Every child is a National Asset

Basic Education Lekgotla 2024

Recent South African trends and what they mean for the future

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basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

Read to Lead
A Reading Nation is a Leading Nation

Skills for the 21st century are not only about mathematics and science, but this is inevitably an important part.

From the African Union's ***Continental Education Strategy for Africa*** (CESA):

The relevance of secondary education remains a concern as it relates to employability, technical and vocational training and articulation with tertiary education. **Math and science** at this level **are critical to the development of a well-equipped human capital** capable of competing in increasingly science and technology-driven world as well as the foundation for knowledge-based economies.

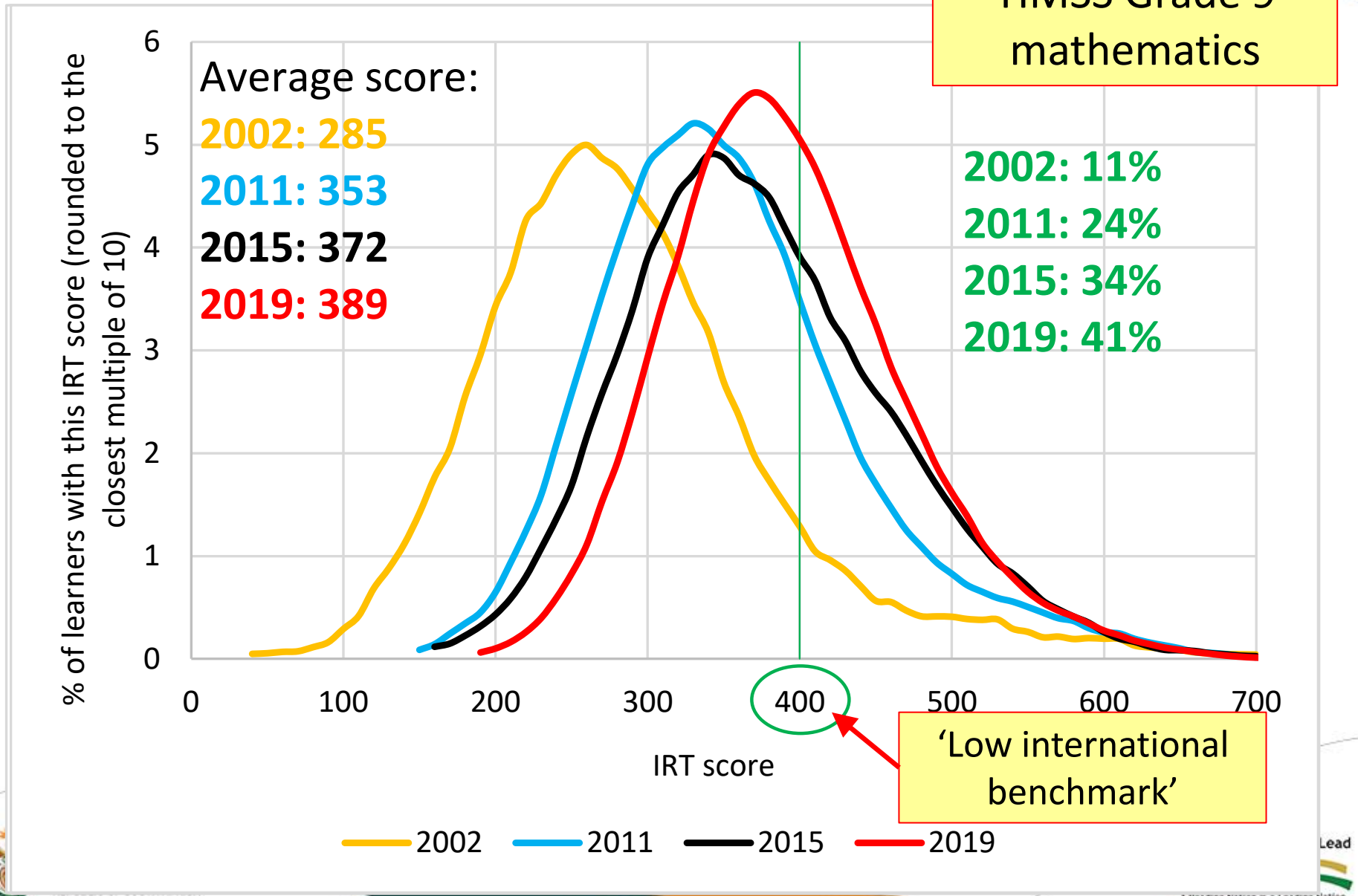
TWENTY-FIRST CENTURY OPPORTUNITIES

1. Let us not fall for the 'worst in the world' narrative, which is not supported by data, and realise that **internationally we have co-travellers**.
2. Schools now roughly meet **minimum university demand for sufficient mathematics and science skills**, but we should go beyond this minimum, for various reasons – the 'pipeline' suggests this can be done in the near future.
3. Let us go on focussing on **mathematics outcomes** – our participation levels are on the whole not the problem.
4. Let us maximise the employment impacts of our **expanding set of practical subjects**.
5. As we continue to grow **ICT skills**, let us draw from what we already have, and consider existing (often unexpected) **pockets of mathematics excellence**.

TWENTY-FIRST CENTURY **PLANNING**

This has become possible thanks to the efforts of **thousands of people inside and outside government**, building systems based on the latest technologies, but also paying attention to detail as we routinely gather and quality-assure our data.

