

African regional integration: A problem-driven approach to delivering regional public goods

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Abstract

Africa is well endowed with organizations to promote regional cooperation and integration. It has 8 African Union (AU)-recognized regional economic communities (RECs), 7 other economic organizations and 25 specialized regional organizations (ROs). On average each country is member of 3 RECs and 4 other ROs. The number of continental treaties signed by African Union member states has accelerated over the last four decades. At the same time, progress on ratifying and implementing these and their regional equivalents is slow, undermining their impacts. This has led to calls to rationalize memberships. At its 50th anniversary in 2013, the AU launched the 50-year AU2063 programme, “The Africa we want,” with 15 flagship projects, heralding a renewed push towards continent-wide projects.

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The new agenda, as opposed to the previous “removing-distortions” focus of REC integration efforts, deals with regional public goods (RPGs) where markets are lacking, with success depending more strongly on collective action across jurisdictions. So, regional integration agreements are increasingly described as “regional cooperation and integration.”

This paper first uses examples to support the rationale for the overlapping country memberships across RECs and ROs, a result best understood as the logical outcome of the fragmented political and geographical landscape in which regional spillovers go beyond the arbitrary borders of any one of the organizations overseeing integration. External partners with financial support have helped introduce new institutional forms and management systems, often beyond country absorption capacities. Despite some successes, the top-down approach largely ended up in a regional “implementation gap” as national capacity building efforts were overstretched and failed to take into account the political interests and incentives.

The paper focuses on the factors that determine the supply of RPGs as a way to better understand these implementation gaps, moving away from uniform thinking about regional cooperation and towards one that is more adaptive and “problem driven.” The characteristics of the different aggregator technologies—a key co-determinant along with political incentives of the availability of any RPG—are then illustrated with examples (e.g. “weakest link” for regional corridors). The RPG characteristics of the 15 flagships of the AU2063 programme are briefly presented and discussed with comments.

The paper next discusses in some detail five examples of RPGs and how their characteristics affect implementation incentives. The first describes cooperation over Covid-19 around mid-2020. It shows limited cooperation, mostly on sharing information and on nudging countries to increase testing. Collective action to harmonize joint structures has not taken place. Digital connectivity across East Africa, a summation-type RPG, was started from the bottom-up by the private sector. It encountered obstacles from distributional conflicts across members when it came to setting up a common mobile network. River basins, with the Grand Ethiopian Dam example, show the difficulties of cooperation around a weakest link RPG, where externalities are one-way, as with the upstream-downstream opposing interests along rivers.

The paper then discusses promises and hurdles in setting up regional power markets. Gains from exchanging power across power pools would be huge, but the lack of confidence and a long list of critical conditions have prevented the development of power pools. Last, the paper then describes how that cooperation on connectivity through road networks is taking place, but with progress slowed by indivisibilities and weakest links across the networks.

These observations motivate closing remarks on the provision of the new continental projects, proposing a bottom-up six step “find and fit” iterative strategy. Rather than starting from a top-down strategy where the approach often seeks to apply best-practice solutions, the framework starts by addressing the problem through understanding RPG characteristics. Suitable coalitions are identified, followed by implementation, and likely adapt and repeat until functional capabilities needed to coordinate cooperation across countries take hold. Their growing legitimacy will open the door to further cooperation and integration.

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1. Introduction

Regional integration has long featured as a policy objective in Africa. While some regional arrangements precede independence, multiple efforts to better connect countries and integrate markets have been made since then. These run from the Lagos Plan of Action (1980) to the Abuja Road Map (1994), culminating most recently in the African Continental Free Trade Area (AfCFTA), which entered into force in 2019. Until the ushering in of the AfCFTA, integration to the level of a common market was undertaken primarily through the eight regional economic communities (RECs) recognized by the AU.¹

These multipurpose organizations are also responsible for promoting regional cooperation and integration in a range of areas beyond trade, including peace and security, natural resource management, and promoting food security and industrialization, among other topics. The AfCFTA is just one of 15 flagship projects identified in the African Union's (AU) Agenda 2063, "Africa's blueprint and master plan for transforming Africa into the global powerhouse of the future."² The range of regional integration and cooperation areas and plethora of continental and regional organizations, statements, and strategies all attest to widely held agreement on the need for greater market integration and political cooperation across countries.

