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Inequality, Social Mobility and Career Ladders

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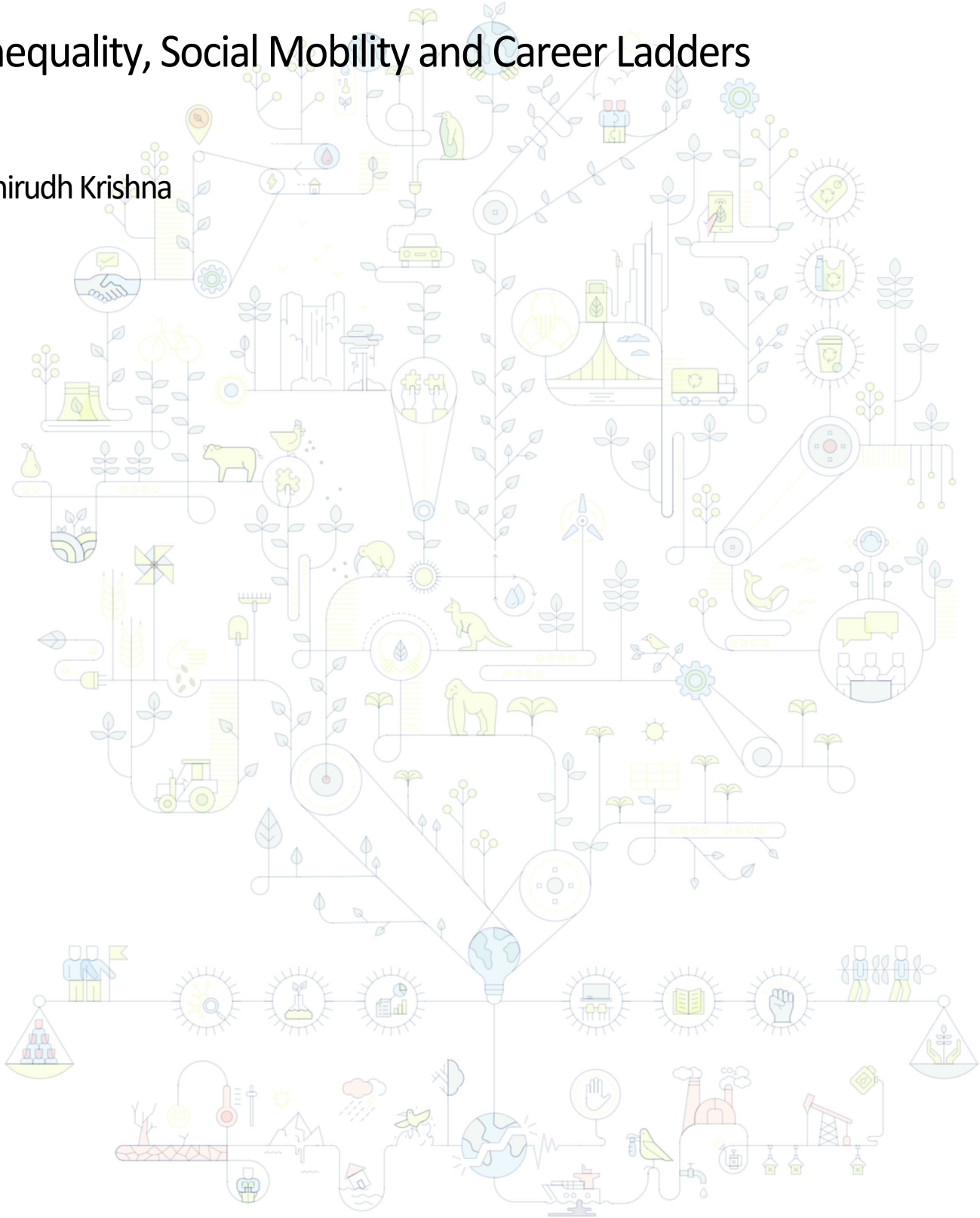

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ABSTRACT

This paper advances three related claims. First, raising social mobility and enhancing equality of opportunity are important for dealing with rising inequality. Second, promoting broad human development and raising individuals' advanced capabilities is a necessary (but not sufficient) condition for raising social mobility. Third, investments are required in more and better career ladders that offer clearly defined and well-regulated opportunities to climb higher and higher along one's chosen career path. For widespread social mobility to occur, multiple accessible career ladders need to exist, and people should be able to acquire advanced capabilities associated with climbing them. Diverse methods can be used for measuring social mobility and assessing career ladders. Some examples are presented in Annex 1, while a case study on building a career ladder is in Annex 2.

Visualizing the range of inequality in developing countries

Widespread and increasing public concerns with high and rising inequality were highlighted by the *2019 Human Development Report*. Growing inequality is causing alarm in industrialized as well as developing countries.

What is sometimes not adequately grasped, however, is the sheer range of inequality in today's fast-growing developing countries. Measured on a global scale, the gap between the richest and the poorest is much wider in China, India and other fast-developing countries; the distance a person has to travel from the bottom to the top decile of the income distribution is much longer compared to either the richest or the poorest countries in the world.

Figure 1 illustrates these issues with a series of country streamgraphs. The horizontal axis is arranged by successive deciles of world wealth distribution. The poorest people on the planet (in terms of wealth) are depicted towards the left while the wealthiest are depicted towards the right. A selection of countries is shown on the vertical axis.

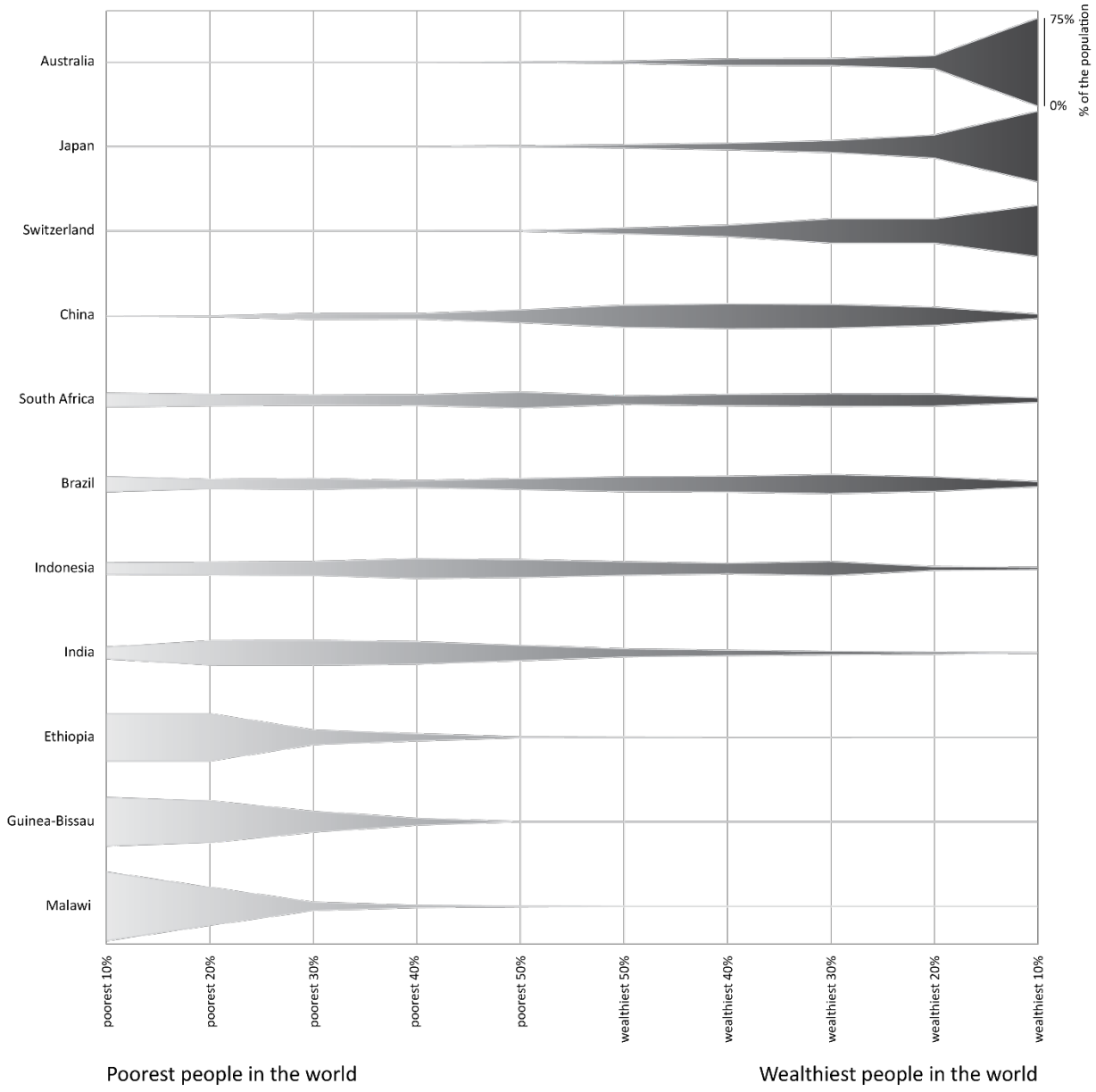
The width of a country's streamgraph at any particular point depicts the share of its population that belongs to the corresponding decile of world wealth distribution. If a large share of a country's population belongs to the world's wealthiest 10 percent of people, its streamgraph is fattest on the right side. Conversely, the streamgraph is thick towards the left when the largest share of a country's population falls within the world's poorest 10 percent.

