



Dharavi slum, Mumbai India. Source: Shutterstock

Busting the bands: Mega cities

An update on teaching
Urban Places – Mega cities

**Matt Carroll, Head of Geography
Cranbrook School**

Deepening students understanding of the complexity, despair and hope of living in a mega city in the developing world (MCDW).

According to the United Nations a mega city (MC) is a large urban agglomeration of 10 million people or more. MC's are dynamic areas with vulnerable urban peripheries, a clear 'youth bulge' (Muggah 2017) and with subsequent social polarisation. As the world continues to rapidly urbanise and surpass 7.7 billion (LSE), a geographical exploration into the feasible solutions from a range of governments, NGO's and community self-help initiatives to the challenges of living in MC's is imperative in achieving the United Nations SDG's.

The topic of MC's is always of high interest for both our Geography students and for teachers. It's what many of us use to generate interest in our senior course when subject selection rolls around. Furthermore, it is often a very polarising topic for our students, as many come from environments where the thought of living in a city with more than 10 million people is incomprehensible. As we know, there are a plethora of amazing resources and go to case studies that never fail, however, many students struggle to get past the basic description of the nature, character, spatial distribution, challenges and responses in their written work. Students need to build their capacity in 'connecting the dots' across the 3 core syllabus dot points in order to demonstrate deep knowledge and analysis, in preparation for questions which require an 'explanation', 'account for', 'analysis' or 'evaluation'.



Makoko floating slum – Lagos, Nigeria. Source: Shutterstock

So, what does our syllabus say?

Mega cities

- the nature, character and spatial distribution of mega cities in the developing world (DP1)
- the challenges of living in mega cities such as housing, traffic infrastructure, water and power supplies, sanitation services, employment, and other social and health issues (DP2)
- the responses to these challenges such as self-help projects, community self-government, cooperation from NGOs, urban protest and the operations of informal economies (DP3)

Some important points within our current syllabus are the use of the phrases 'in the developing world' (DP1) and 'such as' (DP2). This is important to consider when students and teachers are honing in on their use of appropriate case studies/illustrative examples, despite the rapid emergence of MC's in more unfamiliar places. Students must ensure that chosen examples are solidified (by the UN, or another reliable source) in their criteria of meeting 'developing world' status, using case studies such as, but not limited to:

- Lagos, Nigeria
- Mexico City, Mexico
- New Delhi, India
- Rio de Janeiro, Brazil
- Mumbai, India
- Sao Paulo, Brazil
- Jakarta, Indonesia
- Dhaka, Bangladesh

Acronyms are used extensively throughout the HSC Geography course, ranging from BEESPOT all the way to BELL and from USUCCEED to HUMIN. Some tried and tested options for MC's that assist students in finding those 'go to talking points' when tackling exam style questions, include:

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DP1: TRIP & SIP for nature and character

TRIP (nature of MC's and the reasons for their existence/formation – Transformation of rural economies, Rapid/turbo urbanisation, Industrialisation leading to Population growth), SIP (character of MC's based on their Social polarisation/equity (evidence of a vast divide in wealth, gated communities and subsequent crime, violence and corruption), Informal economies (centres of manufacturing) and Population compositions).

Explanation of TRIP:

- The transformation of rural areas has occurred due to the mechanisation and technological innovation of modern farming methods that increase productivity and decrease the availability of work opportunities in rural areas, forcing farmers to leave rural areas and look for employment in cities.
- Rapid/ turbo urbanisation to cities (caused by push/pull factors).

PUSH FACTORS – famine, drought, natural disasters, poor living conditions (health, education, housing), agricultural reform, unemployment, civil war. e.g. flooding in Bangladesh has resulted in rapid rural urban migration to Dhaka at the rate of 1000 people a day.

PULL FACTORS – employment, high incomes, better healthcare and education, urban facilities, protection from conflict.

- Industrialisation – TNC's locate in a large city for cheaper labour and manufacturing costs and this attracts more workers, a result of globalisation, is redefining the employment structure in mega-cities. The people employed in manufacturing have increased, especially in the cities host to labour intensive manufacturing processes of TNC's, such as in Dhaka, Bangladesh where 60% of people are employed in garment, 'fast fashion' sweat shops. Most of the growth in employment has occurred in the new industrial estates built on the outskirts of MC's.
- Population growth – As a result of these factors and naturally high birth/fertility rates, MC's populations grow exponentially (in many cases), resulting in SIP.