1. Our performance in the international tests



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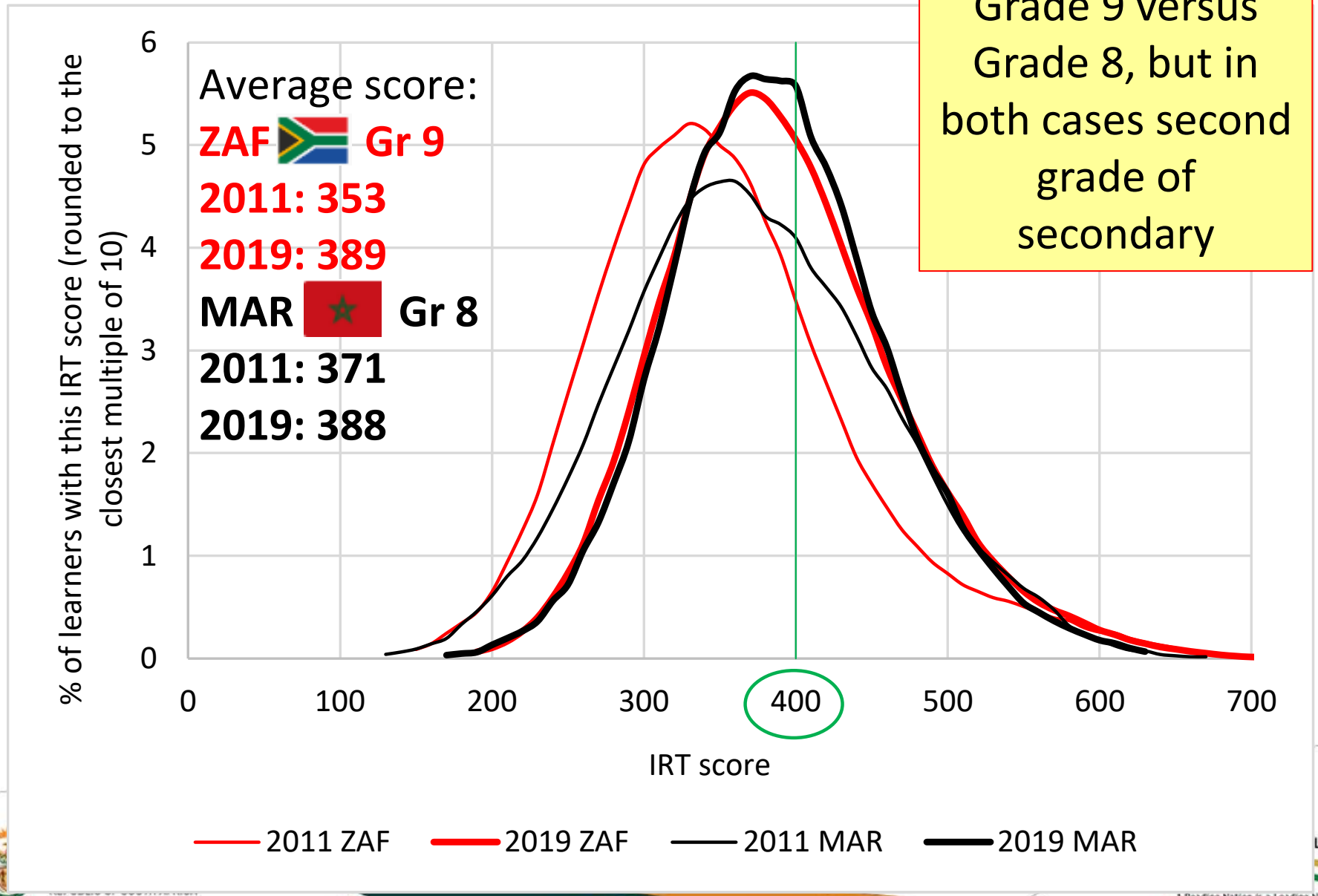
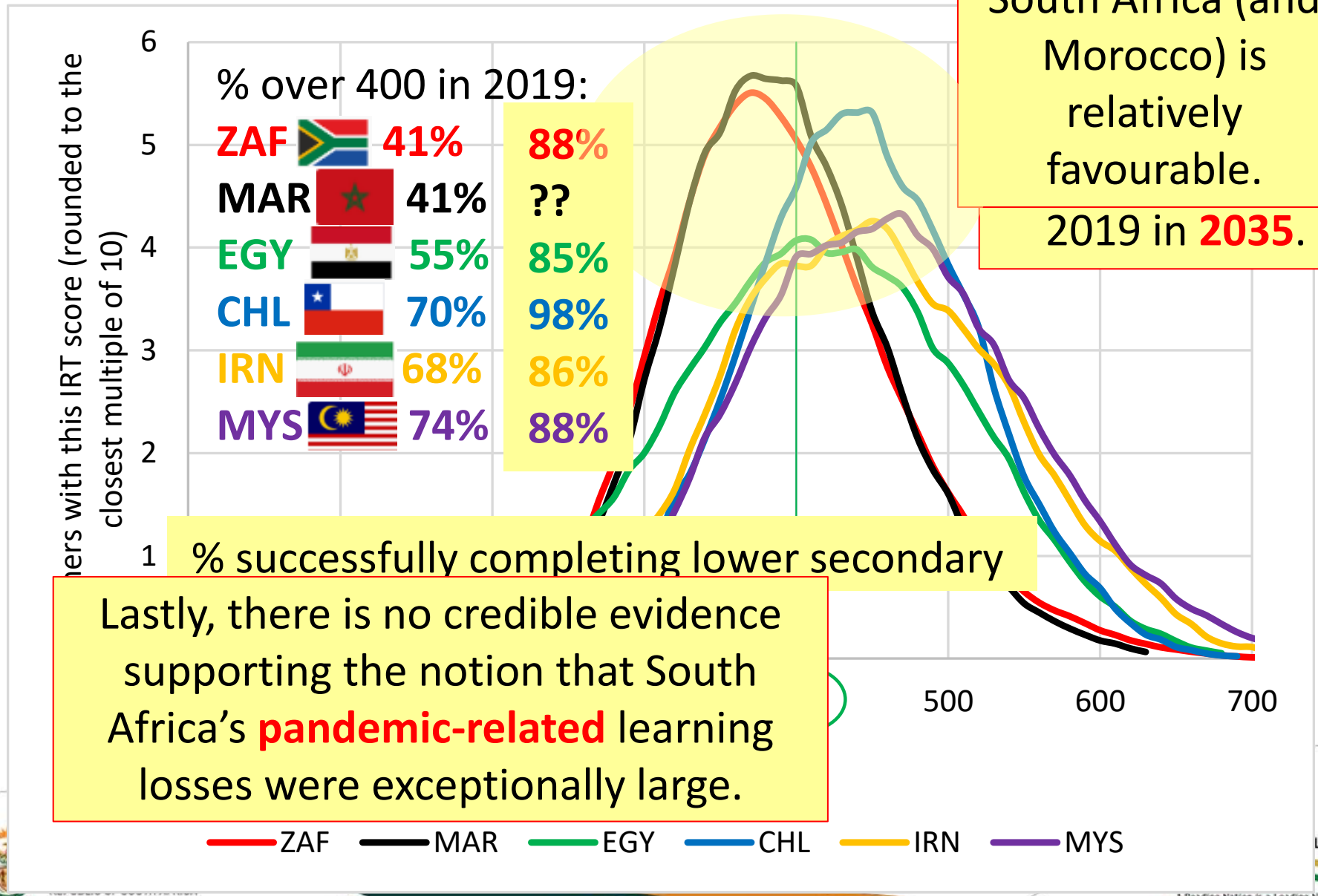


Grade 9 versus Grade 8, but in both cases second grade of secondary

1. Our performance in the international tests



Note that the 'pipeline' for South Africa (and Morocco) is relatively favourable.

2019 in **2035**.

Lastly, there is no credible evidence supporting the notion that South Africa's **pandemic-related** learning losses were exceptionally large.

2. Mathematics and science supply and demand

School supply

The number of year-end Grade 12 NSCs meeting university entrance Bachelors or Diploma requirements increased from **260,000** in 2011 to **470,000** in 2023.

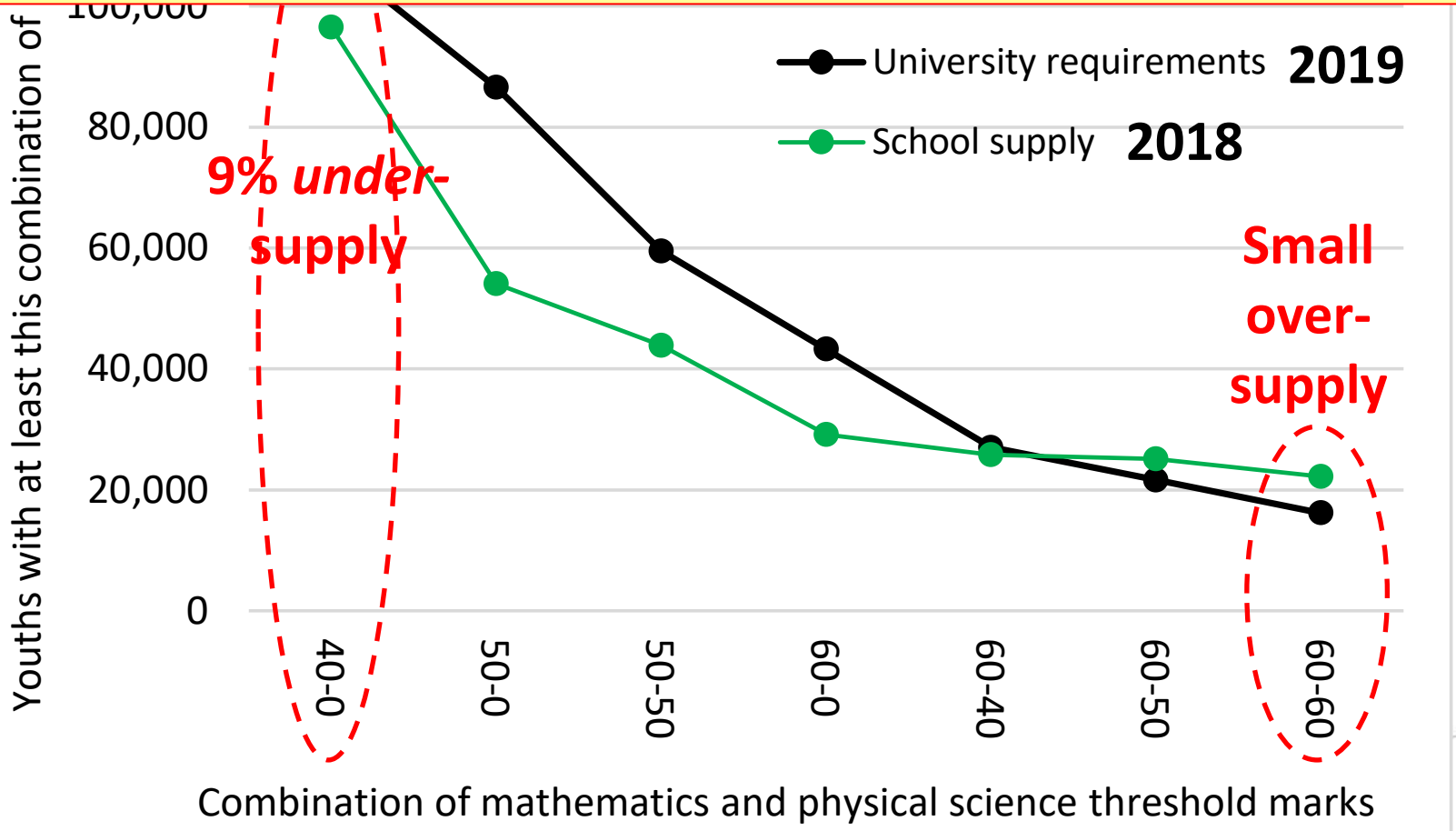
University demand

First-year university admissions have been at most **180,000** in recent years.

Sufficient **mathematics**, and to some extent **physical sciences**, marks are a more formidable barrier for the school-to-university transition. Around **two-thirds** of first-year university students are subject to some mathematics admissions criteria.

