese programs. Lastly, under category "Others", Chinese programs include activities such as community work and "green campus" actions, which are worth 6% of the total credits needed to complete the programs.

4.2.3 Further survey results

The factors influencing the focus and the structure of Master Programs can be divided into: (A) adaptation to external environment; and (B) adaption to internal requirements. According to the answers of the survey both seem relevant. Results of the survey to program directors show that in the Chinese universities surveyed, the focus and structure of Urban Studies Master Programs over the last 5 years has been mostly influenced by pedagogical priorities. In the European universities surveyed it seems that programs have been influenced both by pedagogical and scientific & curricular priorities, while in the RoW they have been mostly shaped by scientific & curricular concerns. However, the respondents identified several other factors that have been shaping the focus and structure of Master Programs in Urban Studies. Programs in China have been reportedly influenced both by external pressures, such as the realities of the labour market and the inputs of professional associations, and pressures internal to the academic/school system, such as university regulations and the teachers' research fields of interest. Pedagogy is also a very influential factor (in China and Europe alike). In Europe, the restructuring of national study systems, as well as current changes in the field of urbanism were pointed out as important external factors influencing past change in some programs. This is also true for the RoW, where national standards for higher education and accreditation requirements by professional associations, together with important internal factors – such as university regulations, dean's priorities, new faculty hires and staff identification of the key urban and regional priorities – were said to be responsible for programs' reassessments and adjustments over the previous years. Scientific and curricular priorities are very influential here.

Regarding expectations of which will be the main factors influencing the programs' focus and structure in the coming years, it was also possible to identify two kinds of responses: those who emphasize the need to adapt to the external environment; and those who focus on the adaptation to internal requirements of the academy/school system. In Europe, the former refers mainly to professional associations' input and accreditation requirements and the need to prepare students for the future labour market. Moreover, there is a perceived need for an integrated approach to Urban Studies that offers both theory and practice on urban management to respond to future challenges. Concurrently, change derived from internal requirements is expected to come mainly from the perceived need for multidisciplinary in academia, requiring new teaching formats and better integration of all disciplines involved (e.g. architecture, city and regional planning, landscape

architecture & environmental design and sociology) and also opening programs to other tracks in the faculty. In China, the need to adjust Urban Studies programs to the demands of the job market is the most anticipated factor of future change due to pressures external to academia. Other external influences, besides professional associations inputs, included China's development trends, the transition in urban planning in China, and increasing social problems.

There is a variety of anticipated factors of future change in Urban Studies programs in the RoW, such as emerging topics in urban studies (the most mentioned) and shifting key contextual issues, as well as man-environmental conflicts, public policies and, like in the other regions, the need to prepare future professionals to the workplace and provide jobs. Expected changes due to internal requirements of the academy/school are also diverse and include increasing linkages between teaching and research; an improved focus on methodological issues; faculty interests, including the interests of new faculty; staff values and ethics regarding the role of planning and forms of pedagogy; the wider university context and its offerings, and the internationalization of the program. In short, a number of issues from increasing interdisciplinarity to linkage with practice, outreach, pedagogy, students' employability, and adaptation to the urban future have been mentioned as anticipated futures of change.

5. DISCUSSION

This study has:

- (i) **identified the key features** of USE programs aimed at the promotion of SUD (section 2);
- (ii) **developed an analytical framework** for a comparative analysis of programs in urban studies (section 3);
- (iii) **conducted a comparative analysis** of 25 USE programs from five continents (section 4); and (iv) provided new insights into progress towards more sustainable education within urban studies worldwide, as advocated by the UN and UNESCO (see sections 1 and 2).

As observed elsewhere, a balanced mix of the design, policy, and management approaches, or dimensions, in urban studies' programs is critical to effectively incorporate SUD in USE (Silkes 2014; Senbel 2012). In light of this, the most significant results of this study in terms of **program's orientation** show that design is the strongest orientation and policy the weakest overall. While the urban management dimension is quite significant in the three regions, the design and policy/social sciences components vary considerably across regions. The design dimension is comparatively undervalued in European programs and overvalued in Chinese programs. The latter confirms the emphasis on physical design in Chinese planning schools, already noted by UN Habitat (2009). Chinese programs, on the other hand, show little integration of the policy/social sciences dimension. Programs in the RoW appear to be those with a better balance of the three orientations. Based on the survey responses, however, there seems to be a tendency towards a balance of the three orientations. This balance was said to be achieved mainly through the students' projects and theses, an information we did not have access to.

Regarding **educational skills enabling SUD** (see Appendix A) our analysis suggests that overall, the analytical set of skills is the most well represented across regions, with experiential/communication and technical skills far less represented. Compared with programs in the other regions, technical skills are a lot more prevalent in Chinese programs, which seems to support the claim of UN Habitat

(2009) that Asian schools of planning tend to value more technical and analytical skills. On the other hand in Europe, compared with the other regions, programs seem to put a higher emphasis on experiential and communication skills. Survey answers confirm these results in general. Still some Chinese and RoW programs asserted they were stronger on communication and negotiation skills than what is expressed in the netnography results.

