Humanizing cities: All I needed to know about jobs I learned in Kigali

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- [June 25, 2021](#)

As cities across the world race to kickstart their economies through infrastructure jobs programs, I was struck by how smoothly a micro-version of this has taken flight in cash-strapped Rwanda.

In Kigali, a [Swiss Agency for Development and Cooperation-backed (SADC) pilot](#) to build scalable and sustainable homes fast, affordably and with a local workforce is blazing trails to house its communities. Key to the [pilot's](#) success are targeted policies that embrace a systems-based and multi-disciplinary approach to help replace adobe homes in Kigali's unplanned settlements, one home, or one neighborhood at a time. It's all about connections.

[Now the pilot is scaling up](#), with a whole neighborhood – six buildings with 90 dwelling units – breaking ground. Meanwhile entrepreneurs are joining the fray to build other local buildings, using the SADC-financed open source design and technical assistance provided by Swiss applied technology firm SKAT.

SADC's interventions and investments cover and connect everything from financing for capacity building (training, materials, information sharing, and equipment), to new technology, to supply chains, to labor and inspections. They tap new regulations. And they use a novel, simple method to make local clay-based bricks in a rapid and modular fashion. A mobile version of its kiln sits atop a septic tank with a chimney for just-in-time brick making. Each 'Swiss Cube' home can be built in two months.

The goal is 1) safer and lower-cost housing; 2) green materials that lessen the world's already overweight carbon load; and 3) an increase in local jobs (currently double that of earlier builds) so cities can thrive.

New homes with gardens are advertised in catalogs like T-shirts (S=1BR, M=2BR, L=3BR) and can be stacked atop each other in multi-floor buildings.

From this project, I found a few takeaways that are universally applicable:

- **Find the problem: In Kigali, it's homes.**

"Our cities are on fire," says Fatou Dieye, former [SKAT](#) regional coordinator. Dieye was referencing alarmingly rapid population growth rates in the cities of Rwanda, Burundi, South Kivu, and the Democratic Republic of Congo that are among Africa's densest. "By 2050, five million more people will need to be accommodated."

Moreover, historically Kigali's homes have been made from mud and tree-fired bricks and are thus ill-equipped to weather the more frequent storms, floods, and fires climate change brings. "Fire will take down 200 houses in a matter of minutes. We rebuild and six to eight months later it happens again," Dieye adds. "Cutting trees to burn bricks is also incredibly harmful to the environment." As is cement, since the carbon-intensive building material is trucked in from neighboring Kenya and Uganda with most capital and jobs flowing to those countries instead of staying in Rwanda.

Is there a way to get beyond the science, beyond the politics, to the real-world havoc wrought by a planet stretched beyond its means? Can this emotive message reach main street to move power towards mega-investments in a range of green micro-solutions and jobs?

- **Build on new policies to fast-track approvals and implementation**

It's truly easy to do business in Rwanda. New pro-business policies in Kigali range from its [One-stop Centre](#) (with fast permitting and zoning procedures), to its comprehensive

city Master Plan 2050 to simple business set-up processes, to private-public partnerships such as those for materials acquisitions and work training with models that can be emulated and adapted. Collectively these elements, forged by local authorities, engineers, homeowners, and builders in concert, ease and cut the costs of producing materials and building homes.

- **Involve the local community throughout**

Host meetings, anoint local leaders, and listen. Expect resistance, particularly among those with cultures woven into the fabric of traditions and lifestyles – like mining or drilling. Ongoing community consultations will unearth locals with leadership potential and a wider array of ideas for execution.

In Kigali, when clay is needed for brick building, discussions involve farmers and fisherfolk so the clay is carefully extracted from local wetlands without disturbing nearby rice paddies and streams. "This is a once-in-a lifetime moment to influence Kigali's development," says Urban Patch CEO Justin Garrett Moore, who is blending into the SADC-backed open source design mixed-use concepts pioneered by his grandad in 1950s slum-ridden Indiana for his eight-unit Kigali building project. "These are global issues; there is a lot to learn. It's about people, it's about their needs," adds Moore, who is also an Associate Adjunct Professor at Columbia University's Architecture School.

If the crowd is big and diverse enough and leaders speak the same language and listen, compromises that work for all will likely surface.

- **Make jobs training as simple as the problem at hand but elevate each role's nobility**.

Brickmaking is a repetitive task that can be mastered easily. With the right training, locals are acquiring these skills quickly.

 "With scant budgets, materials, skills, and capacities, how can we make urban expansion and profitable?" Asks Dieye. "It's about thinking about a new system to take advantage of the young labor that we have here. Give them the proper skills, rethink the way we build, get the economy going, and create safe urban homes at mass scale."

 The need is so broad and the skills are so accessible, that there is now affordable housing curricula online and in schools across the country.

 Don't label these jobs sustainable. Label them heavy engineering or construction. Label them strong and sexy. Aim to instill pride, mission, accomplishment in one's work.

- **Start small to prove it's possible. Then scale up – fast**.

Political and public attention is fleeting. And time is *not* on our side when it comes to climate change. Returns on green investments are inversely correlated with time to market.

Kigali's open source design has been copied at least 2,000 times, recently by Rwanda's government to house poor and displaced communities. The most popular kiln can produce enough bricks for up to 200 homes and employs 55 people per million bricks versus 15 in the older environmentally unfriendly predecessor. To date, the project has created over 1,000 brickmaking jobs with thousands more indirect ones in areas like masonry and machinery; when fully scaled up 150,000-plus will likely be working on copycat buildings across the Great Lakes region.

Wherever COVID-19 recovery plans land, public scrutiny will be swift and fierce. Like the number of bricks made, or buildings built, or bricklayer jobs created, success metrics must be quick and clear.

- **Tap technology and accelerate execution**

Leaning into new technologies and demonstrating their potential, particularly those requiring fewer resources and/or lower levels of investment than prior comparable products or services (think wind turbines and solar panels) may mean a material drop in utility bills – or more local money for pressing needs like better housing or healthcare.

Sourcing local clay, using coffee and rice husks as fuel instead of wood, tapping modern brickmaking methods and kilns, and using modular models helped cut Kigali's building costs over 40% to $200 per square foot versus $350 before, and energy use up to 80%, while bricks per kiln doubled. Plus, stackable multi-story units can house twice as many people on an equivalent plot of land. But Kigali's building efforts will in time bring much more. On the cards, now that new homes are proven to be solid, affordable and green, are mortgages within reach and – a first for many – electricity and clean water. These form the bedrock of everything worthy: better health, education, jobs, innovation.

When describing potential gains for an infrastructure project, jobs lead. But more money means more of what communities want. Find out what that is and speak to it.

Kigali's tale shows that a success from one part of the world can with the proper policies be elsewhere, and perhaps later return as a better version of its original self. In Kigali,

streamlining processes to fast-track construction, with local input, to meet local needs, made all the difference.

Do you know of similar 'roundtripped' success stories? What policies helped ensure the transfer and tweaking of technology and knowledge, for success?

This article is the first of a new monthly series, Humanizing Cities: The People and Policies That Make Cities Thrive, by Carolyn Whelan. In this monthly column, Whelan will unearth exciting ways that 21st century cities are solving hard problems through ingenuity, alliances and drive. By distilling policy successes in urban enclaves, she plans to help turn the trajectories of progress on human health, environments, economies, homes, schools, transit arteries, and waterways in cities sharply upwards, for cities of the future that thrive.