

## **Education Stocks and Flows Diagram: A Tool for Implementing Labor Market Assessments<sup>1</sup>**

**What it does:** The education stocks and flows diagram reveals a dynamic picture of skills supply in a workforce, as represented by formal education levels.

**What it contributes:** The diagram allows the viewer to instantly visualize the composition of a labor market in terms of educational attainment and age. The stocks and flows diagram can:

- Be used to visually distinguish the educational levels of a labor force and identify where changes are occurring
- Be used to quantify the various components of the educational population and workforce
- Be used to understand changes in the workforce change over time
- Provide insights into future trends in the labor market (e.g. likely high unemployment due to large numbers of youth not completing primary school)

The diagram can also be constructed for a subset of the labor force (i.e. doctors or nurses in the health care workforce), and further disaggregated by gender or age group.

**How it works:** A stock represents a quantity of something (in our case, people) in the system at one point in time, and the flow represents the rate at which the stock is changing. The following describes how it works:<sup>2</sup>

- **Stock:** A stock can be viewed as a bathtub. If you want to know how much water has collected in the bathtub after 30 minutes – you would need to know how fast (at what rate) water is flowing out of the faucet into the bathtub.
- **Flow:** The flow is represented by how fast (at what rate) the stock is changing – either how much the water in the bathtub is increasing or decreasing.

**How to view it:** The stocks and flows diagram below analyzes Kenya’s youth labor pool in 2013. There are “stocks” in two places – one, students currently studying at each stage of the educational system, and two, youth aged 15-35 who have either completed, or left, each level (see the bathtub-like shapes at the bottom of the diagram). “Flows” are the rate at which they pass (inflow and outflow) through the various stages of the education system and the labor pool. In the figure, one can review the current population (stock) and flow (transition) of students from primary all the way through the various postsecondary education tracks (Youth Polytechnic, TVET, College, and University). According to the diagram:<sup>3</sup>

- 9.3 million students are in primary school (stock)

---

<sup>1</sup> This document was produced through the Workforce Connections project funded by the USAID Office of Education and managed by FHI 360 under the FIELD-Support Leader with Associates; see <http://www.wfconnections.org> for more information. Draft version: March 4, 2015

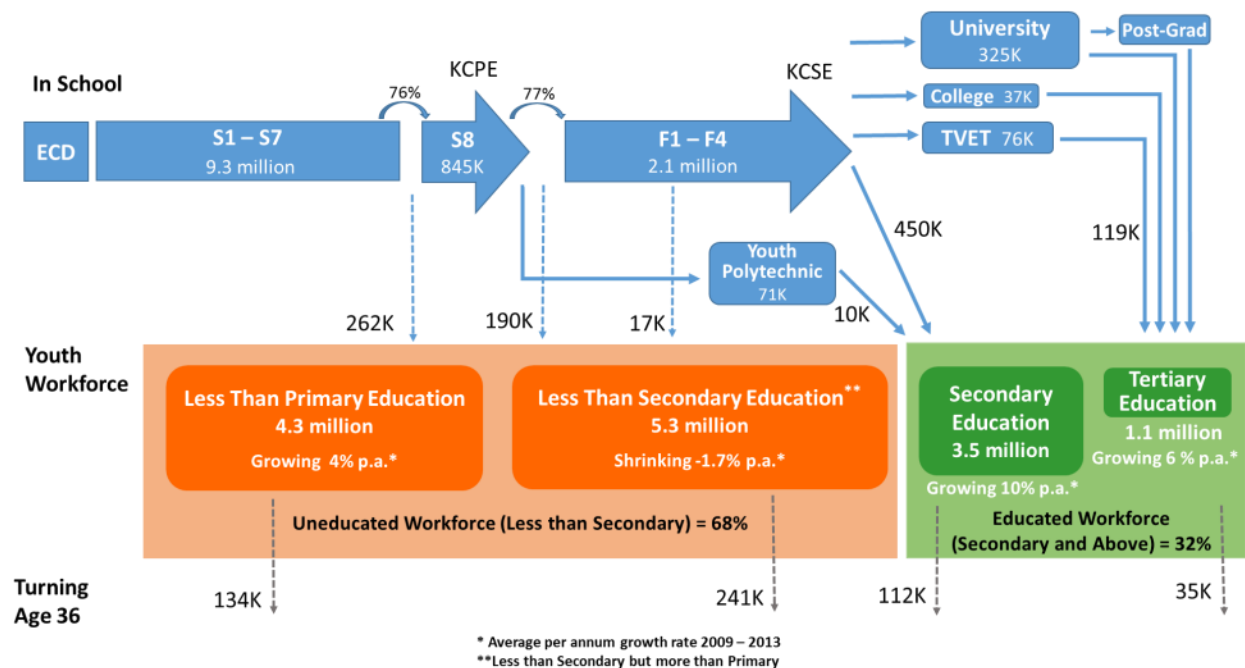
<sup>2</sup> Donella H. Meadows and Diana Wright (2009): Thinking in Systems – A Primer. Sustainability Institute. Earthscan Publishing, London, UK. Page 18

<sup>3</sup> USAID FIELD Report (2014): Kenya Youth Assessment – a rapid assessment of the Kenyan youth workforce and labor market to determine the best strategic fit for youth programming. FHI 360, Page 18-19

- 262,000 students leave primary school each year (outflow) before sitting for the Kenya Certificate of Primary Education (KCPE)
- 650,000 (77%) students transition to the secondary level each year (inflow), while 190,000 (23%) leave the system (outflow)
- 17,000 students leave secondary school each year (outflow) before completing their secondary education
- 460,000 students leave the educational system (outflow) after completing secondary education and enter the youth labor pool (inflow)
- In 2013, about 32% of students, or 4.1 million in the youth labor pool had a secondary education or higher (stock)

### Education Stocks and Flows<sup>4</sup>

Figure: Youth Educational Attainment Stocks and Flows



Source: Kenya National Bureau of Statistics -- 2009 Population Census; 2013 Statistical Abstract; 2014 Economic Survey.

<sup>4</sup> Calculations are estimates. Some needed data are not available and assumptions or simple models were used for estimation. However, results have been reviewed with leading professionals in the field and are understood to represent a reasonably accurate picture of the dynamics of youth labor market supply in Kenya.