2. Mathematics and science supply and demand

These supply-demand questions should be more closely monitored, but with the 2023 rise in high-level mathematics achievers in NSC, **we are roughly meeting the demand**.

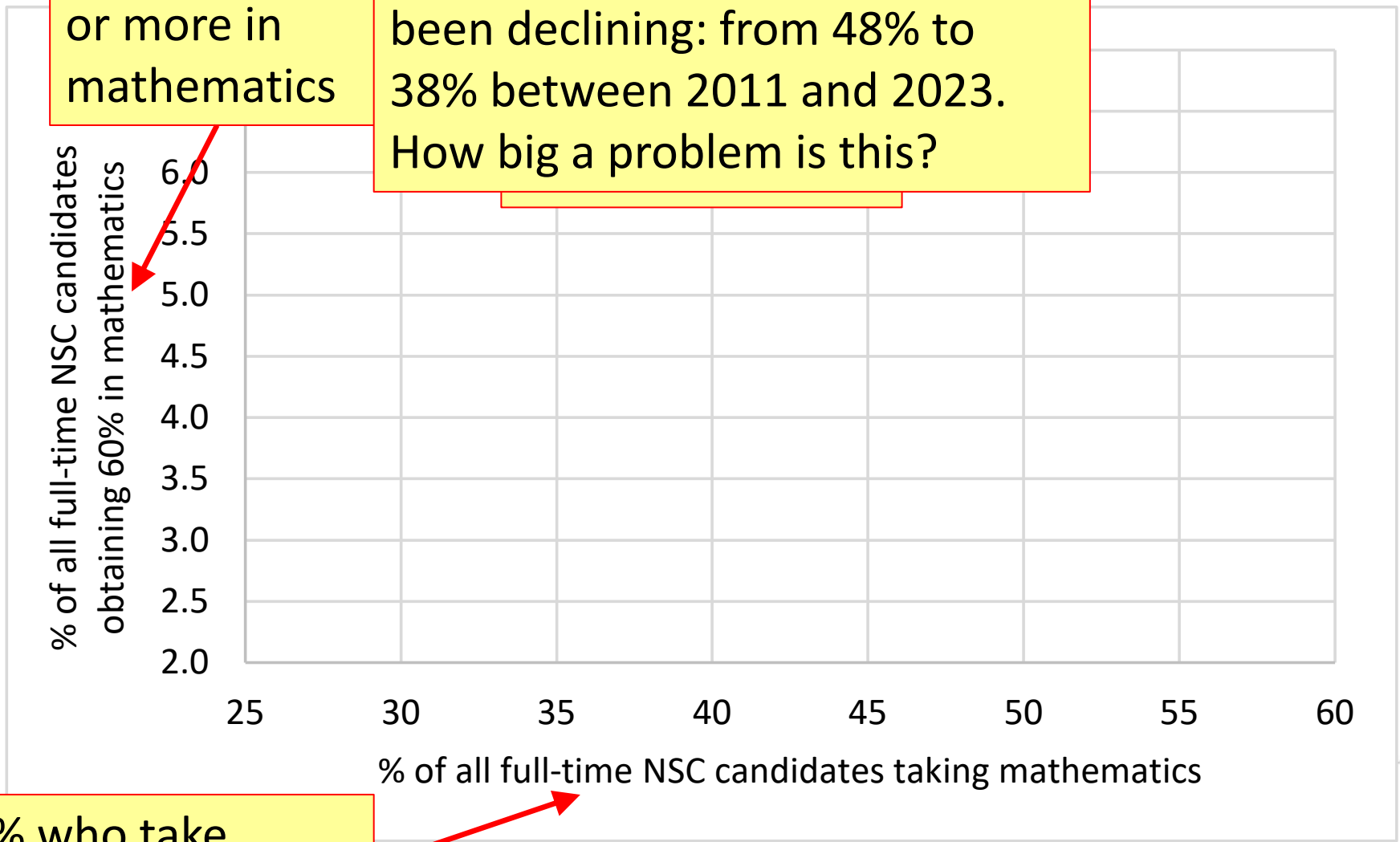


It is not enough just to reach the minimum demand, for various reasons.

3. Mathematics participation and outcomes

% who get 60 or more in mathematics

Participation in mathematics has been declining: from 48% to 38% between 2011 and 2023. How big a problem is this?



% who take mathematics

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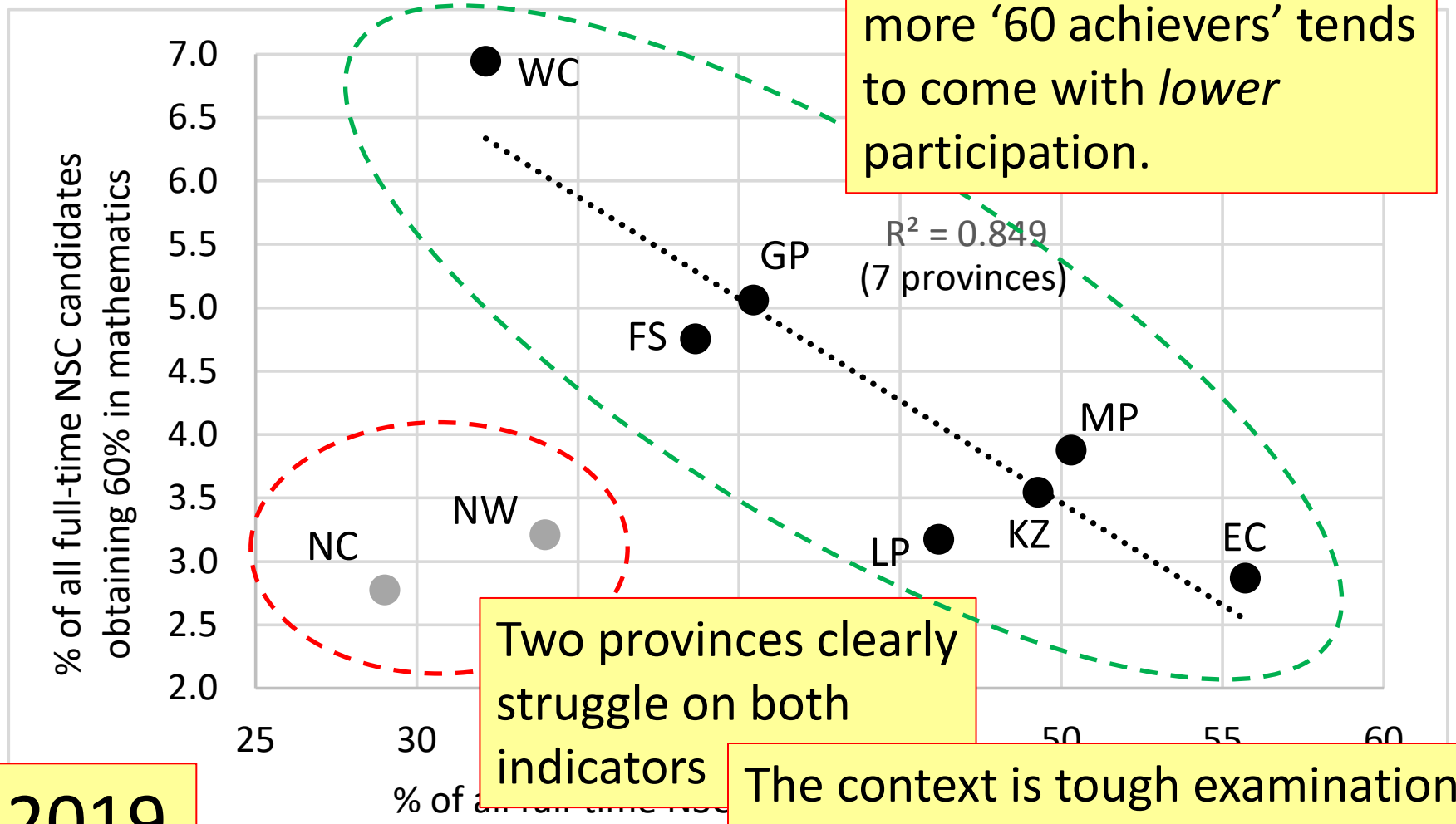
3. Mathematics participation and outcomes