But progress in regional integration and cooperation has been uneven and, overall, less than agreed on paper. While in the early post-independence decades, leaders were reluctant to encourage the emergence of a supranational authority to promote pan-African unity for fear of undermining national sovereignty, similar challenges have since dogged regional integration progress. Though trade under the AfCFTA was launched in January 2021, negotiations on key aspects continue, and for most countries, actual shipments under the agreement cannot yet take place.³ This is partly due to Covid-19 disruptions, but as the Executive Secretary of the AfCFTA Secretariat expressed in December 2020, its adoption will also be slow due to lack of preparedness in both hard and soft infrastructures.⁴

At the same time, the AfCFTA is not just about trade but depends on, and indeed is hoped to trigger, progress in a raft of other continental processes relating to trade and development. A challenge for the AfCFTA and these flagship projects is therefore to avoid getting "stuck" in a stalemate between "form," where an increasing number of institutional structures are created, and "substance," where real concrete implementable measures are taken and impacts felt. Regional cooperation is complicated by political economy dynamics that relate both to the fact that the boundaries of cross-border spillovers and benefits rarely correspond to the jurisdictions of the respective regional organizations, a particularly binding constraint in the African landscape of numerous artificial borders, and the tension between regional decisions and domestic politics.

The main argument here is that regional cooperation and integration processes such as those envisaged under Agenda 2063 and through the RECs and other regional organizations should be considered in terms of providing regional public goods (RPGs).⁵ Adopting an RPG lens, it is argued, would help move away from an emphasis on top-down regional organizational forms and strategies that go with the linear approach to market integration, towards a focus on identifying the regional or cross-border problem to be addressed, and therefore the functions required to do so through regional cooperation and integration. This would entail a move towards a bottom-up approach to understanding and addressing regional problems in the context of actors and interests rooted at the national and local levels.

The remainder of this paper is organized as follows.

Section 2 reviews African integration through the lens of the RECs and the top-down approach that has been taken up to now. It starts with the observation that though economic integration progress has been slow, this has been accompanied by a rise in regional organizations (ROs) and continental treaties, reflecting the wide recognition of the logic and need to cooperate across countries. But the many objectives of each African country are rarely addressed within a single RO. The section discusses how domestic interests help explain why countries are members of several ROs, often leading to overloaded agendas and a high dependency of regional bodies on external support, thus contributing to the implementation challenges faced.

Section 3 looks at regional cooperation and integration from the perspective of providing regional public goods (RPGs) where different types of RPGs entail different country contributions and benefits, and thus incentives to participate or implement. It starts by introducing a typology of “aggregator technologies” that are an important determinant in the prognosis of success for the different regional agendas. The role these technologies play in determining RPGs are then illustrated first through an illustration with the 15 AU Agenda 2063 flagship projects. Section 4 then covers selected case studies in greater detail. These illustrations lead to the conclusion that policy-makers need to seek a more problem-driven, bottom-up approach to regional cooperation and integration.

Section 5 wraps up by suggesting a six-step approach to do this, building on the RPG approach introduced in the preceding sections and taking into account the political economy dynamics affecting different actors around it.

2. African integration through the RECs

Slow progress along the Abuja roadmap...

The overall picture of African integration through the RECs is one of progress, but less than that foreseen when the Abuja Treaty launched the process in 1994. That timetable aimed for FTA status with a common external trade policy in 2017 – that is, a customs union. Except for the EAC, where a customs union is in place, no REC has yet achieved free trade status for intra-REC trade.⁶ Upon scrutiny of bilateral applied tariffs and non-tariff measures (NTMs) in Africa, Melo et al. (2020) conclude that these are still high, often way above the zero level they should be at according to the Abuja roadmap in 1994.