Notice how almost the entire populations of Australia, Japan and Switzerland fall within the top 50 percent of world wealth distribution, with more than half of people there belonging to the wealthiest 10 percent. This is no surprise, since these are high-income countries. In low-income countries, like Ethiopia, Guinea-Bissau and Malawi, the entire population is contained within the world's bottom 50 percent.

The streamgraphs of China, India, Indonesia, South Africa and other fast-developing countries are more complex, however. Every decile of world wealth distribution is represented within these countries. Many of the world's poorest people are found within them, along with many of the world's richest, numbering in the millions.

The wide range of inequality affects the social fabric adversely and has implications for social mobility. "Understood as movement from a lower to a higher level of education or occupational status, or from a lower to a higher social class or income group" (Iversen, Krishna and Sen 2021), social mobility has been on the decline around the world (OECD 2018; World Bank 2018) leading to concerns about social stratification and social stability (Atkinson 2015; Wilkinson and Pickett 2009).

Figure 1: How wealthy or poor are the people of different countries?



Source: Adapted from Krishna 2017 based on data from the *Credit Suisse Global Wealth Report 2013.*

In relation to Figure 1, the social mobility an individual achieves can be measured in terms of the distance she is able to travel from the left to the right of the streamgraph. When many individuals move from left to right, overall mobility is high, and inequality may be reduced. Along with progressive taxation and welfare policies, promoting social mobility can be an important policy tool for reducing inequality, especially inequality of opportunity.

The wider range of inequality that exists within fast-developing countries indicates, however, that achieving an equal degree of social mobility is harder there compared to other countries. The distance an individual needs to travel to move from the first to the fourth quintile within her own country is much longer in India and Indonesia than in Australia, Japan, Malawi or most other countries. The fact that social mobility has been found to be lower in Brazil, China and India (compared to Western Europe and North America) may have something to do with the underlying unequal distances in each country associated with equal increments in the measure of social mobility (Bian 2002; Dunn 2007; Iversen, Krishna and Sen 2019; World Bank 2018).

Social mobility and equality of opportunity

The ideal of equality of opportunity—the normative belief that equally hardworking and talented individuals should be able to rise as high, no matter if they are men or women, rich or poor, rural or urban—lies at the heart of the study of social mobility. There is a close association between income inequality, social mobility and equality of opportunity. Inequality of incomes tends to be higher in countries with low social mobility, a relation known as the Great Gatsby Curve. This depicts a frozen social structure in which "the poor are more likely to see their children grow up to be the next generation of the poor, while the rich are more likely to see their children remain at the top rungs of the economic ladder" (Corak 2012). In less unequal countries, there is more fluidity in the social structure, and the children of poor people are more likely to rise into the highest parts of the economic ladder.

Inequality of opportunity seems to be the intermediary variable between low social mobility and high inequality (Roemer 2000, 2004). If higher inequality makes intergenerational mobility more difficult, it is likely because opportunities for economic advancement are more unequally distributed in highly unequal societies (Brunori, Ferreira and Peragine 2013; Esping-Andersen 2005). Unequally distributed opportunities and low social mobility can adversely affect the pace and pattern of economic development. Growth can slow as talented individuals do not connect with commensurate opportunities, and a dualistic pattern of development can result, as observed, for instance, in Brazil of the 1970s (Berg and Ostry 2011; Corak 2013).

Different measures of social mobility have been constructed that relate to alternative measures of individual achievement. When the underlying measure is wealth, as in Figure 1, the related notion is that of wealth mobility. When the base measure is related, instead, to income or education or occupational status, the resultant social mobility measure is that of income mobility, educational mobility and occupational mobility, respectively. Each of these measures can be studied in terms of the advances that a child is able to achieve over her parents (intergenerational mobility) or in relation to the advances she accrues in her lifetime (intragenerational mobility).

Measures of absolute mobility consider the quantum of change that an individual experiences compared to her parents (or to her starting position). Alternatively, relative mobility measures compare the change achieved by one individual or group with that achieved by another group or with the average change experienced by all individuals.

Different perspectives on equality of opportunity emerge when one looks alternatively at figures for absolute and relative mobility. A 10 percent increment over his father might seem like a fortunate outcome for a particular individual, until he finds that others like him have achieved, on average, a 20 percent increment over *their* fathers.

Traditionally, measures of social mobility have tended to be data intensive. Decades-long panel data sets have been constructed that enable these calculations in the West, comparing the incomes of fathers (calculated at the time when these fathers were of at peak earning ages) with the incomes of their sons calculated many years later (when the sons had grown to be the same age). These long-period studies have showed that societies vary considerably in relation to equal opportunity and social mobility. There is greater fluidity in Scandinavians' relative income positions, for instance, and greater rigidity and stratification in the United Kingdom and United States (Corak, Lindquist and Mazumder 2016; Jantti et al. 2005; OECD 2010).

Such long-period data sets are not yet available in developing countries, making the calculation of intergenerational income mobility difficult in these settings. In some developing countries, fathers' incomes are being tabulated now but it will be many years before their sons reach the same age. Until then, using conventional methods and measures, not a great deal can be concluded about income mobility in developing countries.

Several non-conventional methods have been developed that help generate important knowledge about different aspects of social mobility. Educational mobility has been studied with the help of recall data from adult children about their own, and their parents', education levels. Since the vast majority of individuals stop formal studies after a certain age, and since education levels do not vary nearly as much as income levels, reliable measures of educational mobility have been obtained by using recall data in this manner (e.g., Azam and Bhatt 2015; Emran and Shilpi 2015; Torche 2010). Separately, shorter period data sets, compiled in India, South Africa and some other developing countries, have been used to compare the incomes of present day sons with those of 'synthetic' fathers generated statistically using advanced econometric methods (e.g., World Bank 2018). Some research has looked at small groups of families, studying them over extended periods of time (Moser 2009; Perlman 2011). Still other research has utilized different methods, looking, for instance, at 'source-destination patterns' (Fuller and Narasimhan 2007; Krishna and Brihmadesam 2006; Upadhya 2007): Where do young people from a particular community typically end up? Which communities are well represented in higher-paid occupational streams and which communities are underrepresented? A different

method, outlier analysis—learning from the examples of exceptional individuals—has also helped gain a better understanding of key stumbling blocks and ways in which they can be overcome or avoided (Krishna 2013). Examining the modus operandi of non-governmental organizations (NGOs) that actively promote social mobility has helped assess the extent to which interventions of different types are helpful (Krishna and Agarwal 2017). Another group of studies has used surnames to trace father-son connections across generations (Clark 2014).[1]

Relying on a variety of such unconventional methods, researchers have come to the preliminary judgment that social mobility is lower, and stratification and rigidity are higher, in developing countries, in general, compared to industrialized countries.[2] Despite rapid economic growth, only a few people from the left-hand side of these countries' streamgraphs have been able to move significantly rightward over time and across generations. The combination of high growth rates and low rates of social mobility has led to widening inequality in many developing countries.

Influences on social mobility—basic and advanced capabilities

In addition to other redistributive and welfare measures that can help curb rising inequality, more effective investments are needed for promoting social mobility. Identifying these investments is a work in progress. Research into factors that significantly help or hinder social mobility is at an early stage in developing countries. There is a longer tradition of social mobility research in industrialized countries, however. Drawing on a survey of this literature, Figure 2 brings together important influences at different stages of an individual's life cycle.

Figure 2: Factors associated with social mobility during the life cycle

Early childhood *Building a foundation*	**School years** *Learning and exploring*	**Young adulthood** *Deciding and investing*	**Working years** *Working and earning*
• Healthy parents • Low stress, clean environment • Accessible health care • Nutritious food • Nurturing caregivers	• Accessible schools • Quality teaching • Focused peers • Help with homework • Extracurricular opportunities • Supportive, diverse and inspiring community	• Accessible higher education • Internships and apprenticeships • Scholarships • Information • Role models • Social networks • Career ladders	• Career ladders • Opportunities for updating skills • Merit-focused employers • Accessible job postings and hiring criteria • Conditions of informality • Referral networks

Source: Adapted from Krishna and Nolan 2019.

[1] These and other studies of social mobility in developing countries are reviewed in Iversen, Krishna and Sen 2019.
[2] Two recent volumes that provide initial inter-country comparisons are OECD 2018 and World Bank 2018.

In addition to factors identified by industrialized country research, some others are contextually important in developing countries. First, compared to the West, a much higher share of the population in many developing countries is employed in the informal sector,[3] which is where child labourers are found, minimum wage laws go unimplemented, and there is little by way of health benefits and safety measures. Moving from the informal to the formal sector can be the most critical part of an individual's journey of social mobility in such contexts. Another factor has to do with a widening spatial divide between rural and urban areas. In many developing countries, infrastructure and services have flowed into the largest cities, and rural areas have fallen behind. Aids to social mobility, such as decent quality education, accessible libraries, well-staffed health centres, tarred roads and broadband connections, that city residents often take for granted are missing or underprovided in remote rural areas. Stubborn pockets of poverty are quite often located in these areas. It may not be equally salient in every country but the rural-urban difference is important to consider while investigating social mobility in developing countries (Alesina et al. 2021; Fan, Yi and Zhang 2021; Ferré, Ferreira and Lanjouw 2012; PRB 2015; Kanbur and Venables 2005; Krishna 2017). A third contextually important factor relates to downward mobility, which can be more prominent in many developing countries but is not as common in the West (except for countries with weak safety nets, such as the United States). Falling into poverty is a frequent occurrence, particularly where quality health care is hard to access and expensive (Deaton 2013; Krishna 2010).