A closer look to all the topics considered within each category of skills enabling SUD (as listed in Appendix A), allows a more systematic and detailed analysis. Regarding **analytical skills**, programs in the three regions are strong at *integrating theory and practice*, as well as in teaching *methods* (quantitative, qualitative, spatial analysis). European programs are stronger in *theoretical & critical reflection* and in teaching *sustainable planning* and weaker in *history of planning/urbanism (movements & theories)* and in *visual literacy*, while programs both in China and the rest of the World are stronger in *history of planning/urbanism (movements & theories)*. With regard to **technical skills**, the focus of European programs is on *management & strategic planning/urban futures*, while in China and the rest of the World the focus is on *spatial planning instruments* (e.g. neighborhood-scale projects, master plans and regional plans). Finally, regarding **experiential, communication & negotiation skills**, programs in the three regions are strong on *field work and contact with real life practice*. European programs are also strong on *participatory & deliberative approaches* to planning, and in promoting *team work*. Programs in the three regions are weak in providing *direct international experience*.

We have argued that the promotion of **interdisciplinarity** and the endorsement of **ethical and critical reasoning** are crucial to USE for SUD (Rohweder and Virtanen 2009; Holmberg et al 2008). The netnography suggests that overall, interdisciplinarity is more commonly endorsed across the programs than ethical considerations. The former is explicitly endorsed by a little more than half of the programs statements of purpose, while the latter is clearly under-represented on the programs' objectives in the three regions. The survey, however, has clear results on the relevance of promoting interdisciplinarity in the study of urban development themes. Ethical values were also mentioned as important in the survey, despite being understated in the programs' descriptions. More detailed results relating to ethical values also show that programs in the three regions are stronger in promoting *environmental responsibility* and weak in addressing *multiculturalism* issues. *Social-economic equity* is less prevalent in European and Chinese programs than in the RoW. *Gender issues* are absent or very weak in programs in China and RoW, respectively.

The explicit support of **SUD objectives** is acknowledged by most European programs, in contrast with the Chinese programs, which are those who miss more references to SUD in their statements of purpose. The detailed analysis of 36 **key topics of USE for SUD** (see Appendix B) covered in all programs' core and elective courses' syllabi show that, overall, programs have a core curricula that is particularly strong in addressing planning and governance issues, and weak in economy issues. The programs' core curricula in the RoW is also particularly weak in issues related to environment and resources. Both weaknesses however seem to be compensated in Europeans and RoW programs by a wider offer of optional courses dealing with the economy and the environment. This however, is not the case with the Chinese programs, which have a noticeably weak overall coverage of both society and economy topics.

A closer look at all the topics considered within each category (as listed in Appendix B), allows a more systematic and detailed analysis. Regarding **societal topics**, programs both in Europe and the RoW cover predominantly *social justice/equity* themes, as well as *public participation* in planning processes. In China, preference goes to *social justice/equity* and *demographic trends*. On **economy**,

the best covered topic in the three regions is *production & consumption patterns*. As for **environment and resources**, while the main topic considered both in European and RoW programs is *climate change and disaster risk prevention*, in Chinese programs it is *planning & the natural environment* and *environmental responsibility*. Finally, on **planning and governance**, European programs clearly favor the topic *urban governance & political processes*, while in Chinese programs it is *planning & the built environment* and in the RoW the main topic is *land use & spatial distribution of urban activities*.

Finally, regarding the **dominant course format**, if we add together the weight of all theoretical core courses (i.e., lectures, seminars, technical or methods courses and dissertation) and compare it with the weight of all practical core courses (i.e., studios, workshops and projects/plans), Chinese programs are the most theoretical, with an average of 82 percent of the credits needed to complete the program ascribed to theoretical courses. This value for programs in Europe and the RoW is relatively lower (64 percent and 72 percent, respectively).

6. CONCLUSIONS AND RECOMMENDATIONS

Despite global convergence in USE, and in particular in USE for SUD, with its requirements of interdisciplinarity, ethical values, critical thinking, and so on, there cannot be – and in fact it is not desirable – a one-world approach, or even a regional (European, Chinese, etc.) regulation of the USE academic programs. Their role and objectives are understood differently from country to country, as a function of national university systems, planning institutions, political milieus, legal regulation, recognition of professions, etc. (Kunzmann 1999). Therefore, to move from academic knowledge to planning action in the real world, USE needs to adapt to regional characteristics, local challenges, and national systems and regulations. However, considering the universally recognized need for embedding sustainability and SUD in USE, as discussed in our review of the literature, this comparative study was helpful to identify general elements of good practice as well as major strengths and weaknesses of academic programs in urban studies in the three regions. In light of these, it is possible to advance several recommendations that can potentially improve University level curricula in USE for SUD.