Though implementation capacity and finance are often cited as blockages, others point to the political economy dynamics that play out between participating states (such as Byiers et al., 2019) whether in regional trade deals or other areas. Regional initiatives often remain only partially implemented when faced with entrenched political and business interests. Given weak enforcement mechanisms, whether through formal systems or more informal peer pressure, the regional commitments, strategies, and plans often falter in the face of more “informal” ways of operating. Studies of IGAD, ECOWAS, and EAC all suggest that regional agendas are ultimately responsive to the summits of heads of state and not to the institutional structures such as regional commissions, tribunals and parliaments. For example, the SADC Tribunal was de facto suspended in 2010 after the court had issued rulings against Zimbabwe in a land grabbing case.

Although reducing barriers to trade in goods, and more recently barriers to trade in services, has long been the focus of regional integration agendas, growing regional economic

interdependence fostered by globalization across the world has created new challenges, many requiring cooperation at the regional level. This is why regional integration arrangements are increasingly referred to in terms of regional cooperation and integration (RCI) (World Bank, 2019; ADB, 2018). This term recognizes that interdependencies between countries extend beyond trade in goods and services – including the free movement of capital and people – and can help or hinder regional integration ambitions.

Analyses that judge progress on economic integration in terms of trade in goods, and more recently, of trade in services, tend to mask the diverse forms of interdependence on the African continent. These relate to natural resources and the environment (management of river basins), peace and security, connectivity (transport and other regional infrastructure networks), governance and institutions (regulatory practices, rule of law, policy harmonization). All of these areas drive or block regional cooperation in one form or another.

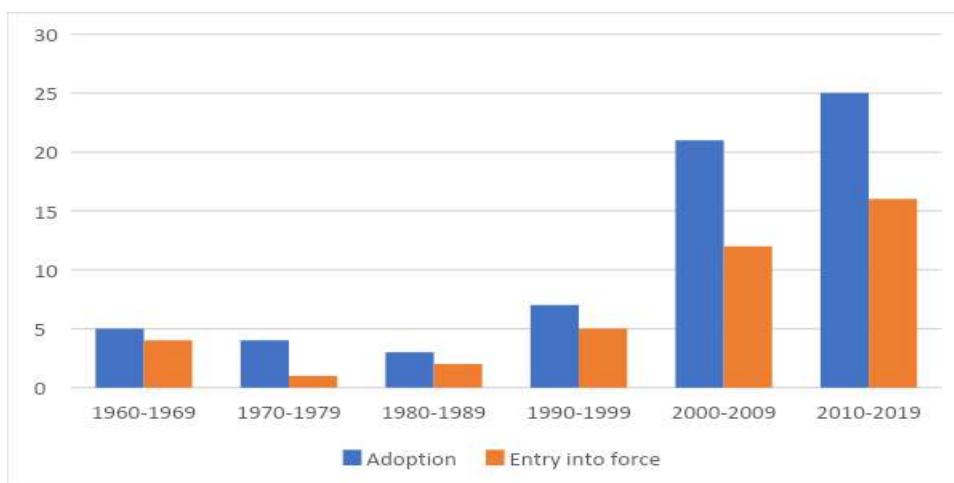
The challenges of growing interdependence are further exacerbated by two factors:

- The fragmented political landscape in Africa of many small countries with many artificial borders that mechanically increase spillovers and interdependencies, thus requiring more cooperation.
- The spillovers or benefits of regional cooperation and integration that do not always correspond to the geography of the organizations tasked with overseeing them.

...but an accelerating number of treaties

The wide interdependence of countries is recognized in the many continental agreements and commitments in Africa. But there is a significant gap between the signing of treaties and their entry into force. To illustrate, figure 1 shows the decadal trend in numbers of AU treaties signed and ratified since the OAU began in 1963. The number of treaties grows every decade, a sign of maturing countries and of growing attempts to jointly manage interdependencies. But there is also a continuing and growing gap between treaties or protocols adopted and their entry into force, reflecting low levels of ratification when heads of state return home from continental summits. This rising number of continental agreements, and the widening gap between signing and entering into force, led Rwandan President Kagame to cite a “crisis of implementation” in his report on how to reform the AU (AU, 2017).⁷

Figure 1 Number of continental treaties adopted and entered into force per period



Source: Authors' compilation from AU website data.