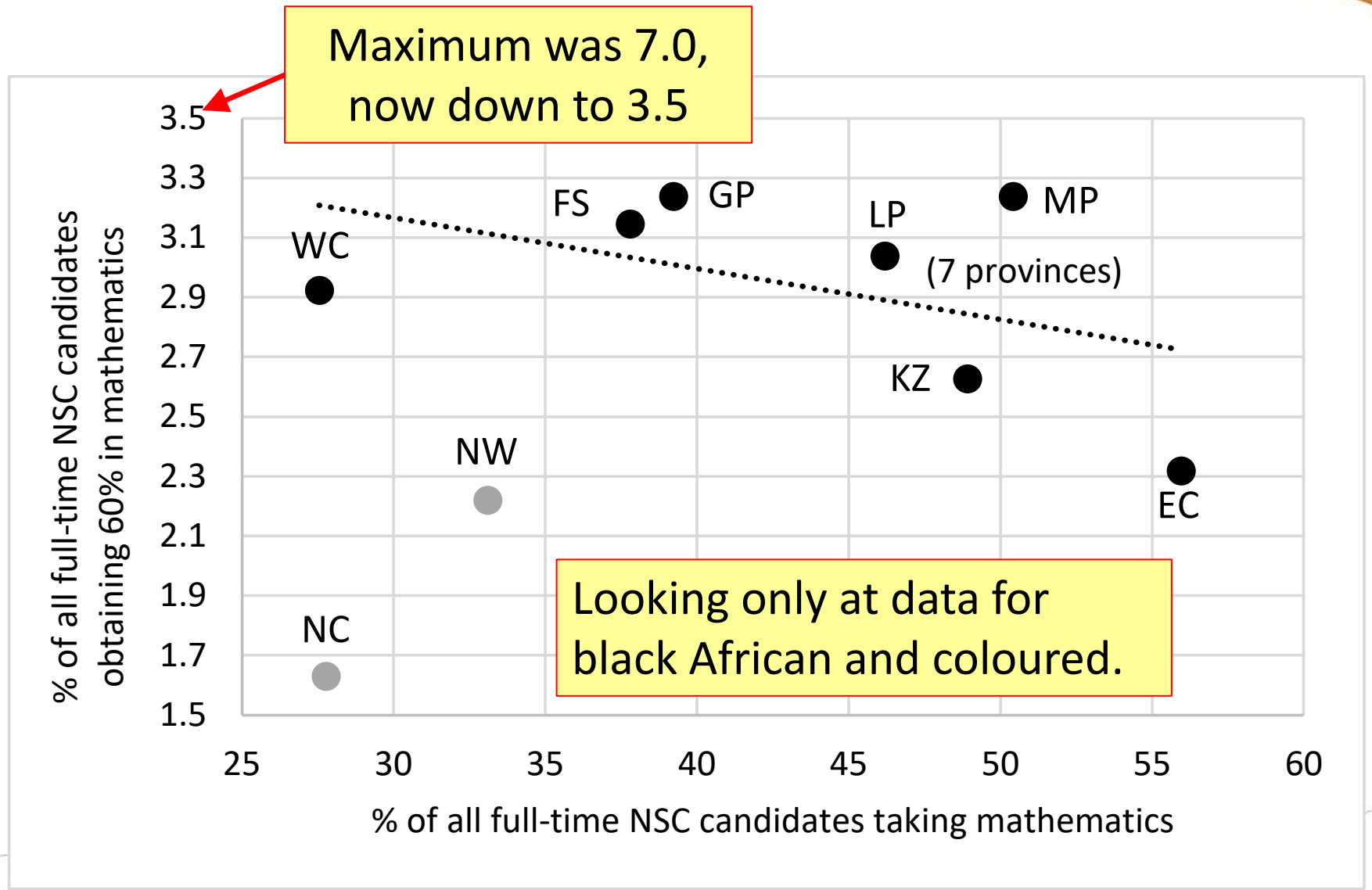
For the other 7 provinces, more '60 achievers' tends to come with *lower* participation.

Two provinces clearly struggle on both indicators

The context is tough examinations, of a world standard, but also high failure rates.

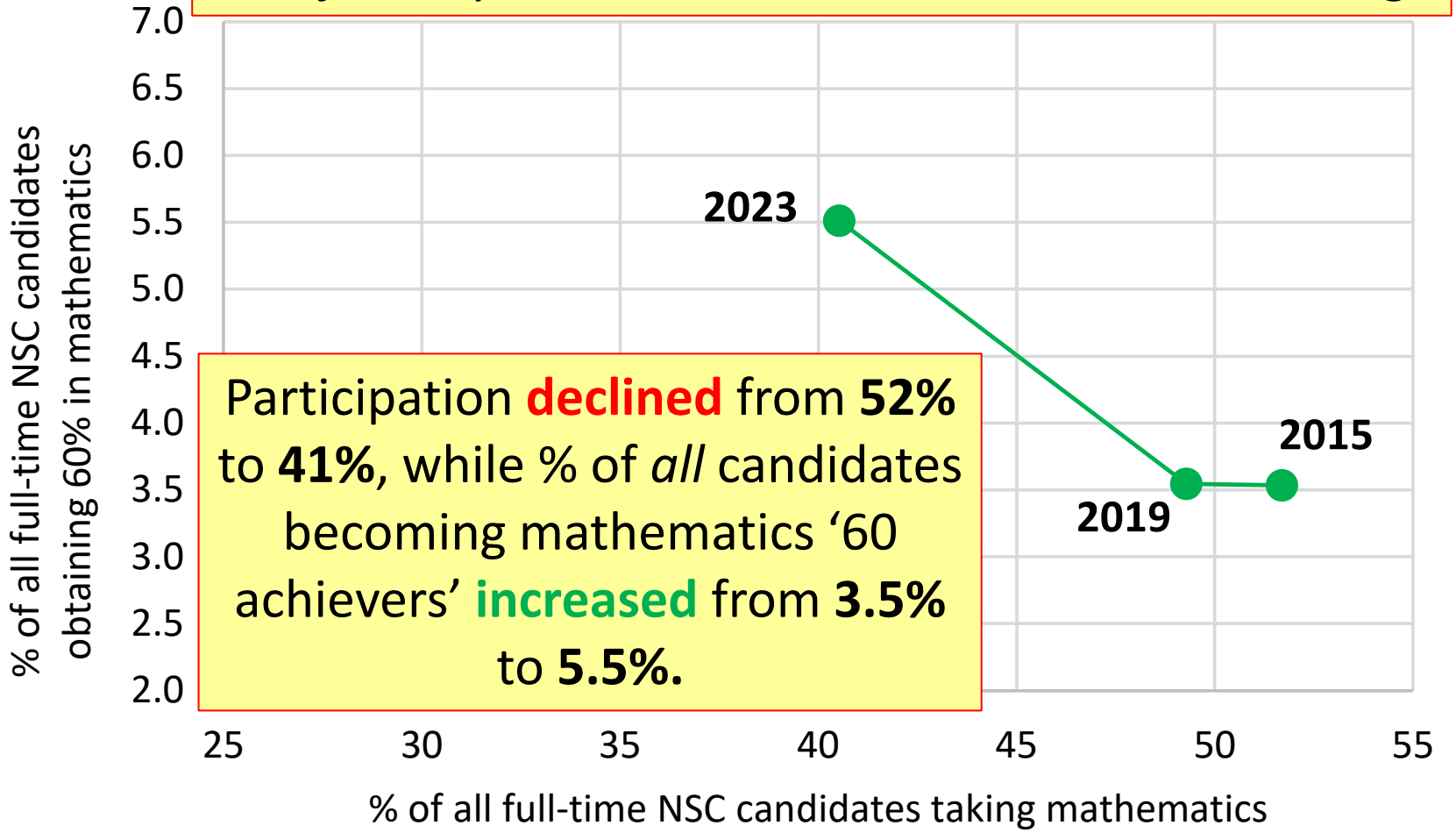
2019

3. Mathematics participation and outcomes



3. Mathematics participation and outcomes

The journey of KwaZulu-Natal 2015 to 2023 is telling.