In general, urban studies programs in the three regions could benefit from:

- stress – rather than avoid - the importance of **ethical** dilemmas and provide students with the skills to engage with them;
- improve opportunities for meaningful **interdisciplinary** inquiry and methods in the curricula;
- address **multiculturalism** and **gender** issues as key, rather than optional, urban themes;
- place more emphasis on understanding the relationship between the **economy** and the built and natural environment;
- provide more **direct international experience** to its post-graduate students.

In **Europe**, program directors should ponder the adequacy of the considerable weight put today on the dissertation component of the program. Results suggest that most programs in Europe could benefit from more technical and methods' courses instead, as well as courses in history of planning/urbanism (including movements and theories). Some programs, more focused on urban policy and management, would also profit from a renewed focus on urban design.



Conversely, in **China**, where the design dimension seems to be overvalued, most programs would gain by integrating more the policy/social sciences dimension in support of SUD objectives, as well as strengthen experiential & communication skills in future USE graduates. A curricular structure with more studios and projects/plans and less lectures may be necessary in many programs in order to better educate students on how to translate theoretical knowledge into practical action.

Finally, in most programs from the **rest of the World**, results suggest that the core curricula could be improved by including more topics related to natural resources and the environment. On the other hand, the relatively higher incidence of technical and methods' courses in the core curricula suggests that there is room to reassign some of the importance given to these courses to the dissertation part of the program, which has a relatively low weight on most programs.

Notwithstanding signs of progress in USE for SUD in the three regions, the framing of academic programs in urban studies capable of promoting SUD remains a challenge. This study developed an analytical framework that helped to clarify some of the requirements to overcome such challenge. Results from studies like this one, however, need to be continually checked against fast changing urban realities and typically slow changing national planning systems and institutions. USE programs may have many different national or academic backgrounds, but in order to respond to old and new societal challenges and expectations, as we saw, an innovative agenda in USE towards SUD must include in the curricula such aspects as the integration of physical design, policy and management approaches, the promotion of greater interdisciplinarity, or the need to address social and environmental justice and adopting a global perspective.

This study offers a simple analytical framework that helps to clarify some of the requirements of USE for SUD. Ultimately, the main goal of USE for SUD is to provide future professionals with the conceptual and practical tools to deal with, and come up with innovative answers to, current and future urban predicaments. The comparison between USE programs in Europe, China and the rest of the World developed in this study was especially helpful for the identification of such tools.

References

AESOP (1995). Core requirements for a high quality European Planning Education, Association of European Schools of Planning. Available from: http://www.aesop-planning.eu/en_GB/core-curriculum accessed 10/03/15.

Bandura, A. (1971). Social Learning Theory, General Learning Press. Available from: http://www.jku.at/org/content/e54521/e54528/e54529/e178059/Bandura_SocialLearningTheory_g er.pdf accessed 06/03/15 accessed 06/03/15.

Beard, V. A., Basolo, V. (2011). Commentary: Moving Beyond Crisis, Crossroads, and the Abyss in the Disciplinary Formation of Planning, *Journal of Planning Education and Research*, 29, 233-242.

Beynaghi, A., F. Moztarzadeh, R. Maknoon, T. Waas, M. Mozafari, J. Huges, W. Leal Filho (2014) Towards an orientation of higher education in the post Rio + 20 process: How is the game changing? *Futures* 63 (2014) 49–67.

Blanchard, A., Vanderlinden, J. P. (2010). Dissipating the fuzziness around interdisciplinarity: The case of climate change research. *SAPI EN. S. Surveys and Perspectives Integrating Environment and Society*, 3.1.

Bodenschatz, H. (2011). The Reinvention of Urban Design in 1965 in the USA, in Bauerfeind, B. and Fokdal, J. (Eds.) *Bridging Urbanities. Reflections on Urban Design in Shanghai and Berlin*, Vol. 17, LIT Verlag Münster.

Boulding, Kenneth (1968) *Beyond Economics: Essays on Society, Religion, and Ethics*, Univ. of Michigan Press.

Brenner, N., Marcuse, P., Mayer, M. (2009). Cities for people, not for profit. *City*, 13(2-3), 176-184.

Bursztyn, Marcel and José Drummond (2013) "Sustainability science and the university: pitfalls and bridges to interdisciplinarity", *Environmental Education Research*.

Cai, Yongjie (2011) *Chinese Cities and Urban Design: Tradition, Present, Challenge*. In *Bridging Urbanities. Reflections on Urban Design in Shanghai and Berlin* (Eds, Bauerfeind, B. and Fokdal, J.) HABITAT - INTERNATIONAL: Schriften der Habitat Unit, Fakultät VI Planen Bauen Umwelt der TU Berlin, Berlin, pp. 36-41.

Campbell, H. (2012). Planning to Change the World: Between Knowledge and Action Lies Synthesis, *Journal of Planning Education and Research*, 32(2), 135–146.

Cruickshank, H., Fenner, R. (2012). Exploring key sustainable development themes through learning activities, *International Journal of Sustainability in Higher Education*, 13(3), 249-262.