Notice how the vast majority of contributory factors depicted in Figure 2 relate to individual capacities and human development. This evidence makes clear how investing in human development is important for promoting social mobility.

The *2019 Human Development Report* introduced an important distinction between basic and advanced capabilities. Basic capabilities include primary and secondary education and decent health care. Advanced capabilities include college education, access to technology, etc.. The correspondence is far from exact, but Columns 1 and 2 in Figure 2 relate more closely to basic capabilities, while Columns 3 and 4 are more closely related to advanced capabilities.

As societies become more specialized and technically complex, investments in basic capabilities will not be enough for achieving significant social mobility. The age of assembly-line manufacturing is nearly over; increasingly sophisticated production techniques, incorporated in vast global chains, are raising the capital intensity of production globally. Advancing technologies have decreased demand for less-skilled labour while increasing demand for individuals with advanced capabilities. Over the longer term, analysts expect the biggest effects of skill-biased technological change will be felt not in the industrialized world but in developing

[3] For instance, 75 percent of the non-agricultural work force of Bolivia is in informal employment, 73 percent in Indonesia, 82 percent in Mali, 70 percent in the Philippines, 69 percent in Uganda and Zambia, and 68 percent in Viet Nam (ILO 2012).

countries, where openness to trade has already gone together with a widening gap between the wages of workers with and without advanced capabilities (Brynjolffson and McAfee 2014; Carr 2014; Ford 2015).

Growing numbers of young people are facing disappointments for these reasons. After spending more years in school than their parents spent, today's young people are finding that educational investments they have made are no longer enough to get a good job. The threshold at which education translates into higher earnings has been rising concurrently. Ever greater investments in education are required in order to achieve the same amount of social mobility. The 'college-premium'—the difference in average earnings between those who have a college degree and those who do not—has increased across both industrialized and developing countries (Hanushek and Woessmann 2008; Heckmann 2011; Kaplan and Rauh 2013). The result is that ever greater investments are required in advanced capabilities. These investments are necessary for making the workforce more broadly prepared for new ways of doing things.

Investments in advanced capabilities are essential if individuals are to have a chance for significant social mobility. In addition, I will argue, multiple accessible career ladders are necessary.

Advanced capabilities and career ladders

Consider the questions: *How* does someone end up getting a higher income? What is the process that leads to the acquisition of these gains? While it may be possible for some few to achieve significant social mobility through the happenstance of coming into an inheritance, because of a favourable marriage or through a chance event, like winning the lottery, for the majority of individuals, social and economic advancement is a slow slog that occurs over a lifetime and involves climbing a career ladder.

Typically, people choose a career and advance up the rungs of a more or less well-defined career ladder. In the typical career stream of a college professor, for example, getting a PhD is the first rung, followed by gaining a position of assistant professor, and then, after gaining tenure, usually about seven years into the process, ascending, successively, to associate professor, full professor and distinguished (or chaired) professor. Other streams have different rungs in their career ladders, for instance, those of doctors or lawyers. In each case, once having joined a career stream, individuals advance up these. Each rung can be thought of as a set of clear and well-regulated opportunities that enable individuals to climb higher along their chosen career paths. Higher incomes are earned after climbing to each successive rung, and occupation status rises the higher up

one goes.[4] There is usually no other way to achieve social mobility in a modern society. Social mobility therefore very largely depends on the availability of career ladders.

In whichever walk of life one looks at—start-up entrepreneurs, record-setting athletes, world-class musicians, award-winning novelists, etc.—social mobility advances are made by climbing a career ladder. In some cases, the ladder is better defined and more easily accessible. In other cases, there could be broken, parallel or unfinished rungs in a ladder.

Higher performance, according to recognized standards, helps one lay claim to a higher rung of one's career ladder. Winning your event at the school athletics meet takes you to the county championship, winning there takes gets you a place at the state competition, which is where you have to perform well in order to make it to the national and international levels.

The existence of a ladder is necessary but not enough. The nature and accessibility of the ladder matter too. Not all career ladders are equally open to all comers. Some are narrow and have entry requirements that few can achieve or are accessible only to privileged insiders. Discriminatory laws and customs have debarred large segments of the population: Women, people of African descent, migrants, ethnic and religious minorities have been kept away from certain ladders.

Examining prospects for social mobility in a society requires tracing the shape and understanding the internal dynamics of available career ladders. Sometimes, only a few ladders are enough for achieving high levels of social mobility, if these ladders are effectively open to all comers. Ideally, though, since individuals have talents of different kinds, multiple career ladders need to be in position.

Programmes of skills development, on-the-job training, vocational education, etc. can also serve as viable means for promoting mobility, but the vision is restricted and mobility of a very limited kind is achieved. The presumption seems to be that this is better than nothing. A fully developed career ladder, on the other hand, with rungs reaching down to the grassroots and up to the highest levels, allows no limits on upward mobility. A child of a poor farmer, if she is talented and hardworking, can rise to play in the world's best orchestras and not have to eke out a living as a seamstress or street musician. The career ladder notion subsumes and goes beyond the skills agenda. Some children will, of course, not make it higher than the first or second rung, and

[4] In terms of the previous discussion, the concept of mobility most closely associated with career ladders is occupational and intragenerational mobility, though as people tend to go up career ladders their incomes also rise and they acquire greater human capital. The notion of a career ladder is related to but wider than that of a job ladder, defined as a series of jobs within an organization with increasing levels of responsibility. Progressions in career ladders more typically follow levels of achievement or tiers of competition and can involve moves from one organization to another.

they will have to be content playing with the local orchestra or look for a different career. For those who are more capable, however, there should be no reason to stop after reaching some intermediate level.

Two questions are especially relevant while examining the social mobility outcome of an individual. First, what kinds of career ladders were visible and accessible to this individual when she was growing up? Second, did she have what it takes, in terms of basic and advanced capabilities, to climb past the successive rungs of a career ladder?

The second question, about capabilities, has deservedly received policy attention. The first question, concerned with the availability of career ladders, has been relatively ignored, even though, these questions are like simultaneous equations that must be resolved together.

There is an essential interplay between advanced capabilities and well-articulated career ladders. Increments in these concepts are interrelated. Investments in advanced capabilities remain underutilized and unrewarded in the absence of career ladders with higher-level rungs. Vice versa, investing in higher rungs is futile if individuals are not available with the advanced capabilities required to reach them.

Well-developed career ladders and advanced capabilities are complementary. In practice, it is not clear which comes first and which comes after. Advanced capabilities are frequently acquired as part of moving up the related career ladder. Senior medical doctors acquire specialized skills through residencies and fellowships undertaken on the job; rising writers join retreats and workshops organized by associations of writers; talented musicians are invited to join higher-level conservatories; companies have in-house training programmes for rising executives. We can multiply these examples by looking within other career ladders.

Understanding career ladders from the ground up

Individuals' social mobility as well as societal progress are critically dependent on the nexus between advanced capabilities and career ladders. The nature of this relationship needs to be better investigated.

To understand at a more basic level the importance of career ladders in individuals' lives, consider the hypothetical example of two young people growing up in a North Rift Valley village of Kenya. One is a talented long-distance runner while the other is a talented mathematician and chess player. The Rift Valley is well known for its long-distance runners; it is home to many of the world's champion marathoners, such as Eliud Kipchoge and Mary Keitany. A career ladder for runners is well developed in this region and has been in existence for many years. A network of local contests helps identify new and rising talents. There are many running groups and talent scouts, coaches, managers and agents. Current and former champions serve as role models for future runners. No such infrastructure has existed for chess players, however.

Consider what is likely to happen to our two young individuals. Before she is too old, our young running talent will likely be spotted at one of the many local races that take place regularly in this region. Unless she is very unlucky, she will attract the attention of coaches and managers, who will help steer her up the ladder that leads to world-class successes. With luck and hard work on her side, talent will be rewarded with commensurate success. She will achieve a great deal of well-deserved social mobility.

But what of the other young person with the potential to become a world-class chess player? No world champion chess player has so far come out of the North Rift Valley, and no career ladder is available for someone who has the interest and the potential. Unlike running, for which an elaborate infrastructure of support has been brought into existence in this region, no support, guidance, role models or career prospects are visible for someone who wishes to be a chess player. Despite having the talent, it is highly unlikely that our chess player will achieve much social mobility. She has the potential to advance socially and economically, but the absence of a career ladder is sure to blunt this potential. The same is likely to be the case for many others in the North Rift Valley. There are no visible and accessible career leaders for talented musicians, writers, engineers, and, until recently, cyclists and chess players.