Beyond AU treaties, continental programmes such as the Continental African Agriculture Development Programme (CAADP) have had mixed (attributable) results (Benin, 2016), raising questions about the value added of regional strategies in areas such as food security or industrialization, where depending on the nature of the regional objectives sought, national interests often dominate regional commitments (Byiers et al., 2018).

On paper, greater cooperation calls for some delegation of authority to the supranational level, something that heads of state have been reluctant to accept. The SADC Tribunal mentioned above is a case in point, illustrating the limited appetite for delegating power to supranational bodies. At the same time, the continent is full of regional organizations that seek to promote regional cooperation and integration. But African regional integration is based less on a gradual transfer of competencies by member states to a regional level, than on a deliberative intergovernmental logic, which tends to eschew supranational interventions in domestic affairs – with the notable exception of peace and security. In practice, therefore, the protagonists of African regional integration are first and foremost the member states and not their regional organizations.

This disconnect between regional organizations and member states also explains why commitments and policies are often symbolic, without a clearly timed path towards their implementation. This calls for a shift in focus, from regional commitments along the RECs to understanding national interests, and from regional frameworks to understanding the full complexity of interstate relations and how they play out in regional public good provision and management. Much of this currently takes place outside the framework of the eight AU-recognized RECs.

2.1 A “spaghetti bowl” of regional frameworks

Policy-makers and donors promoting regional integration generally focus on the eight RECs recognized by the African Union as the building blocks for the future African Economic Community. But this focus masks the diversity of other regional cooperation arrangements on the African continent. Though these reflect the desire to cooperate among countries through multiple fora, external financing for all these organizations have led to agenda inflation, adding to overlapping regional mandates and undermining ownership of African regional agendas. Nonetheless, this section argues that multiple regional memberships are a feature not a bug of African regionalism, and that the nature of regional interdependencies calls for a flexible approach to regional cooperation among interested actors, more focused on providing RPGs.

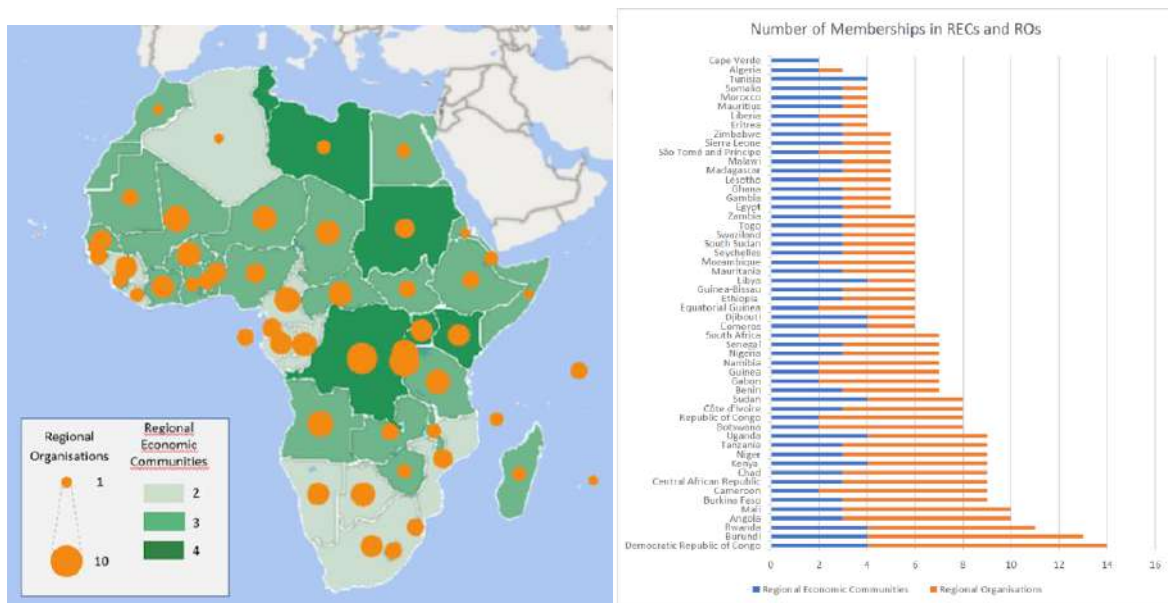
Domestic interests and overlapping memberships