Daly, Herman (1991) *The Steady-State Economy*, Washington DC, Island Press.

Davidoff, P. (1965). Advocacy and pluralism in planning. *Journal of the American Institute of Planners*, 31(4), 331-338.

Dimitrova, E. (2014). The 'sustainable development' concept in urban planning education: lessons learned on a Bulgarian path, *Journal of Cleaner Production*, 62, 120-127.

Dongjie Niu, Dahe Jiang and Fengting Li (2010) Higher education for sustainable development in China, *International Journal of Sustainability in Higher Education* Vol. 11 No. 2, pp. 153-162

Du, X., Su, L., Liu, J. (2013). Developing sustainability curricula using the PBL method in a Chinese context. *Journal of Cleaner Production*, 61, 80-88.

Dymont, J.E., Hill, A., Emery, S. (2014). Sustainability as a cross-curricular priority in the Australian Curriculum: a Tasmanian investigation. *Environmental Education Research*, (ahead-of-print), 1-22.

Edwards, M. M., Bates, L. K. (2011). Planning's Core Curriculum: Knowledge, Practice, and Implementation, *Journal of Planning Education and Research*, June 2011; vol. 31, 2: pp. 172-183.

Feng, L. (2012). Teacher and student responses to interdisciplinary aspects of sustainability education: what do we really know?. *Environmental Education Research*, 18(1), 31-43.

Forester, J. (1999). *The deliberative practitioner: Encouraging participatory planning processes*. MIT Press.

Frank, N. (2002). Rethinking Planning Theory for a Master's-Level Curriculum, *Journal of Planning Education and Research*, 21, 320-330.

Friedmann, J. (2008). The Uses of Planning Theory: A Bibliographic Essay, *Journal of Planning Education and Research*, 28, 247-257.

Geppert, A., Verhage, R. (Ed.) (2008). Towards a European recognition for the Planning profession. Proceedings of the second meeting of the Association of European Schools of Planning (AESOP) Heads of Schools held at the Arenberg Castle, Leuven, Belgium on 14 April 2007.

Gunder, Michael (2011) Commentary: Is Urban Design Still Urban Planning? An Exploration and Response, *Journal of Planning Education and Research*, 31(2) 184-195.

Healey, P, 1997. *Collaborative planning. Shaping places in fragmented societies*. London: McMillan.

Hegarty, K, Thomas, I., Kriewaldt C., Holdsworth, S., Bekessy, S. (2011) Insights into the value of a 'stand-alone' course for sustainability education, *Environmental Education Research*, Vol. 17, No. 4, 451-469.

Holmberg, J., & Samuelsson, B. E. (2006). Executive summary. In J. Holmberg & B. E. Samuelsson (Eds.), *Drivers and barriers for implementing sustainable development in higher education* (pp. 7-11). *Education for Sustainable Development in Action, Technical Paper 3, UNESCO*.

Holmberg, J., M. Svanström, D.-J. Peet, K. Mulder, D. Ferrer-Balas & J. Segalàs (2008). Embedding sustainability in higher education through interaction with lecturers: Case studies from three European technical universities, *European Journal of Engineering Education*, 33(3), 271-282.

Huabin XIONG, Denggao FU, Changqun DUAN, Chang'E. LIU, Xueqing YANG, Renqing WANG (2013) Current status of green curriculum in higher education of Mainland China, *Journal of Cleaner Production*, 61: 100-105.

Hurlimann, A. C. (2006) Responding to environmental challenges: an initial assessment of higher education curricula needs by Australian planning professionals, *Environmental Education Research*, Vol. 15, No. 6, December 2009, 643–659.

Jabareen, Y. (2012) Towards a Sustainability Education Framework: Challenges, Concepts and Strategies—The Contribution from Urban Planning Perspectives, *Sustainability* No.4, 2247-2269.

Junyent, M., de Ciurana, A. M. G. (2008). Education for sustainability in university studies: a model for reorienting the curriculum, *British Educational Research Journal*, 34(6), 763–782.

Krieger, A. (2009). Where and How Does Urban Design Happen?, in Krieger, A. & Saunders, W. S. (Eds.) *Urban Design*, University of Minnesota Press.

Kunzmann, K. (1999). Planning education in a globalized world, *European Planning Studies*, 7(5), 549-555.

Law, Wing-Wah (2014) Understanding China's curriculum reform for the 21st century, *Journal of Curriculum Studies*, Volume 46, Issue 3, pp. 332-360.

Leopold, Aldo (1949) *A Sand County Almanac*, New York, Oxford University Press.

Lozano, R. (2010). Diffusion of sustainable development in universities' curricula: an empirical example from Cardiff University, *Journal of Cleaner Production*, 18, 637–644.

Lozano, R., Lozano, F. J., Mulder, K., Huisingh, D., Waas, T. (2013) Editorial: Advancing Higher Education for Sustainable Development: international insights and critical reflections, *Journal of Cleaner Production*, 48, pp. 3-9.