I refer to the Rift Valley as an exemplar of missing career ladders that persists more widely in developing countries, with the notable difference that in the Kenyan case, there does exist at least one case of a world-class career ladder. The presence of this infrastructure of support makes for a situation where a child growing up in Kenya who aspires to be a world-record-beating long-distance runner is much more likely to achieve her ambition than another with similar talent in Cambodia or Mali, for instance.

Consider now what might have happened if the same children were growing up, instead, in Canada or Sweden. Diverse career ladders exist in these countries that give rise to multiple opportunities for individuals with different talents. For a Canadian or Swedish child who has a talent for music or painting or scientific invention, the likelihood is higher than for an equivalent Ghanaian, Guatemalan, India or Kenyan child that her talent will be identified, groomed and rewarded, and set upon a career ladder that has rungs leading down to the grassroots *and* up to the highest world-class status. Initial evidence provides support for this supposition. No matter which walk of life you look at—music or science or creative writing or diplomacy or medicine or investing—you almost invariably find Canadians and Swedes among the world's top 100 performers.

The average child in Ghana or Guatemala is not born less talented than the average child in Canada or Sweden, but the child born in the former faces a very different situation. It is less likely that the talent she has will be identified and developed, or that she will gain a foothold on a career ladder that reaches up to the highest levels in the world and acquire the advanced capabilities that she requires. That is an important reason why despite having similar population sizes, Ghanaians do worse than Canadians (and Guatemalans do worse than

Swedes) on multiple indicators of human achievement, be it Olympic medals, research patents, businesses registered or top-10 albums.

Of course, economic growth, infrastructure and human development, and social welfare policies are essential, and these, too, differ widely between Canada and Sweden, on the one hand, and Ghana and Guatemala, on the other hand. It is not clear, however, whether economic growth and infrastructure development, social investments and welfare systems, or career ladders represents the pre-eminent way to achieve a just and growing society. In fact, they are like three legs of a stool; none of these three sets of policies is unimportant or unrelated. Growth is necessary to fund social investments. Social investments are necessary to develop the people who will fuel growth. And career ladders are necessary for matching individual capacities with specific positions; without them, too much of a country's talent pool will end up underproducing. While the first of these elements, growth, has long been emphasized as the sine qua non of development, and more recently, social development and social welfare are being justly emphasized, the third leg of the stool, career ladders, needs much more emphasis in the future.

The existence of multiple accessible career ladders in high-performing countries helps link talent with commensurate opportunities, leveraging the advantages of social development, and enabling much higher collective achievement. For countries to develop, and for their people to move higher, it is essential to invest in multiple career ladders.[5]

Investing in career ladders

In addition to other and better known public investments, such as roads, bridges, universities, hospitals, stock exchanges, etc., countries need to invest in career ladders. These investments are necessary for promoting social mobility and making progress towards equality of opportunity.

It could be argued that developing countries do not as yet have the resources to invest in multiple accessible and well-developed career ladders. The argument runs up, however, against the weight of the evidence: Numerous developing countries have successfully built world-class career ladders.

Research is helping uncover how countries that have achieved world-class successes in some endeavour have invariably invested in building a widely accessible and well-articulated career ladder. Many individuals have been able to make considerable gains in wealth and social status that they would not have achieved if these opportunities had not been made widely available. The case of Jamaican short-distance runners, provided in Annex 2, illustrates these points. Kenya's career ladder of long-distance runners is another stream of

[5] For some illustrations, see Annex 1 on an approach to comparing career ladders.

excellence. Exemplary career ladders have been built as well within many other developing countries. Nigeria's stream of excellent novelists, Estonia's software start-ups, Guatemalan and Venezuelan classical musicians, and women golfers from the Republic of Korea are other notable examples.

Career ladders can be, and have been, built deliberately. Nothing is random or foreordained about their creation. Even where genetics and geography confer an advantage, these factors are not determinative. A talented young singer or a genetically well-endowed marathon runner does not simply rise to stardom out of the blue, not multiple times within the same country, and not in today's era of enhanced competition. Factors related to culture, geography or genetics can be part of the explanation, but these factors matter more in some cases and very little in others.

Each case has certain elements of institutional architecture in common, with achievements depending on a framework of organizations and actors, each responsible for keeping different parts of the career ladder in good condition. Understanding how these organizations operate and unearthing the design principles of career ladders can provide guidance useful for building other career ladders.

Some design principles have emerged from investigating different cases. First, each flow of excellence is accompanied by an open-access career ladder. The lowest rungs are accessible to all comers. People move up only by virtue of performance and ability. A second shared feature is that diverse actors have been involved in bringing each career ladder into existence; there is no centralized plan or unified administration. Civil society and volunteerism are critically important components. Correspondingly, a third feature is a mix of motivations. Certainly, individuals wish to advance themselves, but there is also a great deal of mutual support and other-regarding behaviour. Fluidity and adaptability are other shared elements of excellence-producing career ladders. Each has an evolving set of links that keep adapting to changing conditions. See Annex 2 on the case of sprinters from Jamaica. Additional learning from remaining cases will help develop these design principles more completely.

ANNEX 1

AN APPROACH TO ASSESSING CAREER LADDERS AND IMPACTS ON NATIONAL ACHIEVEMENT AND SOCIAL MOBILITY

With Sanjeev Dasgupta and Sarah Nolan

Assessing career ladders directly can be difficult, time consuming and resource intensive. How many are there in a country? How tall and how broad is each of them? How widespread are the points of access? Mapping all of the ladders that exist may not be necessary for some purposes, however.

For broadly comparing career ladders in different countries, one can consider an indirect measure. For diagnosing weaknesses, another set of comparisons can be useful. Both measures are more useful to the extent they are reliable, easy to understand and cost-effective by making use of available indicators. This paper discusses proposals related to each of these objectives.

The first proposal is for a gross measure that ranks countries according to a portmanteau variable related to career ladders. The thinking here is as follows. Some countries have better career ladders and are therefore able to make better use of their talent pools. This better utilization is reflected in diverse indices of collective achievement. By looking at different indices of collective achievement we should be able to gain a good idea of the length, breadth and accessibility of career ladders. Krishna (2017) presented the first well-known exploration of this hypothesis, comparing four kinds of collective achievements. For *sports*, he looked at the number of medals won per million people over six Olympic games (1996-2016).[6] For *innovation*, he considered the number of patents registered per million people over a six-year period (2010-2015). For *entrepreneurship*, he used data on the number of new businesses registered per million people (2010-2015).[7] For *research*, he considered the number of citable research publications per million people (2010-2015).[8]

There is nothing sacrosanct about these four domains. Other indices can be generated considering other kinds of collective achievement. It is expected, however, that these indices will be closely related to each other, indicative of a common underlying national commitment to career ladders. For the illustrations presented below, in addition to the four achievements listed above, a fifth collective achievement related to arts and culture was considered—nationally produced films released per million persons.[9] Other measures and modifications of measures can be developed using other cross-nationally comparable data.

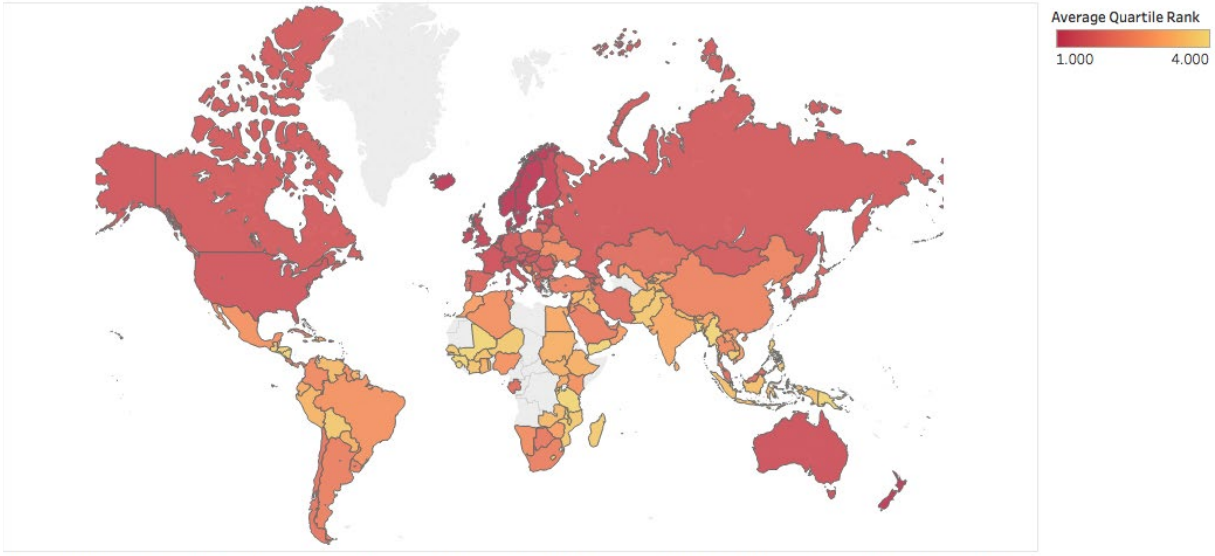
[6] Olympic medals per capita can be accessed at: www.medalspercapita.com.
[7] Data for both indices are sourced from the World Bank's World Development Indicators at: https://data.worldbank.org/indicator.
[8] Data for this index come from the SCImago Journal and Country Rank at: www.scimagojr.com/countryrank.php.
[9] UNESCO Institute for Statistics: http://data.uis.unesco.org/.