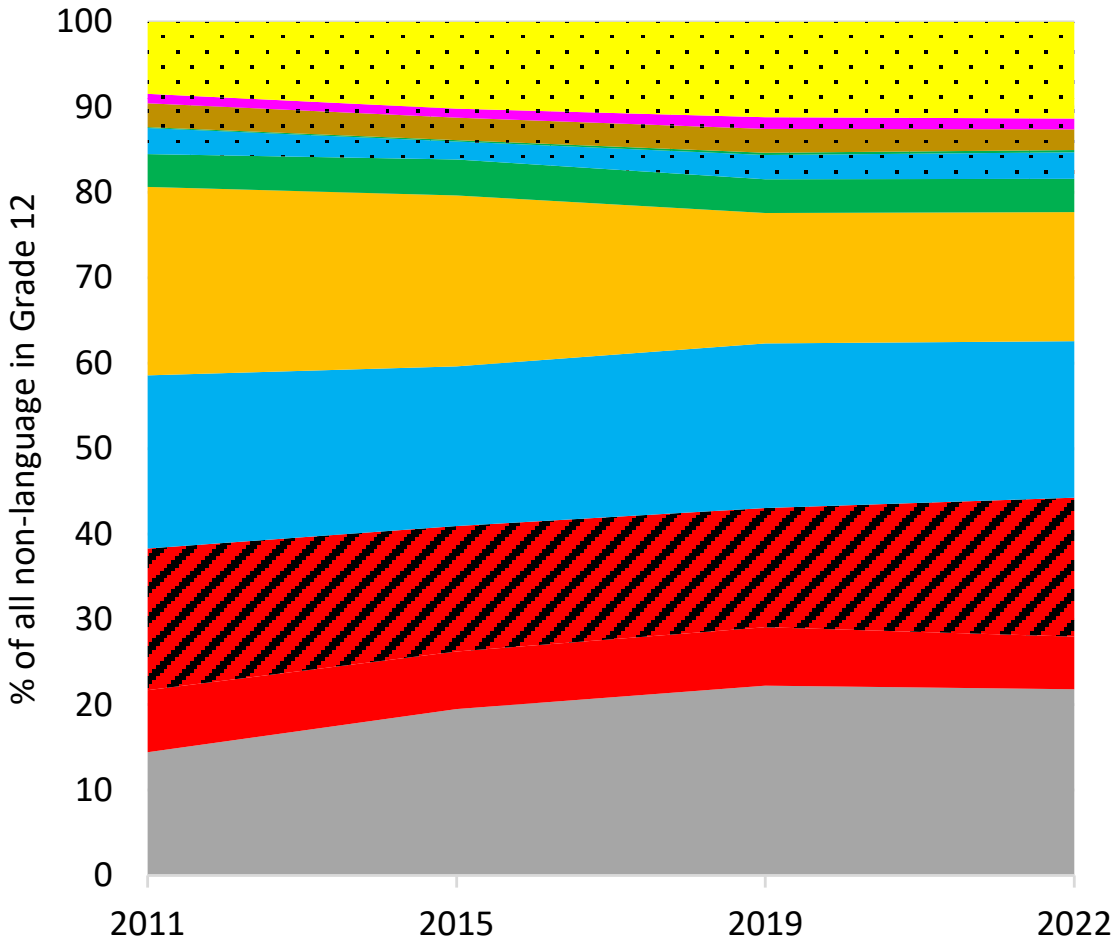


Participation **declined** from **52%** to **41%**, while % of *all* candidates becoming mathematics '60 achievers' **increased** from **3.5%** to **5.5%.**

4. Greater participation in practical subjects

Inevitably, some of the discussion around 21st century readiness must focus on grades 10 to 12 subject offerings and uptake.

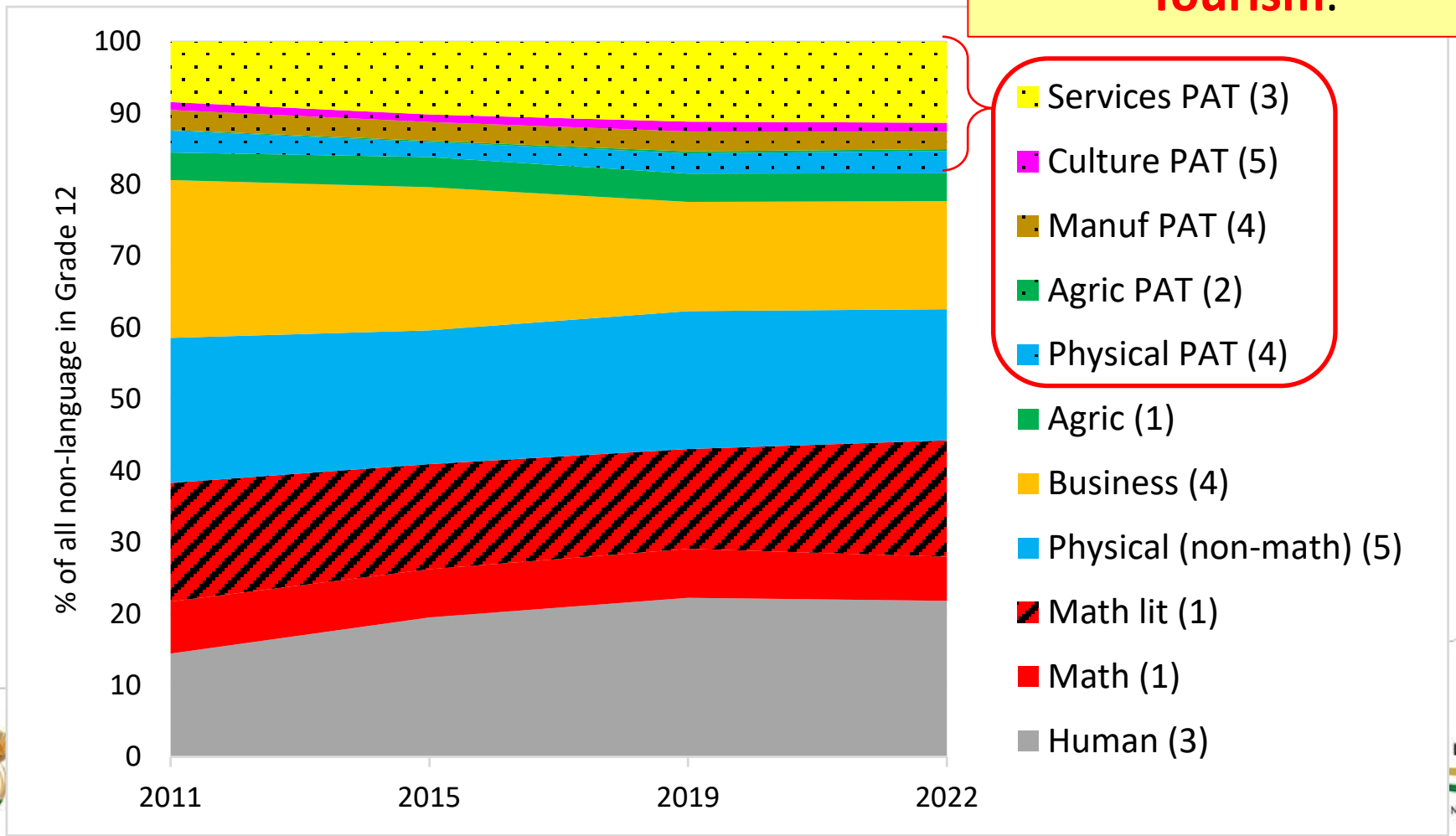
Except for 'Math lit' and Math', these are the official 'organising fields'.



- Services PAT (3)
- Culture PAT (5)
- Manuf PAT (4)
- Agric PAT (2)
- Physical PAT (4)
- Agric (1)
- Business (4)
- Physical (non-math) (5)
- Math lit (1)
- Math (1)
- Human (3)

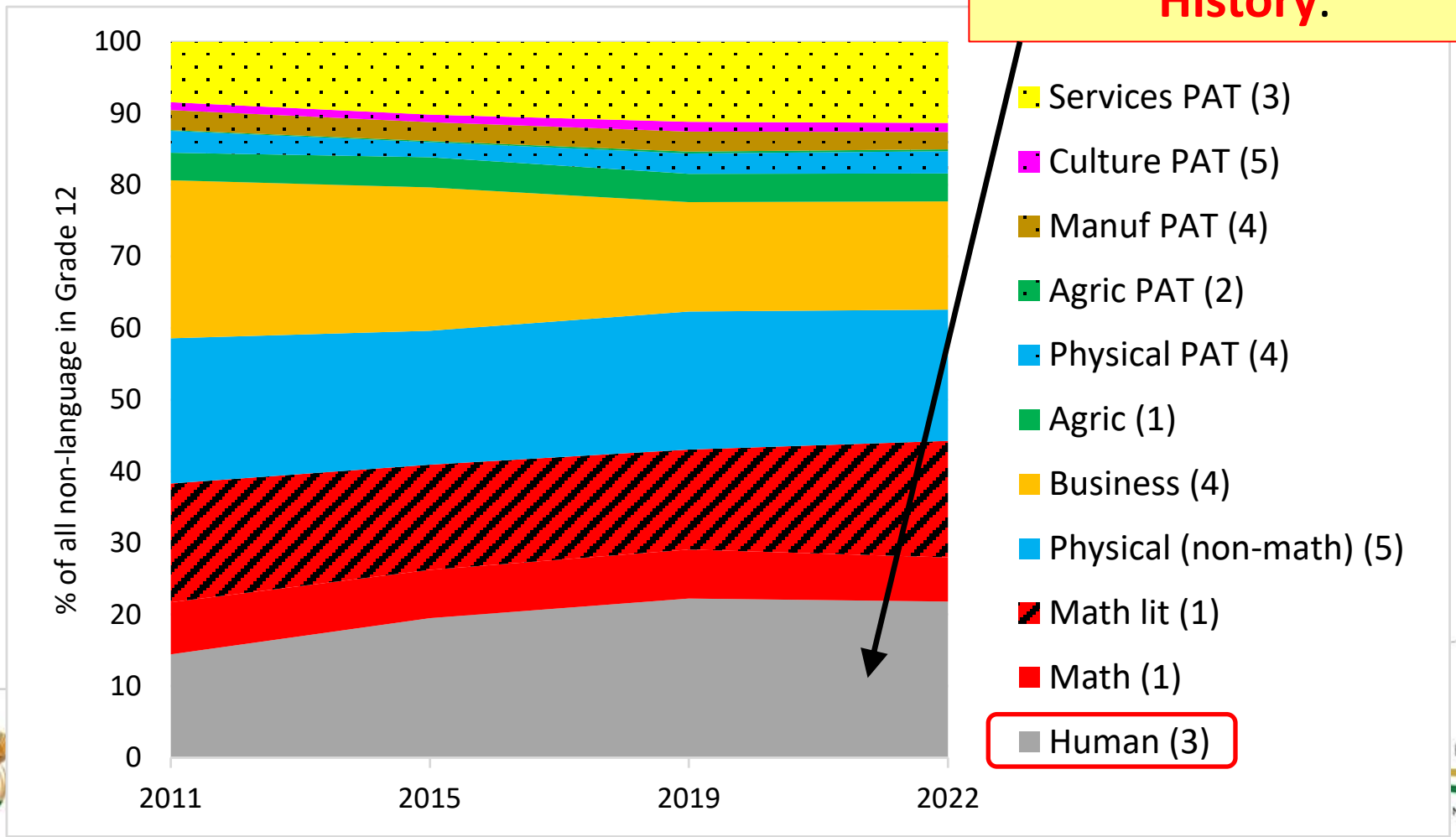
4. Greater participation in practical subjec