Luederitz, C., Brink, E., Gralla, F., Hermelingmeier, V., Meyer, M., Niven, L., Panzer, L., Partelow, S., Rau, A.-L. and Sasaki, R. (2015). A review of urban ecosystem services: six key challenges for future research, *Ecosystem Services*, 14, 98-112.

McHarg, I. (1969) *Design with Nature*, New York, the Natural History Press.

Martin, E., Beatley, T. (1993). Our Relationship with the Earth: Environmental Ethics in Planning Education, *Journal of Planning Education and Research*, 12, 117-126.

Meadows et al. (1972) *Limits to Growth*, New York, Universe Books.

Pezzoli, Keith and Deborah Howe (2001) Planning Pedagogy and Globalization: A Content Analysis of Syllabi, *Journal of Planning Education and Research* 20:365-375.

- Rio+20 Higher Education Sustainability Initiative (2012). UN Conference on Sustainable Development, Available from: <http://www.uncsd2012.org/index.php?page=view&type=1006&menu=153&nr=34> accessed 05/03/15.
- Robinson, J. (2011). Cities in a world of cities: the comparative gesture. *International Journal of Urban and Regional Research*, 35(1), 1-23.
- Rohweder, L., Virtanen A. (2009). Developing the model on the Learning for Sustainable Development in Higher Education, *Journal of Teacher Education for Sustainability*, 11(1), 31-42.
- Ryan, A., Tilbury, D., Corcoran, P. B., Abe, O., Nomura, K. (2010). Sustainability in higher education in the Asia-Pacific: developments, challenges, and prospects, *International Journal of Sustainability in Higher Education*, 11(2), 106-119.
- Sen, Amartya (1999) *Development as Freedom*, New York, Knopf.
- Senbel, M. (2012). Experiential Learning and the co-creation of Design Artifacts: A Hybrid Urban Design Studio for Planners, *Journal of Planning Education and Research* 32(4) 449–464.
- Schön, D. (1983). *The Reflective Practitioner, How Professionals Think in Action*, Basic Books, Inc.
- Silkes, S. (2014). *Upending Urbanism: How New Postgraduate Programmes are Revolutionizing the Way We Create Cities*, Available from: <http://thisbigcity.net/upending-urbanism-how-new-postgraduate-programmes-are-revolutionizing-the-way-we-create-cities/> accessed 05/03/15.
- Shaoming Lu, Hui-shu Zhang (2014) A comparative study of education for sustainable development in one British university and one Chinese university, *International Journal of Sustainability in Higher Education*, Vol. 15 No. 1, pp. 48-62.
- Tove Holm, Kaisu Sammalisto, Timo Vuorisalo (2014) Education for sustainable development and quality assurance in universities in China and the Nordic countries: a comparative study, *Journal of Cleaner Production* in press, 1-9.
- Trencher, G., Bai, X., Evans, J., McCormick, K., Yarime, M. (2014). University partnerships for co-designing and co-producing urban sustainability, *Global Environmental Change*, 28, 153–165.
- UNESCO (2014). *Shaping the Future We Want: UN Decade of Education for Sustainable Development (2005-2014)*, UN Educational, Scientific and Cultural Organization (UNESCO), Available from: <http://reliefweb.int/sites/reliefweb.int/files/resources/Shaping%20the%20Future%20We%20Want.pdf> accessed 05/03/15.
- UNESCO-Education Sector (2012) *Education for Sustainable Development in Action, Learning & Training Tools N°4*, p.5.
- UN Habitat (2007) *Inclusive and Sustainable Urban Planning: A Guide for Municipalities, Vol. 1: An Introduction to Urban Strategic Planning*, December 2007.

UN Habitat (2009) *Planning Sustainable Cities: Policy Directions*, Global Report on Human Settlements 2009, Abridged ed. Earthscan. Available from: <http://www.unhabitat.org/grhs/2009> accessed 05/03/15.

UN Habitat (2012). UN System Task Team on the Post-2015 UN Development Agenda. *Sustainable Urbanization, Thematic Think Piece*, May 2012, Available from: http://www.un.org/en/development/desa/policy/untaskteam_undf/thinkpieces/18_urbanization.pdf accessed 05/03/15.

UN Habitat (2014). *Towards the development of International Guidelines on Urban and Territorial Planning*, Available from: <http://unhabitat.org/wp-content/uploads/2014/11/IG-UTP-Flyer-English.pdf>, accessed 05/03/15.

United Nations (1987) *Our Common Future: Report of the World Commission on Environment and Development*, New York

Vargas, C. M. (2000) Sustainable development education: Averting or mitigating cultural collision, *International Journal of Educational Development* 20 (2000) 377–396

Vojnovic, I. (2014). Urban sustainability: Research, politics, policy and practice, *Cities*, 41, S30–S44.