Countries' quartile ranks were combined. For example, if Country A ranks 23 for a particular index and this places it in the top quartile for that index, Country A is given a quartile position of 1 for that index. If Country B ranks 96 in the same index and is in the third quartile, then it is given a quartile position of 3 for the index. The first summary measure is the average quartile position of a country across all five indices. For example, if Country A's quartile positions are 1, 2, 2, 1 and 3 across the five indices, its average quartile position is 1.8. While there are more than 190 countries included in the initial data collection process, the final distribution only lists countries that have data for at least three of the five indices included in the study. This comes to a total of 168 countries.

Map 1 shows how countries stack up against each other on this summary aggregate national measure of career ladders. A darker red colour represents relatively high availability of career ladders, resulting in higher aggregate national achievement per unit of population, while a lighter yellow colour represents low availability of diverse career ladders.

Map 1

Relative Social Mobility Around the World



This map shows the relative distribution of social mobility around the world. The numeric values are based on an average of the quartile ranks across all available fields for the countries that have information available for at least three indicators. An average rank of 1 indicates highest social mobility and is represented by the color red. An average rank of 4 indicates lowest social mobility and is indicated by the color gold.

This map, representing a particular way of exploring career ladders, suggests a split between richer and poorer countries. In Europe, particularly in Northern and Western Europe, the availability of the particular career ladders considered here is relatively high. Latin America lies somewhere in the middle of the spectrum, with most countries in the dark yellow to orange range. South-East Asia also lies somewhere in the middle, although there is a great deal of variation in this region, with Malaysia at the high end and Myanmar and Lao People's

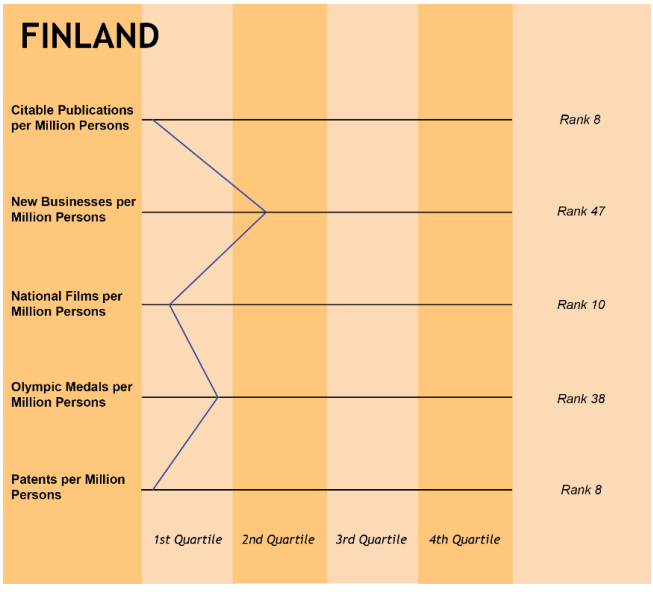
Democratic Republic in the light orange range. South Asia lies further below in the yellow to dark yellow range. Africa has almost uniformly low scores, although Botswana, Gabon and Tunisia do considerably better.

This is only one way of constructing aggregate national scores, however, based on achievements in certain walks of life. By considering other kinds of achievements, say, in literature, music and mathematics, other indicators of underlying career ladders can be developed.

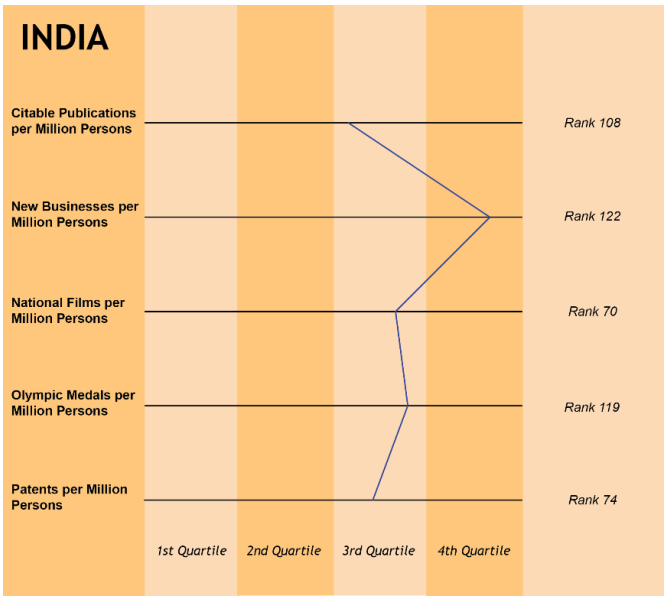
A different diagnostic tool uses a graph depicting a categorical measure. The shape of the graph for a particular country can help generate useful hypotheses about its career ladders. This examination involved classifying countries into five types, based on their quartile positions across the five indices:

1. Type A—countries that have a quartile position of 1 or 2 across all indices.
2. Type B—countries that have a quartile position of 1 or 2 across all but one index.
3. Type C—countries that have a mixed range of quartile positions, i.e., have roughly the same number of 1 or 2 quartile positions and 3 or 4 quartile positions.
4. Type D—countries that have a quartile position of 3 or 4 across all but one index.
5. Type E—countries that have a quartile position of 3 or 4 across all indices.

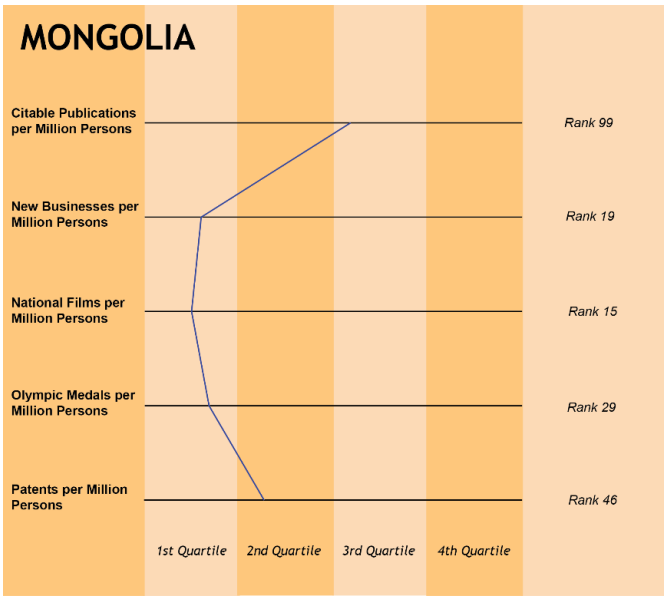
The salience of these types becomes clear when looking at the graphs for particular countries. Consider the following comparison between Finland (Type A) and India (Type E). The shape of each country's graph is revealing.



Finland consistently performs well on each indicator, placing in the first quartile for four out of five indices and in the second quartile for the remaining one. A similar graphic for India paints a parallel but opposite picture. India places in the third quartile for four out of five indicators and in the fourth quartile for the fifth one. A Type E country, India has among the lowest scores on these career ladders.



While the Type A graphic for Finland and the Type E graphic for India are straightforward indicators, respectively, of commonly strong and commonly weak career ladders, more interesting are the graphics that are not so uniform or straightforward. Consider Mongolia (Type B), which performs relatively well on four out of five indicators. On one indicator, citable publications per million persons, it ranks in the third quartile, which is poor in comparison.



This anomaly is worth exploring in relation to the underlying career ladders. Does Mongolia's superior performance in relation to Olympic medals, particularly in the wrestling and weightlifting events, imply that the country has a dense and hierarchically arranged network of weightlifting clubs and wrestling academies? Can any child join in these sports and move up to higher levels based on his or her performance? Correspondingly, is the country's much lower collective achievement in terms of published research explained by weak career ladders? How many children growing up in Mongolia can realistically aspire to become research scientists? Are there vibrant role models of scientists and researchers? These are the kinds of research questions that emerge from considering this graph.

Considering career ladders in this manner provides another diagnostic tool, a means for assessing the relative strengths of diverse career ladders. It helps identify points where future investments will be required.

ANNEX 2

CASE EXAMPLE. BUILDING A CAREER LADDER IN JAMAICA

Source: Anirudh Krishna, 2018, "Sprinting up the ladder in Jamaica," *Excellence and Opportunity,* chapter 2.

Compared to richer countries like the United States, France and Great Britain, poorer Jamaica wins many more Olympics medals per million people. Its 2.7 million people won 12 medals at the 2012 London Olympics, a winning rate of more than 4 medals per million people. In comparison, the United States, with 313 million people, won 104 medals, a winning rate of one third of a medal per million people. The per million medal winning rates for France and Great Britain were one half and 1, respectively.