Each REC has distinct origins and underlying drivers: ECOWAS emerged in 1975 from a desire by Nigeria to strengthen ties with its Francophone neighbours while weakening the role of France in the region, a key player in the Biafran secessionist war (Bach, 2016). SADCC, the precursor to SADC, stemmed from the frontline states’ common position against apartheid South Africa. IGAD began as a UN initiative to combat drought and desertification (IGADD) in the Horn of Africa. The EAC was a reformulation of the colonial era East African Federation. AMU was formed in 1988 in response to the 1980 Lagos Plan of Action but quickly became blocked due to political tensions among the leaders over Western Sahara. CEN-SAD emerged from “poor relations with Libya where Muammar Gaddafi had undertaken to establish, in 1998, a grouping of his own” (Bach, 2016). AU recognition of CEN-SAD was then “a tribute to the Libyan guide’s contribution to the revision of the OAU charter” (ibid). Beyond historical

interest, these different origins continue to shape interactions and progress within the different regional groupings (Byiers et al., 2019).

A 2006 moratorium on the creation of new RECs consolidated the continental architecture from an AU perspective, but for member states the eight RECs are only a few among many other single and multi-issue regional bodies through which they pursue their regional interests. A comprehensive tally of the main regional organizations (ROs) displayed in figure 2 includes pre-existing regional economic communities such as UEMOA,⁸ UDEAC (1964, superseded by CEMAC in 1999), SACU (1969, building on arrangements going back to the late 19th century). The list also included subregional development organizations such as the Mano River Union (1971), or the Liptako Gourma Authority (1970) and the river basin and regional energy organizations.

Figure 2 Membership intersections across regional organizations and regional economic communities



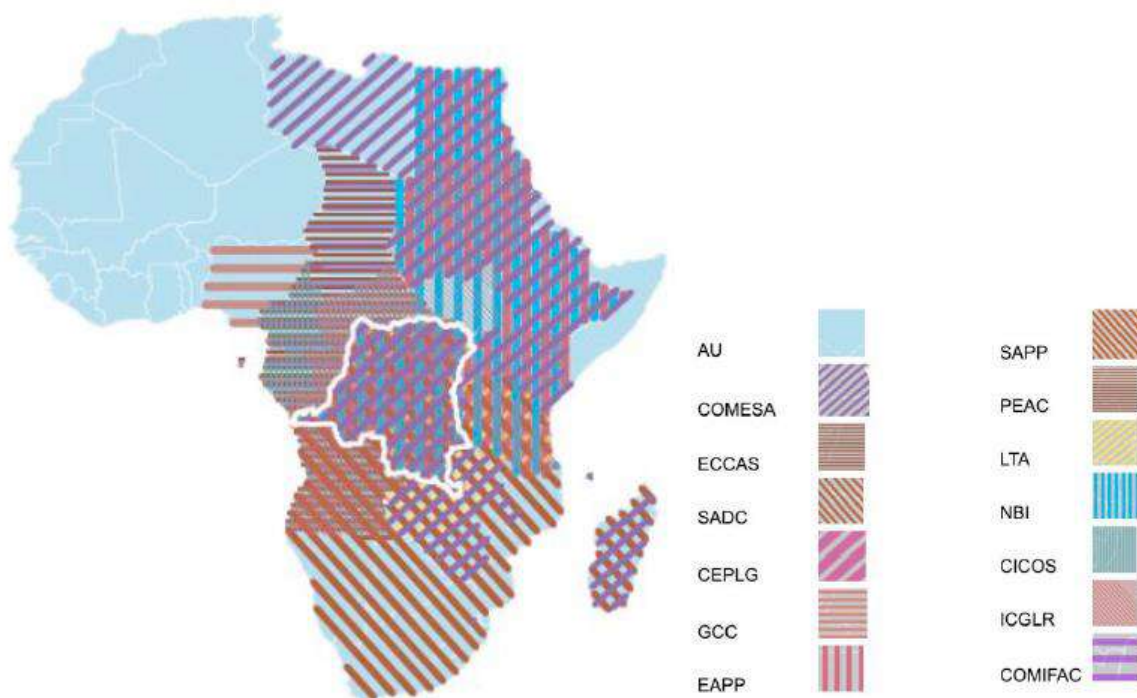
Note: Economic organizations: 16 (9 AU recognized RECs + 7 other economic organizations). Other regional organizations: 25 (5 energy-based + 15 river and lake + 4 peace and security +1 environmental). Average memberships per country: RECs (3); other regional organizations (4).