Wals, E. J., Corcoran, P. B. (2006). Sustainability as an outcome of transformative learning. In J. Holmberg & B. E. Samuelsson (Eds.), *Drivers and barriers for implementing sustainable development in higher education* (pp. 103-110). *Education for Sustainable Development in Action*, Technical Paper 3, UNESCO.

Watson, V. (2009). Seeing from the South: Refocusing Urban Planning on the Globe's Central Urban Issues, *Urban Studies*, 46(11) 2259–2275.

Wheeler, S., Beatley, T. (Eds.) (2009). *The Sustainable Urban Development Reader*, second edition, New York, Routledge.

Yuan, X., Zuo, J. (2013). A critical assessment of the Higher Education For Sustainable Development from students' perspectives – a Chinese study, *Journal of Cleaner Production* 48: 108-115.

Yuan, X., Zuo, J., Huisingh, D. (2013). Green Universities in China – what matters? *Journal of Cleaner Production*, 61: 36-45.

APPENDIX A - EDUCATIONAL SKILLS ENABLING SUSTAINABLE URBAN DEVELOPMENT

ANALYTICAL

- Cross- inter- trans-disciplinarity
- Systemic thinking (holistic & integrative)
- Theoretical & critical reflection
- Integration of theory and practice
- SUD & sustainable planning
- Rapid urbanisation & urban informality (incl. global South)
- Global/Regional/local interdependencies
- History of planning/urbanism (movements & theories)
- Methods (quantitative, qualitative, spatial analysis)
- Visual literacy

TECHNICAL (specifically aimed at enabling SUD)

- Spatial planning instruments (plans & projects)
- Design-applied technologies (e.g. GIS)
- Engineering and construction
- Management & strategic planning/urban futures

EXPERIENTIAL, COMMUNICATION & NEGOTIATION

- Field work/Contact with real life practice
- Cross-sector collaboration
- Participatory/deliberative approaches
- Team work
- Direct international experience
- Community work

ETHICAL VALUES

- Social/economic equity
- Environmental responsibility
- Gender issues
- Multiculturalism
- Normative nature of planning & sustainability

APPENDIX B - DIMENSIONS AND TOPICS OF HIGHER EDUCATION FOR SUSTAINABLE URBAN DEVELOPMENT

| SOCIETY |
|--|
| • Social justice/equity/inequality/exclusion |
| • Multiculturalism, diversity & social cohesion |
| • Health/wellbeing |
| • Demographic trends |
| • Public participation & stakeholders' engagement in planning processes |
| • Gender & identity issues |
| • Informal settlements |
| • Poverty |
| • Security (re. urban violence & conflict) |
| • Right to the city (including public space issues) |
| ECONOMY |
| • Green economy |
| • Circular economy |
| • Informal economies |
| • Finances & SD |
| • Production & consumption patterns |
| • Employment/unemployment |
| ENVIRONMENT & RESOURCES |
| • Planning & the natural environment |
| • Environmental responsibility |
| • Urban footprint & low-carbon cities |
| • Climate change & disaster risk prevention |
| • Urban metabolism |
| • Energy & urban SD (e.g. energy transition, 'clean' energy systems) |
| • Water & urban SD (e.g. water recycling & reuse) |
| • Food & urban SD (e.g. urban farming) |
| • Waste management & urban SD (e.g. waste-to-energy systems) |
| • Nature, ecology, biodiversity |
| • Resources use/conservation/depletion |
| PLANNING & GOVERNANCE |
| • Post-disaster management |
| • Urban-rural relationships |
| • Urban governance & political processes |
| • Planning & the built environment |
| • Urban form & SD (e.g. compact cities, polycentric regions, new urbanism) |
| • Transportation, mobility & urban SD (e.g. TOD) |
| • Land use & spatial distribution of urban activities |
| • Green buildings & sustainable construction |
| • Infrastructure, green infrastructure & ICT |

APPENDIX C – ONLINE SURVEY TO PROGRAM DIRECTORS

Survey on 25 Urban Studies Programs

Page 1 of 5

ID: University / School / Master Program

THE RESEARCH QUESTION

This survey is part of a study on urbanisation trends in Europe and China (URBACHINA, see: <http://www.urbachina.eu/index.php/en/>). The overall aim is to carry out a comparative review of a sample of post-graduate level curricula in urban studies in Europe (EU), China (CN) and the Rest of the World (RoW) in order to answer the following question:

How are sustainable challenges to urban development being acknowledged and addressed in post-graduate urban studies programs across the world?

By 'urban studies' we mean the various disciplines associated with the study of, and planning for, urban areas and their regions. The question is framed in the context of the United Nations Decade of Education for Sustainable Development, launched in 2005 with the explicit goal of 'improving and reorienting education systems towards sustainable development' (UNESCO 2014).