Jamaica is special in this regard. Three of the ten fastest timings for the 100-meters race have been recorded by Jamaican men and women.[10]

What accounts for this stellar achievement by a small developing country? One strand of opinion traces Jamaica's athletics success to genetic factors. The vast majority of modern-day Jamaicans are descended from slaves brought from West Africa to work on the island's farms and plantations, Hubert Lawrence, journalist and author of two well-regarded volumes on track-and-field in Jamaica, informed me; the ancestors of present day Jamaicans came, not from East Africa, where people tend to be tall and svelte and made for long-distance running, but from West Africa, where there is a different genetic pool and where people have a different physical structure: they are stockier and quicker. Slaves brought from these populations endured a long and hard Atlantic passage that only the toughest survived; the death rate was horrendous. Their progeny rebelled, broke their chains, and ran off to hide in the hills. They moved into the most remote and inhospitable areas, including Cockpit County, a rough and hard-to-access region in the interior of the country. To this day, a disproportionately large number of Jamaica's star runners come from this region. Scientific measurements give credence to the theory about the prevalence of "fast-twitch muscles" among Jamaicans, especially in the region around Cockpit County. Twitch muscles, the result of a genetic trait, produce bursts of concentrated energy.

Other knowledgeable people feel, however, that there is much more to it than simply genetics. Florette Blackwood, senior director for sports in the country's government, informed me, for instance, that "It's not only Jamaicans that have the twitch muscle." Other people with a foot in the West African gene pool have them, too, as do the parent populations in Africa. Why don't populous countries with the parent gene pools – Ghana and Côte d'Ivoire and Sierra Leone, she argued – outdo tiny Jamaica at sprinting competitions?

[10] Usain Bolt, who set the world record, in 2009, by running the one-hundred meters in 9.58 seconds, Asafa Powell, who has the third-fastest time in this event, and Donovan Bailey, who has the fifth-fastest time; and Shelly-Ann Fraser-Price, Merlene Ottey, and Kerron Stewart, who have run one-hundred meters in the third-, fifth-, and seventh-fastest times recorded by women

Vilma Charlton, former Olympian and vice-president of the Jamaica Athletics Administrative Association (JAAA), put it this way: “Even if Jamaicans were genetically predisposed to be top-tier sprinters, there has to be a catalyst of sorts that triggers the particular gene.”

That catalyst is provided by a ladder of institutions that was built up over many years, in bits and pieces, by multiple actors and organizations working largely independently from one another. Each rung of the ladder helps identify and promote sporting talent. Having access to such a ladder makes the transition easier between raw talent and trained perfection.

Building the career ladder

Jamaica’s runners started winning Olympic medals in 1948. At the Rome Olympics, Arthur Wint and Herb McKenley placed first and second in the 400-meters race.

These early sporting achievements acted as the spur that led to investments in a number of institutions. Notable among the early architects of these sporting institutions in Jamaica are G.C. Foster, a sprinting star who was winning international competitions at the start of the twentieth century, and Norman Manley, an outstanding schoolboy athlete and national record holder, who later became the first prime minister of independent Jamaica.

“Manley understood that apart from having natural abilities you needed a framework for it, a formal structure, particularly if you are looking to win at the international level,” explained Mike Fennell, president of the Jamaica Olympics Associations for forty years between 1977 and 2017. “Manley ensured that the structure was there. Along with some of his colleagues, of course. He was not alone in building the structure.”

Important rungs in the ladder of institutions that now govern track-and-field in Jamaica were built after Manley came into office, but other rungs had been brought into existence even earlier. Champs, the national competition for boys and girls, had started in 1910; and annual sports days in schools had been around for much longer.

The first rungs

Talent identification and development begins early in Jamaica, explained Warren Blake, president of the Jamaican Athletics Administrative Association (JAAA), the national governing body for track-and-field. Blake is an orthopedic surgeon who has served JAAA as a volunteer for many years.

Every child in Jamaica, he claimed, is provided, from the age of four, with the opportunity to showcase her or his talent. “It starts with basic schools. These are kids who are five-six years old, and you'll see them running against each other. It is the desire to compete and to become a champion that our schools have fostered.”

Weekly development meets for schoolchildren are held during the country's regular track-and-field season, which starts in early December and goes through April of the following year. Children of all ages take part in these meets – those attending basic schools; those in primary schools (ages 6-11); those in "prep" schools (the privately-managed equivalents of primary schools); and those in high school.

Sports days in individual schools lead to the selection of schools' track-and-field teams that take part in district competitions, which help select the district teams that take part in parish competitions (there are 14 parishes in Jamaica). JAAA, the national athletics association ensures that these meets are organized on a careful schedule and held to exacting standards.

"Every year around September-October, the lull period, we draft the track-and-field calendar," Dr. Blake told me, "and every weekend during the competition season we have about four or five meets taking place in different sections of the island. At each meet we have over a thousand kids taking part. We see that standards are maintained. At each meet, you will have trained coaches and officials looking to see that IAAF [International Association of Athletics Federations] standards are maintained, and the measurements and timing equipment are up to scratch. JAAA has become a supplier of quality equipment. It is owned by us and rented out for a small fee to cover the cost."

The Jamaica Teachers' Association is in charge of organizing primary school meets at the district and parish levels, and an association of independent schools manages the equivalent prep school competitions. A national competition for primary schools and prep schools is organized annually by the Institute of Sports, a government organization. National and parish meets are intensely competitive, with athletes receiving a great deal of scrutiny and attention. National teams corresponding to different age-groups are selected to take part in international competitions.

High schools

High schools constitute a critically important rung of the ladder. Those who are seeking to make careers as professional athletes and have shown the commensurate talent, are usually brought within the fold of a "prominent" high school program.

These prominent programs are few in number, and their names are well known among islanders – Kingston College, Jamaica College, Calabar, St. Jago, Wolmer's, Manchester High, Homewood Technical, Edwin Allen, Excelsior, Munro College, and some others. Both at home and abroad, the prominent high schools are dominant. The Penn Relays is the largest track-and-field event in the United States, held for more than one-hundred years at the University of Pennsylvania. Jamaican high schools compete regularly and win many medals

One might think that running is cheap, and that would be true for rank beginners. However, a great deal needs to be spent on kit, equipment, nutrition, injury prevention, medical treatment, and other components of a first-rate track-and-field program.

Michael Clarke, the head coach of Calabar, one of the most prominent high schools, told me about the resources he needs to run his program: "There are people who are managers for the various areas of need for the boys: those who do nutrition, those who do medical assistance, those who do emotional distress, those who do academic success or academic distress… a wide variety of areas. And then you have the coaches. Even though I am the technical leader, we have those who do hurdles primarily; we have a throws coach, a jumps coach, sprint coaches... Persons who run the 100- and 200-meters require a different kind of attention from those who run the 200- and 400-meters, and those who do sprint plus hurdles, sprint plus jumps, those who throw the javelin, those who throw the discus, and those who throw the shot. You need specialized coaches for each of these combinations."

And that's not all. Keith Wellington, vice-president of the national association of high school principals, helped me understand how an entire support system is built around a first-rate track-and-field program.

"There is", he explained, "an entire community of persons who offer hope to the children in terms of helping them to develop, by trying to offer encouragement, because for a 13-year-old, there is a whole life ahead, and there is no guarantee that that child will become a successful athlete. So you have to ensure that whatever abilities the child has, those abilities are exposed, and you give them the opportunity to develop those abilities... If a child is weak academically, the school may find a tutor or mentor. If the child is from a poor socioeconomic background, then they may find an adoptive parent, who is able to help with the child's socioeconomic development. For example, Usain [Bolt], at age 16, was taken from his parents to live with a gentleman who took responsibility for his nurturing. There are many situations where the child goes and lives with a particular family, and those people become that child's second parents. Or the child lives with its own family, and a mentor takes responsibility to guide the child and provide support."

These are quite exception kinds of supports, indicative of a deep commitment to talent development. Young athletes who experience hardships are assisted by a robust support system that has been built to ease these transitions.

Who provides the resources to pay for these support systems? Staunch members of alumni associations. Without exception, the prominent programs have been fielded by high schools that are government-managed and run on very limited budgets. Contributions by loyal alumni make up the lion's share of these high schools' athletics budgets.

High-school loyalties are fierce in Jamaica. No more than a few Jamaicans above the age of forty have gone to college; there was only one university in the country until the 1990s. Many more Jamaicans went to high school, however, and that's where they acquired their abiding sporting loyalties.

Dalton Myers, former national coach and president of the inter-collegiate sports association, helped me understand the role of high-school alumni associations. "Accommodations, meals, rehabilitation facilities… all the different things that the school may not be able to do. It could be a house owned by the old boys' association or it could be that some old boy, a Dalton Myers, for instance, who has a 5-bedroom house, only uses one, and you know what, I can take four or five of those guys over to stay at my place, and I'll make sure that they're ok. A lot of the kids who are recruited are not from Kingston. They are from rural areas."

George Davis, the sportscaster and analyst, elaborated. "My school, has never won Champs and may never win Champs, because we're so small relative to the big ones. But even there, the people who used to attend contribute. I, myself, contribute to the track-and-field department. I buy gear. I assist with nutrition. Because I still want the school to be in the position where it can win once. If my school can win one gold medal at Champs, I would be the happiest man in the world."

Champs

The annual boys' and girls' championship – "Champs" – is regarded as the "crucible" of track-and-field talent in Jamaica. It is the largest and most widely watched sporting event on the island and among a wide diaspora.

The event came into existence in 1910. Since its beginnings, it has been run by people, like Keith Wellington, elected officials of ISSA, the national association of high school principals.