While AU attempts to focus on only eight RECs might thus make sense, exhortations to rationalize memberships (such as EC, 2017, 2018, 2019 and World Bank, 2019) seem misplaced, even if all RECs ostensibly aim to create a continental FTA and eventually a customs union. This is because countries seek different objectives from different memberships, reflecting a mix of short and long-term perspectives.

Countries with the largest memberships (number in parenthesis) are Democratic Republic of Congo (13), Burundi (11), and Rwanda (10) and those with the smallest are Cape Verde (1), Algeria (2), and Tunisia (4). Notably, countries that have less artificial boundaries (those that are not landlocked) have fewer memberships. Of the eight AU-recognized RECs, the DRC is a member of COMESA, SADC, and ECCAS (figure 3), and recently requested to join the EAC.⁹ Given the size of the country and the landlocked nature of much of its area, different regions of the DRC are economically integrated with different neighbouring countries and regional blocs. This provides a strong geographical logic to join multiple regional organizations. Other reasons include geopolitical calculations: some observers see Rwandan enthusiasm for DRC's

membership as a means to legitimize their military presence and alleged accompanying illicit mineral trade in the Kivus.¹⁰

Figure 3 Democratic Republic of Congo’s membership in regional organizations



Source: ECDPM. Based on maps available at: <http://www.ecdpm.org/regionalmap>.

REC borders are as arbitrary as national borders - countries not only join different regional organizations for different reasons, but use these groupings according to the issue to be addressed. Tunisia’s accession to COMESA and Morocco and DRC’s requests to join ECOWAS and the EAC, respectively, are less an indication of geographic proximity and more of perceived political and economic opportunities. Francophone West African countries’ use the WAEMU to counterbalance Nigeria in ECOWAS trade negotiations (Karaki and Verhaege, 2017). Likewise, Kenya has varying interests in its regional memberships as summarized in table 1: it has used COMESA safeguards to protect its sugar and wheat sectors from Ugandan imports in a way that it cannot under the EAC customs union (Gathii, 2011: 71). But Kenyan interests in IGAD are arguably more related to peace and security in neighbouring Somalia and the Horn of Africa than to its hitherto slow-moving economic agenda, though IGAD is one of the AU-recognized RECs, ostensibly aiming towards an FTA.

Table 1 Kenyan regional organization memberships and key strategic interests

Regional organization	Key strategic interests
East African Community (EAC)	Economic integration, regional market for advanced Kenyan private sector
Common Market of Eastern and Southern Africa (COMESA)	Economic integration beyond EAC, safeguard measures for intra-EAC trade (see example in text)
Intergovernmental Authority for Development (IGAD)	Security (South Sudan, Somalia) and dryland-related issues (N Kenya)
East Africa Power Pool (EAPP)	Energy deficit country; diversification of energy imports away from Uganda
Lake Victoria Basin Commission (LVBC)	Fisheries, territories, high share of Kenyan rivers into lake; oil and gas prospecting; upstream coalition in NBI (see next)
Nile Basin Initiative (NBI)	Upstream Nile country due to Lake Victoria

International Conference of the Great Lakes region (ICGLR)	No border with DRC but interested in DRC stability and seen as "neutral player"; mineral exports through Mombasa
East Africa Standby Force (EASF)	Security to counterbalance IGAD (seen as Ethiopia dominated); Kenya hosts East African Standby Force Coordination Mechanism (EASFCOM) and Secretariat and Planning Element (PLANELM)

Source: Authors, based on <http://www.ecdpm.org/regionalorganizations> and news articles.