18 practical subjects (subjects with PATs) increased from **8%** to **11%** 2011 to 2022. Largely driven by **Tourism**.



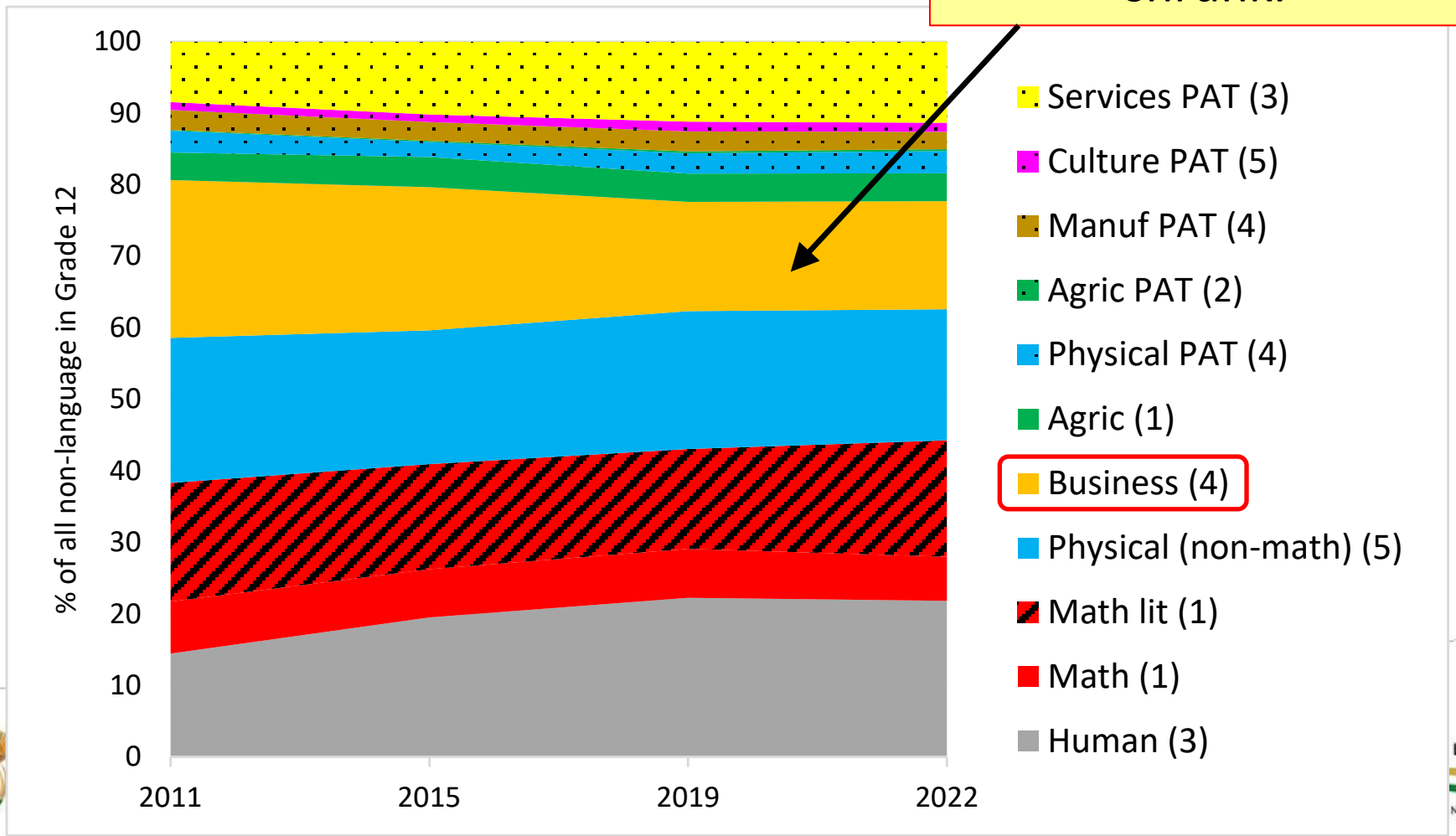
4. Greater participation in practical subjects

Humanities participation has grown 14% to 22%. Largely **History**.



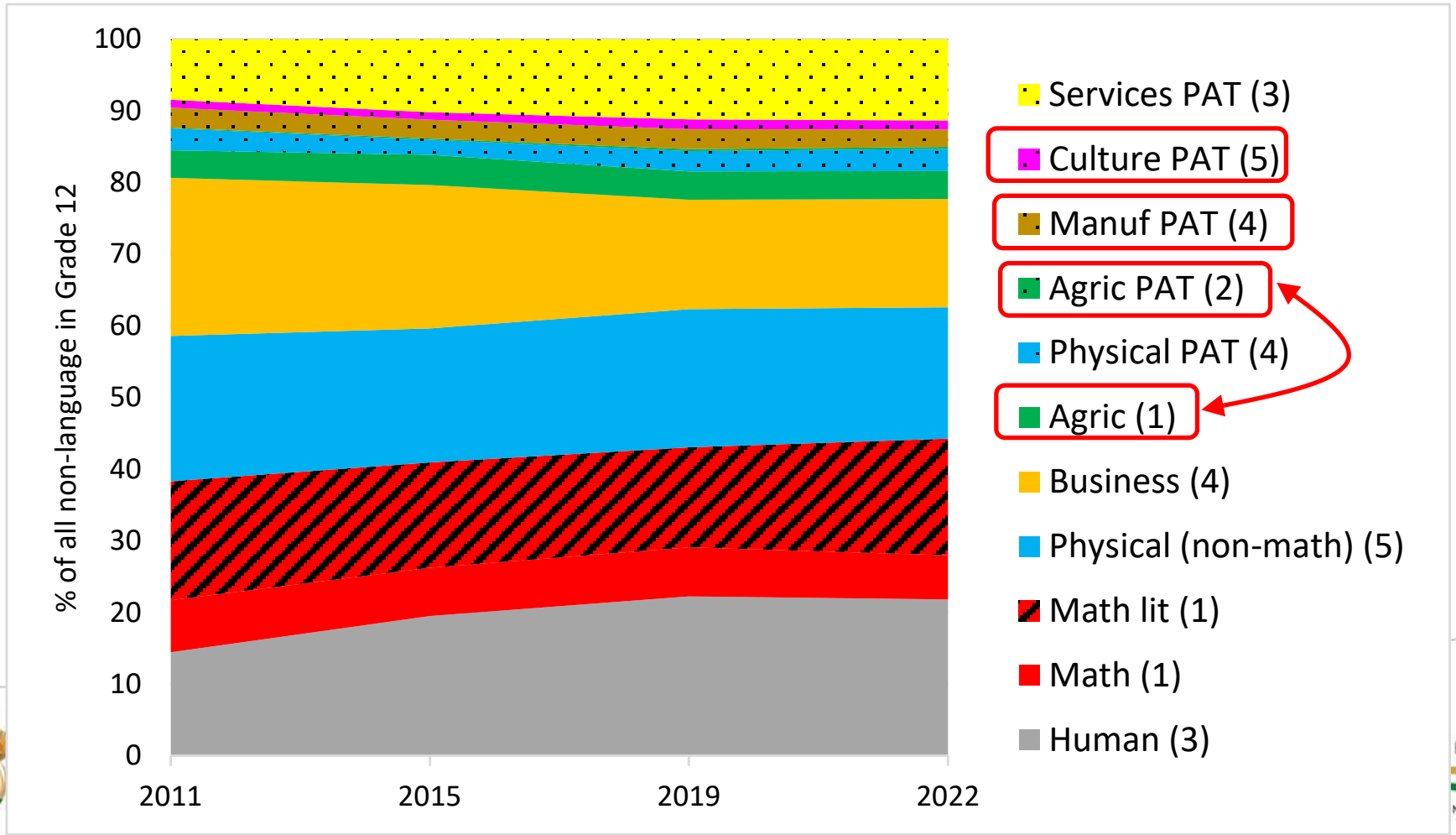
4. Greater participation in practical subjects

3 large business-oriented subjects have shrunk.