Explanation of SIP

There are a multitude of characteristics associated with MC's which can be overwhelming for our students to learn. The core characteristics associated with MCDW and which best account for the challenges associated within these cities, include:

- Social polarisation: Mega-cities have large social divisions, with the middle-class enjoying a 'developed world' lifestyle, resulting in SOCIAL POLARISATION. A quarter of the population of developing countries

are living in situations of absolute poverty on less than \$1 a day (World Bank). The rich are retreating to well resourced, gated communities, using privatisation to develop their own basic services, while the poor are restricted to makeshift housing on the outskirts of cities, where governments cannot provide basic services. This is evident in the UN's most recent listing of Lima, Peru, suffering a housing crisis and urban divide in its population, evident in the 'wall of shame'. MC's which suffer from social polarisation tend to have high rates of crime (in Rio de Janeiro, the leading cause of death for males aged 15–44 is homicide and in Mexico City there are over 400 kidnappings per day). This stems from colonialism, slavery (favelas in Rio de Janeiro), lack of government revenue and complex urban morphologies which result in slums/favelas becoming havens for organised crime (e.g. the 'Red Command' in Rio).

- Informal economies: All mega-cities have large informal economies (black market), such as vending and hawking of services. Informal sectors serve the needs of the urban poor and operate outside the control of authorities. In Lagos, the informal sector accounts for 69% of total employment. The informal sector is caused by a lack of jobs in the formal sector, forcing people in slums to create their own employment in locally owned workshops as barbers, beggars, street vendors etc. Mega-cities have attracted labour intensive 'footloose industries' from TNC's.
- Population composition: MC's have unique population compositions, evident in growth rates, structure and densities. Lagos has a population density of 18,000 people/km² and Manila now exceeds some 43,500/km² leading to a severe strain on the provision of social and health services.



Rocinha favela, Rio de Janeiro. Source:https://upload.wikimedia.org/wikipedia/commons/6/6e/Rocinha_rio_de_janeiro_panorama_2010.jpg

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DP2: WATCHES for challenges

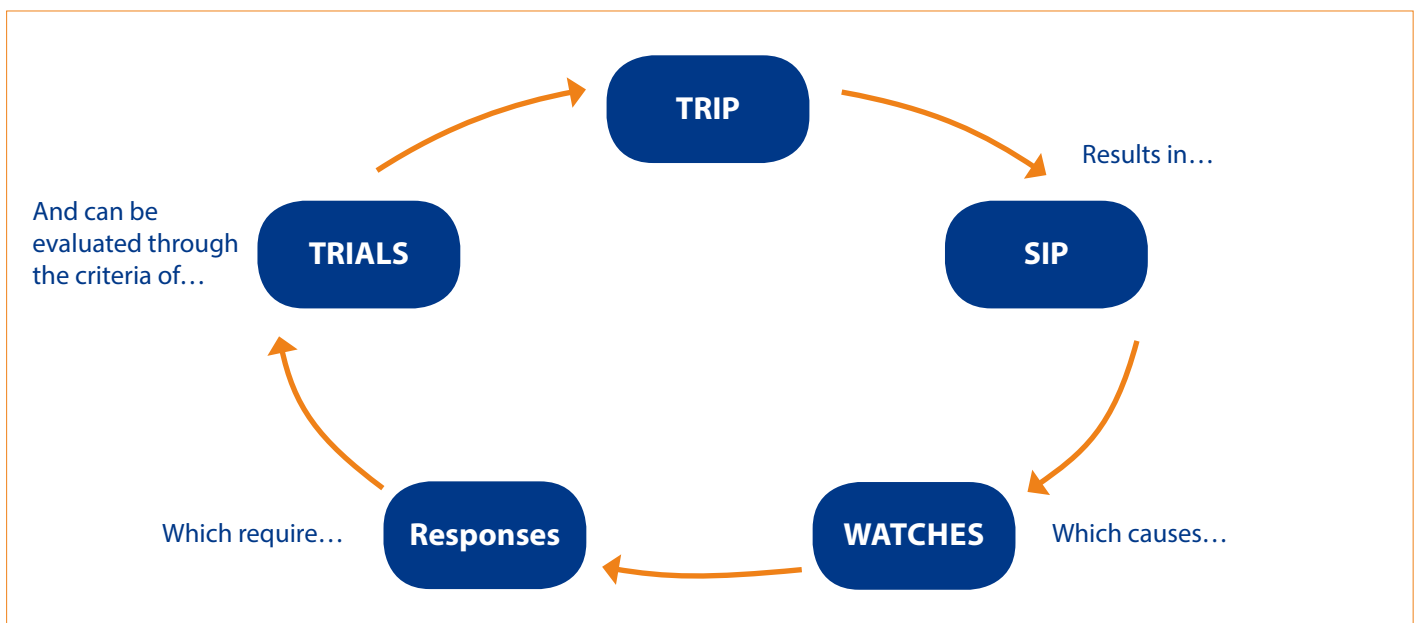
WATCHES (water and power supplies, air pollution, traffic congestion/infrastructure, crime violence and corruption, housing, employment and sanitation and other social and health issues) for the 'challenges' associated with living in a MC in the developing world.