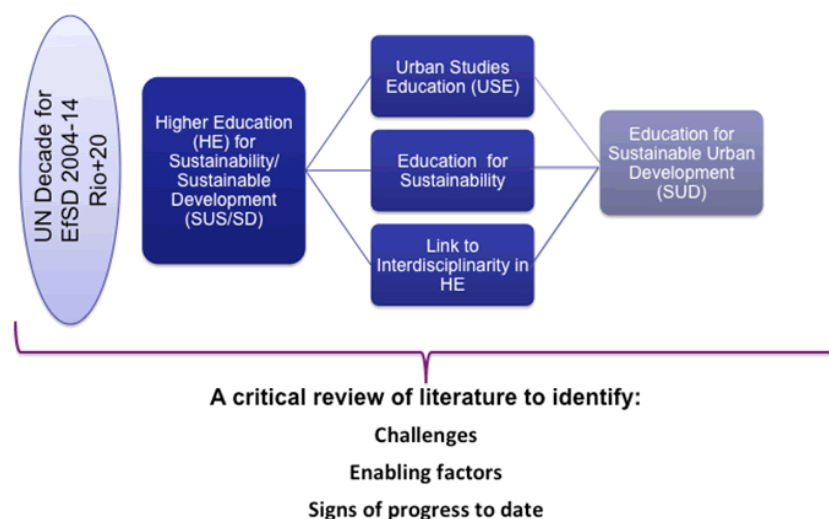
THE SAMPLE OF PROGRAMMES

To answer the question, we have examined 25 post-graduate programs in urban studies (8 in EU; 9 in CN; 8 in RoW), including yours – considered among the best and innovative in their country and world region. Their selection was based on a survey involving members of the URBACHINA consortium and Scientific Committee (representing Europe and China), followed by snowball sampling involving scholars worldwide. The results of the survey were placed in context, using 3 World Universities Rankings:

- QS World University Rankings WORLD 2014
- Times Higher Education World University Rankings 2014-2015
- QS World University Rankings BRICS 2014.

THE STRUCTURE OF THE INQUIRY

This inquiry is shaped on the basis of a comprehensive review of the academic literature on education in urban studies and education in sustainable development (see Figure below), which identified the major challenges, enabling factors and signs of progress to date in higher education for Sustainable Urban Development (SUD).



From the review of literature we defined the **five** dimensions of the inquiry intended to answer our Question (*How are sustainable challenges to urban development being acknowledged and addressed in post-graduate urban studies programs across the world?*):

1. Higher Education Program's overall orientation
2. Objectives and subject matters supporting: Sustainable Urban Development (SUD); an ethical perspective; and the need for interdisciplinarity
3. **SUD topics** covered by Core & Elective Courses (details listed in the survey's Q.2)
4. **Educational skills** that will enable future graduates to promote SUD (details listed in the survey's Q.3)
5. Dominant dimensions of urban studies: *design, policy, and management*

DATA COLLECTED THROUGH NETNOGRAPHY (WEB DATA COLLECTION)

We explored these five dimensions for each of the 25 Programs, which entailed a content analysis of two types of data accessible from the programs' websites: (1) the general overview of the programs as expressed in their opening statements and descriptions; and (2) the more detailed information available from the breakdown of each program into individual courses and the content analysis of their syllabi (in some cases we had to ask the Faculty or Department for additional information).

THIS SURVEY FOCUSES ON ITEMS 3 (SUD TOPICS) and 4 (SKILLS)

In order to analyze how well these urban studies programs are integrating the dimensions of sustainability, we have identified how often the **sustainability topics** (as listed in Q.2) were mentioned in the courses' syllabi. We also identified which **educational skills enabling SUD**(as listed in Q.3) were emphasized in the programs' descriptions. Using simple descriptive statistics we were then able to assess overall medians and regional medians for these two dimensions, against which to rank individual programs.

With this brief survey we are interested in your views on the **priorities and focus of your program** , as well as on **our description of your program** – are these consistent with the role/weight the program intends to give to specific sustainability themes and educational skills?

Please take about 20 minutes to answer to the 8 questions below.
We will send you the final report, including the results and comparative analysis of all 25 Programmes by June 2015.
Thank you for your collaboration!

Next

Please tell us whether you are [allows multiple ticks]:

- The Master's Programme Director/Manager/Head
- Member of the Programme's Scientific Board (or similar)
- One of the scholars teaching on the Programme
- Other, please specify:

Q.1 MAIN INFLUENCES IN THE FOCUS AND STRUCTURE OF YOUR PROGRAMME:

Q.1.1 During the last five years, which of the following factors has most influenced the focus and the structure of your Master Programme – please rank them:

| | Very influential | Somewhat influential | Not influential |
|--|-----------------------|-----------------------|-----------------------|
| Scientific & Curricular priorities | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pedagogical priorities | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Other (neither scientific nor pedagogical) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q.1.1 Other: Please specify: (e.g. university regulations, the cost of tuition, professional associations inputs, accreditation requirements, labour market, etc.):

Q.1.2 In the coming years, which do you expect to be the main factors influencing the Programme's focus and structure?