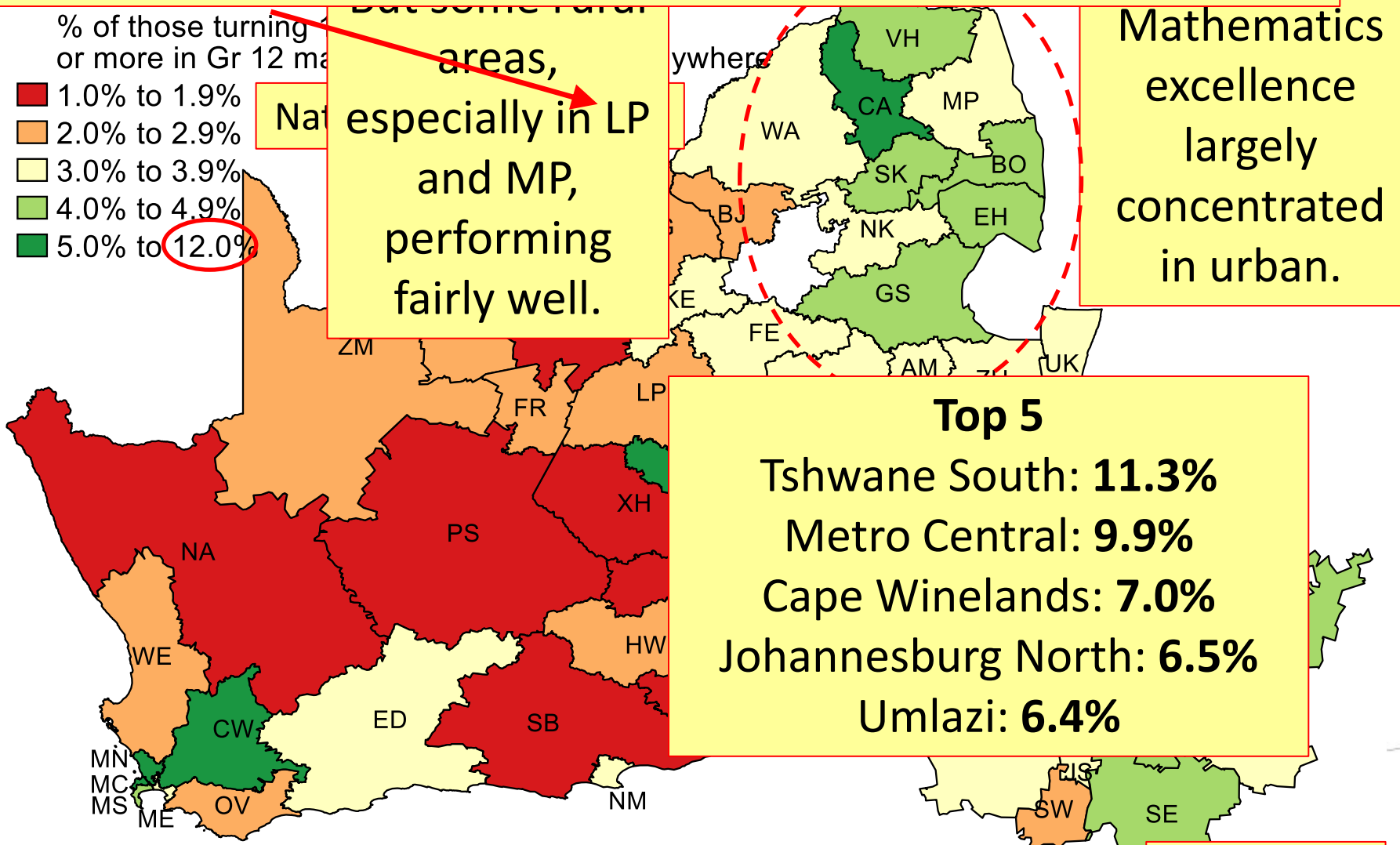


4. Greater participation in practical subjects

Small subjects that should be larger to deal with complex demands of 21st century?



Not % of Grade 12s in one year, but of a whole birth cohort – data now allows for the individual tracking of learners over years



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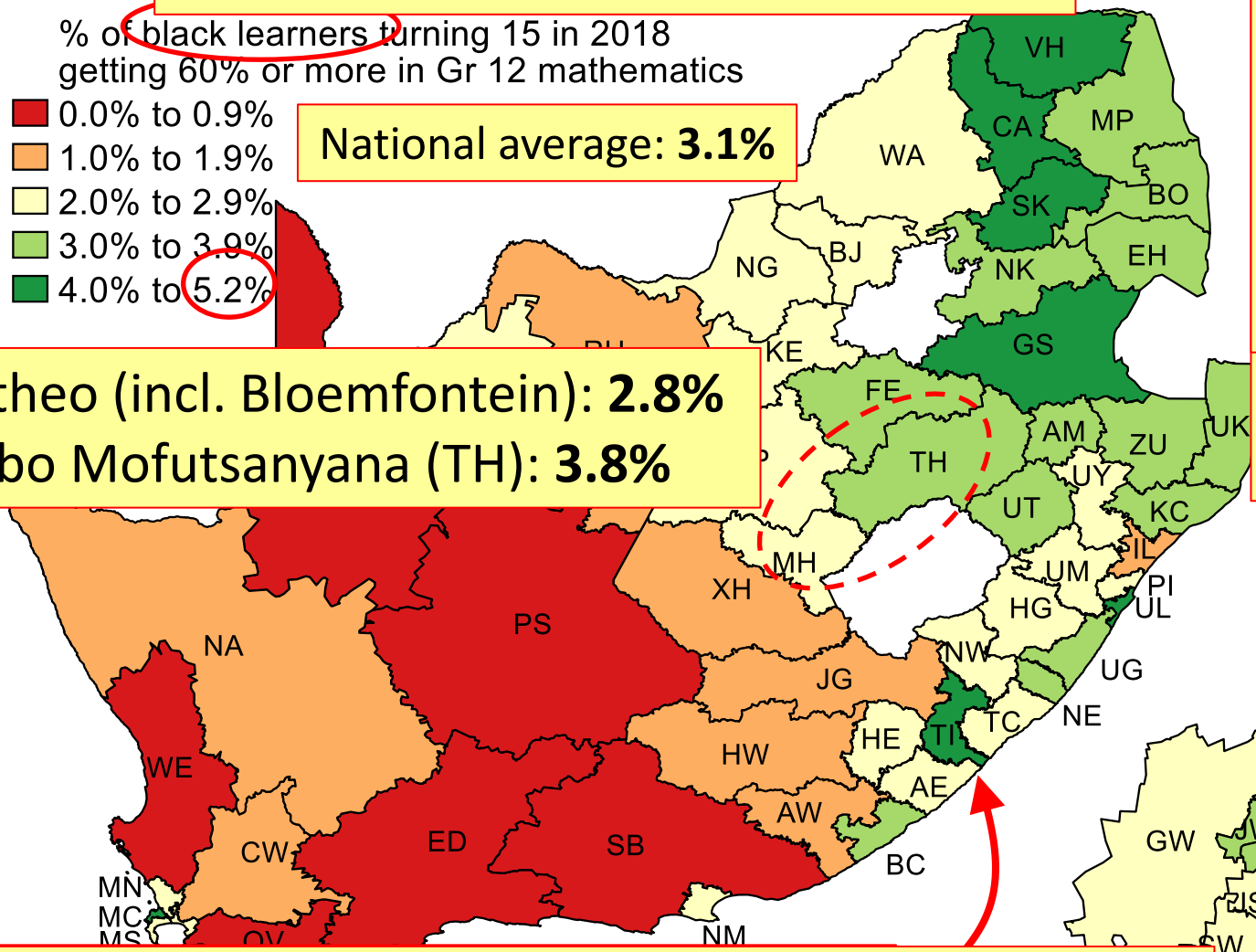
5. ICT sk cellence

All 4 Johannesburg districts: **3.4%**
Capricorn (incl. Polokwane): **5.2%** ★
Vhembe: **4.8%**



National average: **3.1%**

Motheo (incl. Bloemfontein): **2.8%**
Thabo Mofutsanyana (TH): **3.8%**

Why does this happen?