Students should be prepared to answer questions from DP2 which require a 'description, explanation, account or analysis'. Students should also be prepared to answer questions which are worded through 'social and health issues'. It is therefore important that a deep knowledge of DP1 is crucial in addressing the 'cause and effect' or 'how and why' in both Section II and Section III in the HSC exam.



Traffic congestion and pollution, New Delhi. Source: https://upload.wikimedia.org/wikipedia/commons/a/a8/Ratan_Lal_Market%2C_Kaseru_Walan%2C_Paharganj%2C_New_Delhi%2C_Delhi%2C_India_-_panoramio_%281%29.jpg

Figure 1: Connecting the syllabus for students.



DP3: TRIALSS – for making a judgement based on criteria on the effectiveness of a response to a challenge of living in a MCDW

The criteria which can be used to evaluate the effectiveness of responses to the challenges of living in MC's:

- T Time frame and cost appropriate?
- R Has it resolved the issue?
- I Intragenerational & Intergenerational equity
- A Another city responded this way effectively?
- L Living standards improved?
- S Ecological sustainability in an urban context
- S Self sufficiency

The following pages include a snapshot of our recent two-part assessment task at Cranbrook School.

Students complete a hand in written report (five pages on five different challenges from **WATCHES**) in preparation for a stimulus based, short answer exam (/30 marks), consisting of 7 x 1-mark skills questions, 15 x marks from 2–6-mark short answer responses and an 8-mark response. This targets student's capacity to respond to Question 21's in the HSC exam, as well as stimulus based 'application style' questions. Some elements of the notification are included here, along with the marking criteria and a student work sample. Notice the use of colour coding in order to clearly demonstrate the core aspects of 'explain' and 'evaluate'. The student clearly shows deep knowledge from TRIP, SIP, WATCHES and TRIALS.

Task Description

Part 1: Hand -in Written Task: 20% Weighting

- You will be required to use the template provided to complete the hand-in typed report
- Your completed report will address 5 challenges that a range of mega cities in the developing world face, such as:
 - **W**ater and power supplies
 - **A**ir quality
 - **T**raffic infrastructure
 - **C**rime, violence and corruption
 - **H**ousing
 - **E**mployment
 - **S**anitation and other social and health issues
- Your completed template will also evaluate the range of responses to reduce these challenges according to appropriate criteria such as:
 - **T** Time frame and cost appropriate?
 - **R** Has it resolved the issue?
 - **I** Intragenerational & Intergenerational equity
 - **A** Another city responded this way effectively?
 - **L** Living standards improved?
 - **S** Ecological sustainability in an urban context
 - **S** Self sufficiency
- Your template will be marked /50

Template Requirements

The template provided requires you to:

- Provide a one-page overview (650 words per challenge) that responds to the issue in the following way:
 - Detailed **explanation** of the challenge in Mega Cities of the developing world
 - Locational example and **description** where the challenge is prevalent
 - Response to the challenge and by whom- name of response, date, aim/goals of the response
 - **Evaluation** of the response based on appropriate criteria

Student Template

Challenge 1:

1. Explanation of the challenge in megacities of the developing world:

- a. Causes of the challenge
- b. Effect of the challenge

2. Locational example:

- a. Geographic location
- b. Population data of the city
- c. Causes of the challenge in the locational example
- d. Effect of the challenge in the locational example