Champs is the most-watched sporting event in the country, drawing larger amounts in corporate sponsorships than professional competitions, according to Wellington. For five days in March, that's what everyone talks about in Jamaica.

Champs became a truly national event in 1999 when the boys' and girls' competitions, held separately until then, were combined into a single event. More than 200 schools and more than 2,000 athletes take part in this competition.

Stars are born at Champs. Brianna Lyston, a 12-year-old girl who set a new record, running the 200-meters in under 24 seconds at Champs, was hailed immediately by the national media as the Usain Bolt of the future. Bolt himself was recognized at Champs for the superstar he would later become. Arthur Wint and Herb McKenley, who medaled for Jamaica at the 1948 and 1952 Olympics, had also been earmarked for greater successes when they had won their events at Champs, Wint in 1937, and McKenley in 1940 and a year later.

Champs, as well as the regional meets, serve as the recruiting grounds for future performers. Younger athletes who wish to make a career of sports look for places in prominent high school programs. In turn, these programs are only too eager to snap up the most promising youngsters, and they send out scouts to look for emerging runners.

“The scouts here, they know when the track-and-field season starts, they know every development meet,” Davis, the sportscaster, told me. “They go and they look. And what they don't see, they'll ask the caretaker there, 'So, is there any other child who is not here, who you think I should have a look at?' Many of the people who do this [scouting for talent], they do it voluntarily. It is their mission to ensure that their school gets the best talent and is in a position to win Champs. It’s their *religion*.”

Training the trainers

The government of the country has contributed in many ways to the development of track-and-field, but it stays away (or has been kept away) from directly administering the entire system. It shares these responsibilities with independent bodies, like the JAAA with its army of volunteers, and with civil society organizations, including the association of teachers and the association of school principals.

Arguably the greatest contribution of the Jamaican government has been the setting up of a national sports college in the early 1970s. The G.C. Foster College of Physical Education and Sport, named after the star athlete, legendary coach, and visionary sports administrator – was established with the help of a gift from the Cuban government. Leighton Levy, a star at Champs in his day and now a sports analyst for the media, believes that the establishment of GC Foster College was a critical turning point for Jamaican athletics.

“Overtime, what you saw was the college producing lots of good high school coaches, who were now spread out from Morant Point to Negril Point in Jamaica. Now, not only were a handful of schools getting access to high-quality coaching, now almost every school in Jamaica has a good coach… These little obscure schools that nobody's ever heard of before are suddenly producing athletes, because of the prowess of the coaches. Petersfield High School has a newly emergent track-and-field program, for instance.”

I went to GC Foster College and met with Maurice Wilson, national coach and principal administrator. The college has grown in size and added programs, and was graduating between 60 and 80 athletics coaches annually, in addition to other sports professionals, such as sports and massage therapists, fitness instructors, sports psychologists, weight trainers, and turf managers.

“Most schools now have a trained physical education teacher,” Wilson informed me, “and most times they are from GC Foster.”

Coaches whose athletes win medals at regional competitions gain respect and a following in the country. Coaches whose teams win Champs have rock-star status. This a big part of the story of Jamaica's track-and-field success, according to Wilson. Jamaica's running tracks are mostly of a basic kind, made of packed earth and grass. Jamaica's coaches, however, regularly win awards from the international athletics federation. Only two individuals have won the international athletic federation's Coach of the Year award more than once, says Simon Preston, sports journalist. Both are Jamaican.[11]

Coaches help initially by spotting the talented individuals. Latoya Hinds-Brown, head coach of St. Hugh's School in Kingston, explained, "PE class is very basic, but when you are doing the basics in class you can see who can go past basic. We always recognize the talent from PE classes. And then we recommend that these individuals go try out for the team."

Grace Bourah, national coach for the under-15 age-group, was of the same view. "Even at the younger ages, a trained coach can detect the talent"

"It's easy," she added.

Extending the ladder – professional clubs and universities

Universities were few in number in Jamaica until recently, and universities' athletics programs were not as well regarded or as well-resourced as prominent high schools' athletics programs. In addition, no professional track-and-field clubs used to exist in Jamaica.

What was a budding athlete to do after completing high school? His or her best prospects lay in obtaining a fully-funded fellowship to an American university. Every one of Jamaica's Olympic medal winners through the early part of the 1990s trained overseas after graduating from high school.

Not every athlete who moved abroad did well – many dealt poorly with being away from their families – and not every athlete who could be a star was able to win an American university fellowship. That was the only way known at that time for moving higher up the ladder, however. Athletes who had the opportunity went abroad. Nothing different had been attempted.

Toward the end of the 1990s, a group of visionaries began to construct a new rung in the ladder of track-and-field institutions in Jamaica. They were seized with the conviction that the country could multiply its medal tally. Many times the number of athletes who were able to move abroad continued to live in Jamaica. This large untapped star potential had to be activated. Developing professional-level training facilities at home had

[11] Glen Mills and Stephen Francis.

become necessary – and it was feasible. A whole industry that thrived abroad could be brought home to Jamaica.

Jamaica's first professional track-and-field club – MVP (Maximizing Velocity and Power) – was born of this vision. Three individuals played architects' roles, according to Hubert Lawrence, the veteran journalist and sports historian: Dennis Johnson, the long-serving director of sport at the University of Technology (UTECH), Stephen Francis, the coach who Johnson hired for UTECH's track-and-field teams, and Bruce James, who brought the business acumen to this undertaking.

The core logic of the model they developed relies upon setting up a professional club in partnership with a college or university. Bruce James described how the thinking behind this model developed.

"We recognized that not every single one of our athletes was going to become a Shelly-Ann Fraser-Pryce or Elaine Thompson, or Asafa Powell or Usain Bolt," international stars from among the early cohorts trained by professional clubs. "And it's not fair to say to the others, 'Come and roll the dice with us professionally, and if you fail, you are now 23 years old, with no education and broken dreams.'" Instead, James thought to organize a club that ran in partnership with a university. Individuals coming to the club to train as runners would also take college classes, giving them something to fall back upon for making a living in the event they failed to make the grade as the world's fastest runners.

It was a daring vision that ran against the grain of conventional wisdom, James explains.

"Why we needed to create this option was because the result that was coming through the traditional system (of going overseas) was giving us, on average, three medals per Olympics. And the problem that we had to overcome was that many Jamaicans were convinced that three medals for a little country like Jamaica was great! Now, how do we dare say to Jamaicans that 'Ok, three medals for a country of our size might look good. But we believe that very much more can be achieved. We're not saying stop the process that generates three medal winners. Let's add to it another alternative that, we believe, could generate even more medals.'"

MVP was set up in 1999 and became functional in 2001. Racers Club was set up by Coach Glen Mills a year later.

The vision of these pioneers was soon vindicated. Jamaica's Olympics medals tally, which had remained stuck between 1 and 5 medals for 44 years between 1948 and 1992, swung upward. The spurt of successes began at the 2000 Sydney Olympics, where Jamaica won 9 medals, and greater successes were achieved in 2008, when Usain Bolt captured the world's attention.

It was noticed that Bolt trained at Racers. And that the other superstar of 2008, Shelly-Ann Fraser-Price, trained at MVP. Three other professional clubs were set up following these demonstrations.

At the 2012 London Olympics, Jamaica won 12 medals. Three of these medals were won by athletes who trained abroad – and three times as many were won by those who trained in Jamaica.

The bandwagon effect

The effect of this rush of successes on young Jamaicans was electric. According to Hubert Lawrence, the journalist and sports historian, "We now had walking around in Jamaica, the exemplars, and children who look up to Asafa or Shelly-Ann, now they know who they are. They might bump into Shelly at the supermarket. Or if you have a track meet, and you are warming up in the backfield, you might bump into Shelly-Ann or Elaine Thompson. And there's a source of inspiration.

"Earlier, such people used to go away and not come back. There's an inspiration now because you can *see* the person. Since 1999, because the production line is based at home, you can now bump into your hero at a track meet, warming up in the backfield, but also on the street, at the movies, at the supermarket, at the gas station, and you can now feel that well, you know, if that person could do it, so can I."

As vibrant role models have become increasingly visible, the level of interest and participation in track-and-field has exploded. Five times as many regional development meets were being held in 2019 as had been held 20 years earlier.

Many national teams come to Jamaica for training. Cynthia Cooke, awarded an Order of Distinction by the country's government, has been associated with Racers Club for many years. When I met her at the University of the West Indies where the club is based, she informed me that: "We had people from all over the world in the summer. We had teams from Slovakia, Australia and New Zealand, Brazil, Mexico, India. We have a program that's not just about the track, but we tell them about doping, drugs, nutrition, speaking, writing reports. It's about the development of the whole person. What would the runner need in order to function, not just on the tracks but as a person."

A humane approach to the trainee athlete – treating him or her as an individual with all of an individual's needs, and not just as a medal-winning machine – underlay what I commonly heard from leaders of the sport in Jamaica. This approach underlies the relationship that has been built between the track-and-field establishment and the corporate sector.

As ever larger numbers of superstars are coming out of the professional clubs, corporate sponsorship has grown by an order of magnitude. Shoe manufacturers and telecom companies provide support to athletes, sponsor the national team, and help underwrite the costs of regional and national competitions.