Please name up to three:

Back

Next

Q.2 THE DIMENSIONS OF SUSTAINABILITY IN YOUR PROGRAMME

In the URBACHINA study we were interested in assessing how your program integrates the dimensions of sustainability in order to foster an education towards sustainable urban development (SUD). By SUD, we mean the range of issues including environmental justice, economic improvement and social equity - as reflected on urban systems (i.e., buildings, towns, cities and their infrastructures). Key topics that are relevant for SUD were compiled from an extensive review of the literature on the subject and are listed here.

SOCIETY

ECONOMY

ENVIRONMENT & RESOURCES

PLANNING & GOVERNANCE

We have analysed the core and optional courses offered by your program in order to identify how often sustainability topics were being approached (grouped into the categories of society, economy, environment & resources, and planning & governance).

We reached the following results:

| EXAMPLE | Your program | Overall sample MEDIAN (EU + CN + RoW) | Regional MEDIAN RoW |
|-------------------------|--------------|--|------------------------|
| Society | 3 | 6 | 6 |
| Economy | 1 | 1 | 1 |
| Environment & resources | 1 | 4 | 2 |
| Planning & governance | 4 | 9 | 6 |

* EU = Europe; CN = China; RoW = Rest of the World

Q.2.1 Are these results consistent with the role/weight the program intends to give to these four sustainability dimensions?

- Very consistent
 Somewhat consistent
 Not consistent

Q.2.1 Please explain why:

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Q.2.2 The United Nations Decade of Education for Sustainable Development, launched in 2005, has initiated an important movement towards embedding the notions of sustainability into education systems around the world.

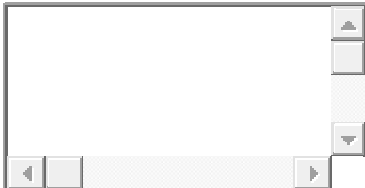
Are you planning to make any changes in the program in order to strengthen its sustainability dimension?

Yes No

Q.2.2 If NO – Please explain why



Q.2.2 If YES – what obstacles do you expect to face?



Back

Next

Q.3 SKILLS ENABLING SUSTAINABILITY:

In this study we were also interested in assessing which educational skills capable of enabling sustainable approaches were emphasized in your program.

ANALYTICAL

TECHNICAL (specifically aimed at enabling SUD)

EXPERIENTIAL, COMMUNICATION & NEGOTIATION

ETHICAL VALUES

According to our analysis your program emphasises the following educational skills:

Figures in this table represent the sum of the number of references to a skill, as emphasized in the program's description.

| EXAMPLE | Your program | Overall sample MEDIAN (EU + CN + RoW) | Regional MEDIAN RoW |
|------------------------------|--------------|---------------------------------------|---------------------|
| Analytical | 7 | 6 | 6 |
| Technical | 1 | 1 | 1 |
| Experiential & communication | 3 | 2 | 2 |
| Ethical values | 3 | 1 | 2 |

* EU = Europe; CN = China; RoW = Rest of the World

Q.3.1 Are these results consistent with the role/weight the program intends to give to the different types of educational skills?

- Very consistent
 Somewhat consistent
 Not consistent

Please explain why:

Text input area for explanation.

Back **Next**

Q.4 INTERDISCIPLINARITY AND URBAN STUDIES

Our comprehensive review of current literature on education suggests that the 'reorientation in education' advocated by the UN Decade of Education for Sustainable Development entails, crucially, a shift towards a more interdisciplinary and transdisciplinary production of knowledge. Interdisciplinarity, and related ideas of 'cross' and 'trans' disciplinarity, all pertain to the idea of linking disciplines and perspectives for the purpose of researching complex problems and reaching a synthesis of knowledge.

Q.4.1 How important, in your view, is the promotion of interdisciplinary/transdisciplinary research skills in the study of urban development themes?

Very important Somewhat important Not important

Q.4.2 Have you made changes to your Programme's curriculum in the past 5 years, in order to strengthen interdisciplinarity?

Yes No

Q.4.2 If NO, please explain why:



Q.4.2 If YES, please specify which changes:



Q.4.2 If YES, what obstacles do you expect to encounter in the implementation of a more interdisciplinary/transdisciplinary programme?



Q.4.3 Are you planning to make any changes in the program in order to strengthen its interdisciplinarity/transdisciplinarity dimension?

Yes No

Q.4.3 If NO, please explain why:



Q.4.3 If YES, please specify which changes:



Q.4.3 If YES, what obstacles do you expect to encounter in the implementation of a more interdisciplinary/transdisciplinary programme?



Q.4.4 Regarding the program's current curricula, what would you say is approximately the weight of each of the following orientations (adding up to a total of 100% for the three categories):

Design-oriented (focus on planning instruments):
The value must be between 0 and 100, inclusive.

Policy-oriented (focus on social sciences' concerns and challenges)
The value must be between 0 and 100, inclusive.

Management-oriented: (focus on urban dynamics and change – e.g. strategic planning and futures studies)
The value must be between 0 and 100, inclusive.

Are you planning to make changes to this structure?
Please explain why:



Back

Done