3. Response to the challenge:

- a. Description of the responses:
 - i. Who made the response? When was it introduced? What are the core aims/goals of the response?
 - ii. Evaluation of the responses based on appropriate criteria, such as:
 - **T** Time frame and cost appropriate?
 - **R** Has it resolved the issue?
 - **I** Intragenerational & Intergenerational equity
 - **A** Another city responded this way effectively?
 - **L** Living standards improved?
 - **S** Ecological sustainability in an urban context
 - **S** Self sufficiency

Part A: Marking Criteria	Mark
<ul style="list-style-type: none"> – Demonstrates a comprehensive understanding of mega cities in the developing world and the responses to the challenges of living in them – Makes detailed judgements on the effectiveness of the responses to the challenges of living in mega cities in the developing world with reference to appropriate criteria – Integrates and refers to relevant case studies, illustrative examples and evidence where appropriate with direct reference and analysis of sourced material – Presents a sustained, logical and cohesive written response in the template using appropriate geographical information, ideas and issues 	9 – 10
<ul style="list-style-type: none"> – Demonstrates a well-developed understanding of mega cities in the developing world and the responses to the challenges of living in them – Attempts to make judgements on the effectiveness of the responses to the challenges of living in a mega city and may refer to appropriate criteria direct reference of sourced material – Refers to relevant case studies, illustrative examples and evidence where appropriate – Presents an answer using appropriate geographical information, ideas and issues 	6 – 8
<ul style="list-style-type: none"> – Demonstrates some understanding of mega cities in the developing world and some of the responses to the challenges of living in them – May refers to relevant case studies, illustrative examples where appropriate – May refer to geographical information, ideas and issues 	3 – 5
<ul style="list-style-type: none"> – Demonstrates a basic understanding of Mega Cities of the developed world 	1 - 2

Student sample:

The Housing Challenge (cause/effect/evidence)

The growth of urban populations in the developing world, home to now some 33 mega cities (MC's), is widening the housing gap, exacerbating inequality and if current trends continue, 1.6 billion people around the world will lack access to affordable, adequate and secure housing by 2025¹. Moving towards a world populated by more than 9 billion people, finding affordable and reasonably spacious houses is becoming increasingly problematic, primarily in urban places, which now accommodate 56% of the global population.

Housing in Lagos – Geographic Location – Population Data.

The saying "may the city not spoil", has become ever so significant in 21st century Lagos, Nigeria – a MC facing the impacts of a dynamic population composition, especially towards its housing system. Lagos, located in the South-West quadrant of Nigeria on the coast of the Gulf of Guinea (6.5244° N, 3.3792° E), has rightfully attained the name Africa's Boom Town², with populations growing from 1.4 million in 1970, to approximately 14 million in 2020³. In consequence, slum households have been increasingly displaced by the government, which, although intending for a "slum upgrading", has only exacerbated the birth rates of urban dwellers into intergenerational poverty and segregation on the cities periphery. The government has also failed to address Lagos' major infrastructure crisis, having accumulated only \$3 billion of the estimated \$32 billion needed to restructure the MC's urban morphology. Poor housing conditions have resulted in overcrowded slums, income inadequacies and residential evictions, as well as a provision of services due to demand exceeding supply. As such, one-fifth of the city's 21 million residents still live in poverty⁴, particularly in "the world's biggest floating city"⁵ Makoko, facing the Atlantic Ocean 6 metres AMSL. Here, reporter Tolu Ogunlesi found "house[s] built from wooden planks, and ris[ing]...on stilts", reinforcing that approximately half of slum citizens live on less than \$2 daily,⁶ with 80% living in one room with an average of seven people⁷. Furthermore, 3,000 households were displaced by the Lagos government in the Badia East community between 2013 and 2017 due to the outsourcing of cheap labour and the subsequent influxes of rural migrants, thus straining the provision of houses and resulting in severe cases of homelessness and poverty.

The response, and by whom (criteria/evaluation/evidence)