What are the implications for strategy?

areas often lag behind.

Important observation on gender: in recent years females have caught up with males on this indicator.

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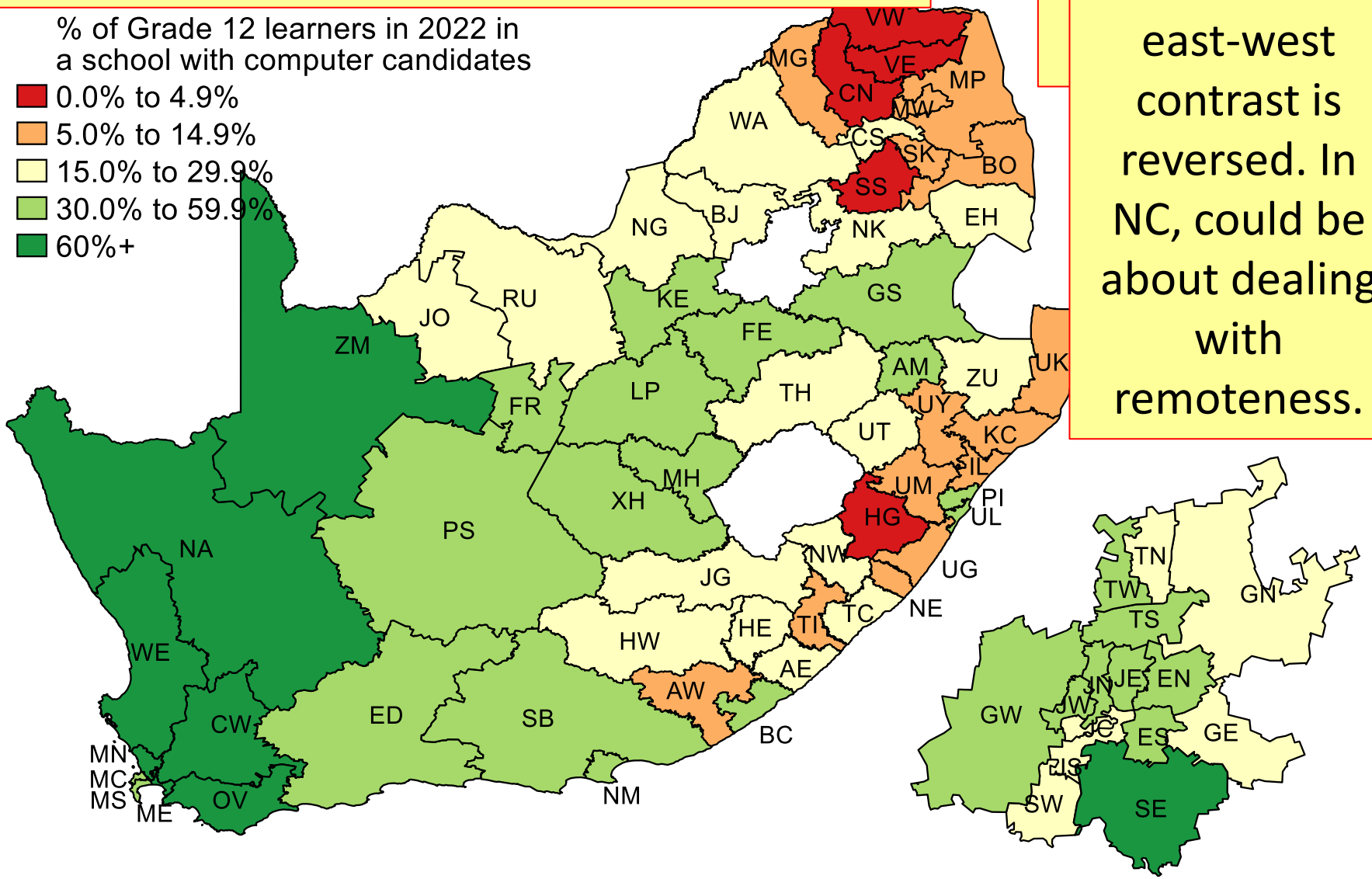
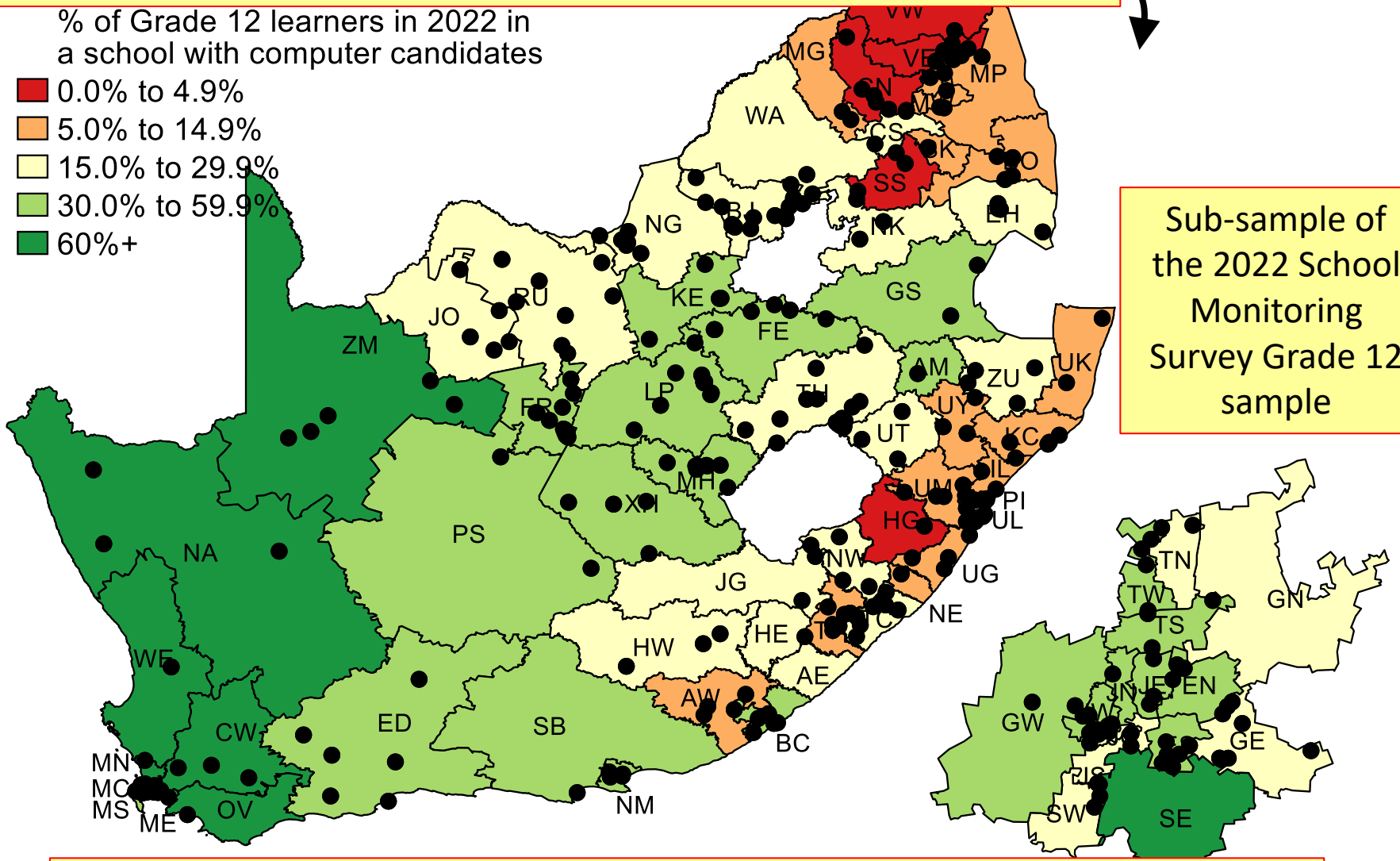
5. ICT skills and pockets of mathematics excellence

Turning to the 2 Grade 12 computer subjects…



It's as if the east-west contrast is reversed. In NC, could be about dealing with remoteness.

Three roughly equal groups of Gr 12 learners
- School participates in NSC computer subject
- No NSC computer participation, **but has computer lab**
- No NSC computer participation, **no computer lab**



Sub-sample of the 2022 School Monitoring Survey Grade 12 sample

A ‘low-hanging fruit’? And it’s not just about the hardware.

Thank you!

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