With the country's top athletes training at home new opportunities have arisen for higher-end sports businesses. David Riley, head coach of Excelsior College and president of Jamaica's association of track-and-

field coaches, met me at Technique Labs, an outfit he has set up that provides specialized services for elite athletes.

Riley led me on a tour of the place, which looks like a high-tech gym with dozens of machines. “We have over a hundred tests, and depending on what your interests are, what you're trying to develop, we put together a package, and we track those numbers throughout the season,” he explained.

A ladder out of poverty

A career ladder has been put together that grooms talented athletes in Jamaica and prepares them for international competitions. The rungs in this ladder – school sports days; district and parish meets; Champs; prominent high schools; professional track clubs and university programs – were built at different times and by diverse actors.

The ladder extends into the remotest parts of the island. “If you are born with any talent, then somebody, some trained coach, will spot you across the island,” asserted Warren Blake, long-time volunteer president of JAAA, the national athletics federation.

The development of a robust and fully articulated career ladder has given ordinary Jamaicans access to an opportunity for prodigious social mobility. Not everyone starting out has access equally to high-class training facilities, but once you have shown your mettle, the system pulls you into the parts that have the best coaches and the best training facilities.

“A lot of top athletes come from rural Jamaica,” Blake added. “They were spotted at the weekly meets and developed by our competitive system.”

You don’t have to be a rich kid or to live in a big city in order to become an athletics star in Jamaica. A large proportion of its track-and-field stars have arisen from within Jamaica’s poorest parishes; many grew up in difficult conditions.

Cynthia Cooke, Order of Distinction winner and former school principal, opined, “I don't know if it is directly proportional, but it seems that way. The ones who do very well are the ones who come from the lower socioeconomic sector.”

Michael Clarke, the head coach of Calabar, spoke of the runners on his squad who are from the rural parts and have lived in poverty. “The funny thing,” he said, “is that they are the ones who are the talent of the team. They are the backbone of the team in terms of talent and potential.”

Vilma Charlton, the sports administrator and former Olympian, elaborated. “A lot of the poorer kids gravitate to track-and-field: it’s an avenue for you to get out of poverty.”

The ladder of opportunity that exists makes it possible for ordinary Jamaicans endowed with athletics talent to make a viable career through the sport. The old tradeoff between running and studying – where one was fun and the other led to a career – has become less salient. Now, by remaining with athletics, you can expect to make a good career.

Poor parents, too, are able to work the system, according to George Davis, the television sports producer. "They send a message, call a school, ask to be put through to the sports department, tell the head of the sports department, 'Look, I have a daughter who is nine years old and running X-point-X seconds for the 100-meters or 200-meters. She's going to be running next at the development meet in so-and-so date and at such-and-such place. I'm suggesting that you come and have a look at her. Or I'm going to send you a tape of her performing, and then you decide if you want to come and look, but I'm encouraging you to come and look.'

"And you call two or three different schools, and have them come down and you meet with them, and then take it from there. Parents do that all the time. In Jamaica, that route is well known. Because the path has been so well trodden, people know if there aren't eyes on their children, they know how to get those eyes there."

Sashalee Forbes, a star athlete I met at the GC Foster College where she was in training, described her journey. "I am from Evergreen, Manchester. I'm 21 years old. In primary school, at the Sagicor meet where all parishes come together, I won both 100 and 200 meters. I was thirteen at that time." Talent scouts canvassed Sashalee and her mother. She moved over to Holmwood Technical, one of the prominent high schools. She excelled at Champs and was recruited into the squad that Maurice Wilson, the national coach, trains at GC Foster.

"I came here running 11.63, and I've improved a lot. My personal best is now 11.10 for the 100-meters. I want to be the next Shelly-Ann. I'm aiming to get an Olympic medal."

Leighton Levy, the sports analyst, mentioned that an average Jamaican family does not make enough to pay for a son's or daughter's college education. "Not many people in Jamaica to this day can afford a tertiary education. They barely afford a high school education."

Athletics prowess helps open the door, Levy indicated, to pathways that are otherwise closed for many Jamaicans. As Jamaica's universities have increased in number and as their track-and-field programs have grown in size and stature, poorer students have been finding places in universities in steadily increasing numbers.

A leading sports administrator told me his story. "My father was a supervisor at a sugar factory. My mother was self-employed. She owned a shop. We were not upper class or middle class. Lower class, actually. Yes, I have moved up the social ladder. A lot of that has come through sports. I concentrated on sports."

Such stories of upward mobility are becoming more common. Ever larger numbers of young people have become participants as track-and-field has captured young Jamaicans' imaginations. Everyone who has the talent knows that she or he will get a fair opportunity. If you fail to make the grade, it's because you lacked the talent, discipline, and dedication – and not because the other guy's father is a politician or his mother is highly-placed executive. There are no running dynasties in Jamaica.

Transparent and objective assessments underpin the system. High standards of time-keeping and measurement are maintained. There is very little room for opinions; who is better than whom is a simple matter of timing.

The expansion of the sports economy has helped in developing soft landings for those who tried but failed to make the grade, making sports a more attractive and less risky career option. Superstars like Usain Bolt aren't the only ones who are able to make a decent living (though he is the only Jamaican whose name featured in Forbes' list of the world's 50 highest-paid athletes in 2017). Many former star athletes work as sports journalists, analysts, coaches, managers, agents, and therapists.

David Riley, high school coach and founder of Technique Lab, explained, "Lots of careers now exist because of track-and-field. Lots of different skill sets are needed; whether it be broadcast, whether it be in the technical aspect of the equipment, software development, the management side, the coaching, the support services, medical and paramedical. There's the performance testing. You have masseuses. You have all kinds of careers right now that kids can – who actually have been involved in sport, after their involvement as an athlete – continue into, making a career out of their involvement in sport. Those are real opportunities. And not just in the local sphere, we're living in a global environment. You can ply your trade anywhere in the world" – especially as a Jamaican sports professional.

Beyond sprinting

Jamaica's athletics successes have been widely noted, but the basis of its success remains confined to a single specialty: sprinting. Of the 77 Olympic medals Jamaican athletes had won until 2016, 74 medals had been won by the country's sprinters.

Will Jamaica forever remain a one-achievement country? This is a predictable result if one believes that immutable factors, like genetics and geography, are the engines of achievement. If one considers, however, that opportunities, rather than talent, are the missing ingredient, then one puts one faith in the task of building career ladders.

Does the viability of a career ladders dependent, however, upon the prior existence of a genetic or cultural advantage? Or can the lessons learned from one career ladder help build other and equally productive career ladders? I put these questions to some thoughtful individuals.

The sports journalist, Simon Preston, told me about how the career ladders for throwers and jumpers had been missing rungs and lacking support systems. No athlete wanted to be a thrower or a jumper: the jumps and the throws were regarded as lesser events. True glory came to a young Jamaican by becoming a champion sprinter: that was the dominant belief. Well into the second decade of the 2000s, only four facilities existed in all of Jamaica where elite jumpers and throwers could train for international competitions. Hardly any coaches were available who specialized in the jumps or the throws and had international accreditation.

Pulling together the same elements that produced the bandwagon effect for sprinting has required filling in missing rungs in these career ladders. It has required mounting the same kind of multi-agency, multi-year effort as was mounted earlier for sprinting, directed at producing the same kinds of shining exemplars, effective motivators, and experienced instructors.

More coaches are being provided for the jumps and the throws by professional clubs and high school programs than before; better training facilities have been constructed; and a more visible place is being provided for jumping and throwing events at track-and-field competitions. These investments are beginning to show results.

“People now *watch* the field events,” Vilma Charlton, the vice-president of the national athletics federation, told me. “They never used to earlier.” Known earlier as the “sprint factory,” Jamaica is now getting known as well for its hurdlers and jumpers and throwers.

What about other arenas of fields of human endeavor that are more distant from athletics? Can the lessons of athletics be utilized for building a career ladder for budding mathematicians, for instance?

Keith Wellington, the high school principal, is optimistic. “It will take effort and structure. The structure that exists that produces this success in the sport is a structure that can be transferred to different facets of life. Unfortunately, many of us, as administrators, don’t try to identify what it is: why is it that these kids are so successful at track-and-field and football but they are not as successful at math? And if you look, you will find that maybe it is because we are not providing that same kind of structure, that same type of opportunity in our classrooms. That’s why we are not as successful. It may also come down to the child’s interest, but interest is something that can be developed. You can light the latent interest in someone.”

Music is one likely area. Hardly a night goes by without a sound-system party in Kingston. Bob Marley vies with Usain Bolt for the title of the world’s best-known Jamaican. There is a rich tradition of music in the country.

I asked Imani Duncan-Pryce, Harvard-educated entrepreneur and public official, about Jamaica's musicians. "Talent is aplenty on the island," she told me, "but unlike its sports economy, very few Jamaicans are able to make a decent living through music."

"It's because a system doesn't exist which identifies talent early and helps these individuals. The only thing around is the Tastee contest," an annual event sponsored by a fast-food chain, at which surprising new talents have been discovered. "But these talents have emerged spontaneously." There's no process of talent development, and even after they are discovered there is no organized effort to take them further.

"It's a very sketchy system," opined Duncan-Pryce, "one that needs a lot of attention."

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