Numerous projects are attempting to address the poor housing conditions in Lagos, Nigeria. Most notably, the billionaire Chagoury Brothers' are developing their NGO Eko Atlantic project, reclaiming land from the Atlantic Ocean and transforming it into 10 square kilometres of urban area, attempting to accommodate and improve the living standards of displaced and poorly housed Lagosians. As such, the Eko Atlantic's plan to provide houses for more than 500,000 people illuminates its highly beneficial effects, whilst its provision of a power-water supply and an independent road network highlights the wide-ranging advantages of the construction, reviving Lagos' urban space and liberating the MC from its 6,871 residents per square kilometre. By extension, living standards are envisioned to improve dramatically, with goals to bring 250,000 new jobs into the Lagos economy, helping resolve housing shortages brought by surging populations, stemming from the nature and character of Lagos. Moreover, by producing a "clean and eco-friendly" construction framework, the Chagoury Brothers have embedded intergenerational equity within their project's philosophy, fortifying the Eko Atlantic against pressures of climate change and overurbanisation. However, urban critics suggest that, although the project may solve the MC's intergenerational poverty cycle, its sea wall "could worsen the situation for neighbouring areas"⁸, as storm surges move around the wall towards surrounding suburbs. It is therefore evident that despite the project's integration of urban dwellers, and its offering of intergenerational access to quality housing, its construction will negatively benefit neighbouring populations, ultimately spurring greater migration and overpopulation within the city.

Endnotes

1. R. King (2017) The Crisis in Affordable Housing Is a Problem for Cities Everywhere
2. R. Draper (2015) How Lagos has become Africa's boom town
3. World Population Review (2020) World City Populations
4. T. McDonnell (2017) Slum Dwellers In Africa's Biggest Megacity Are Now Living In Canoes
5. T. Ogunlesi (2016) Inside Makoko: danger and ingenuity in the world's biggest floating slum
6. A. Adeoye (2019) In Lagos, finding a home to rent is an impossible mission
7. M. Ketchell (2020) Lagos makes it hard for people living in slums to cope with shocks like COVID-19
8. M. Onuoha (2017) A 5-mile island built to save Lagos's economy has a worrying design flaw

BUSTING THE BANDS: MEGA CITIES

Go to resources

Unequal scenes – <https://www.weforum.org/agenda/2019/02/10-cities-are-predicted-to-gain-megacity-status-by-2030>

Visual Capitalist – <https://www.visualcapitalist.com/pearl-river-delta-megacity-2020/>

ArcGIS Story Maps – <https://storymaps.arcgis.com/stories/a900831b442e43c79cf9eeb399d5440f>

ABC Radio Podcast – <https://radio.abc.net.au/programitem/peE3nRN0e3>

World population density – <http://luminocity3d.org/WorldPopDen/#3/12.21/10.02>

How big will mega cities be in 30 years? – https://www.youtube.com/watch?v=_jnMivEZ8gc&feature=emb_logo

How to protect fast growing cities from failing? TED Talk – https://www.youtube.com/watch?v=rokPqHc9iD0&feature=emb_logo

20 Short answer practice questions to master MCDW

1. Outline the nature of mega cities in the developing world (2-3)
2. Account for the emergence of and growth of mega cities in the developing world (2-3)
3. Describe the changing nature of mega cities (3-4)
4. Explain the nature of the urban morphology in mega cities in the developing world (3-4)
5. Outline a characteristic associated with mega cities of the developing world (2-3)
6. Justify the prevalence of informal housing settlements within mega cities of the developing world (3-4)
7. Account for the prevalence of informal economies within mega cities of the developing world (3-4)
8. Explain the implications associated with the character of mega cities of the developing world (4)
9. Explain the nature and character of mega cities (4)
10. How does the nature and character strain the provision of services in mega cities in the developing world? (4-6)
11. How does the spatial distribution influence TWO challenges of living in mega cities of the developing world? (4-6)
12. Describe ONE contemporary challenge of living in mega cities of the developing world (3-4)
13. Account for ONE social and ONE health issue associated with living in mega cities (4-6)
14. Analyse TWO challenges of living in mega cities and describe why these are prevalent in all mega cities of the developing world (6)
15. Explain TWO challenges associated with living in mega cities of the developing world (4)
16. Discuss TWO responses to the challenges of living in mega cities (6-8)
17. Assess the effectiveness of a response to a challenge of living in mega cities of the developing world (6)
18. Evaluate the effectiveness of urban protest in responding to a challenge of living in a mega city of the developing world (6)
19. Evaluate a government, NGO or community self-help response to a challenge of living in a mega city (6-8)
20. How can the spatial distribution of mega cities inhibit the success of responses to combat challenges of living in a mega cities of the developing world (6-8).



Skills activities linked to Dharavi slum in the megacity of Mumbai are included in the Stage 6 Skills section.

The following article explains how Dharavi slum dealt with the COVID-19 pandemic to reduce the health impact on communities <https://www.bbc.com/news/world-asia-india-53133843>