Similarly, when Rwanda rejoined the Central African Economic Community ECCAS in 2013, after leaving in 2007 to focus on integration with the EAC, it was less about economic integration than politics, peace, and security. Seen in this light, overlapping REC memberships are not an accident or unintended consequence, but the result of deliberate choices by national leaders. That means that not all member states in a region will accord the same priority to a regional agenda, even if agreed through the regional organization, thus affecting how regional issues are dealt with and agreements are implemented.

At the same time, the number of trade agreements continues to increase with the launch of the tripartite Free Trade Area (TFTA) in 2011 and the more recent AfCFTA that legally came into force in 2019. Though both aim to overcome the issue of overlapping memberships, the negotiating principle of “preserving the *acquis*” (building on existing levels of integration) means that they exist as additional agreements on top of the existing REC agreements.

2.2. The regional implementation gap

Beyond country interests, not all regional organizations function as intended. Beyond missing integration deadlines, some regional organizations are all but defunct. Gray categorizes international organizations as alive, dead, or zombies: “where their offices stay open and some minimal activity persists, but they make few meaningful advances in cooperation” (Gray, 2018). Focusing only on trade levels according to predicted trade and the actual meetings held, Gray (2018) categorizes CEN-SAD and AMU as zombie organizations across several years, though AMU showed some signs of life in 2013 after the Arab uprisings.

In this complex landscape, the challenge for countries then becomes not just ensuring consistency between multiple memberships, but also finding the resources to pay their membership dues and to first define and then agree to follow up and implement commitments made through different regional platforms.

External drivers of African integration

A further feature of the African regional landscape is the high dependency of all regional organizations on external finance. Their existence therefore owes itself as much to the need to address common problems in Africa, as to the willingness of external partners to continue to fund them –while also influencing the agendas (Stapel and Soderbaum, 2017).¹¹ Whereas in 2002, the AU and the RECs were funded by 12 donor projects, worth US\$ 3 million altogether, by 2015, they had more than 140 such activities, worth a total of US\$ 150 million (Stapel and Soderbaum, 2017). Further, Stapel and Soderbaum calculate that worldwide regionally targeted ODA increased between 2002 and 2015 from US\$330 million to US\$ 2.35 billion per year. Although only a small proportion of this is channelled to the AU and RECs, REC reliance on external funders is notoriously high.

The reliance on foreign funding has affected the governance and the institutional development of the AU, RECs, and other regional organizations in Africa. EU evaluations of its support to regional integration – mainly channelled through AU and RECs – find little evidence of positive effects of their support for institutional capacity on levels of performance of these

regional organizations (EU, 2017, 2018). A range of “ideal-type institutional shapes and forms were introduced in the AUC such as results-based management systems, performance orientation in human resources,” but ultimately “did not function as intended” (Pharatlhathe and Vanheukelom, 2019). This mirrors what is seen in national capacity development efforts that fail to take into account political interests and incentives, hence leading to “new laws that are not implemented, or new budgets that are not executed, or new units and agencies that go unstaffed and unfunded. In short, new forms may emerge but they frequently lack functionality: what you see is not what you get” (Andrews, 2013).

The implementation gap between regional decisions and their application is a concern that shared by African stakeholders and their external partners. A panel of African experts referred to the AU as a “dysfunctional organization” and recommended comprehensive institutional reforms to “make the AU fit for purpose.” According to their report (the Kagame report), strengthening the AU would require the AU to focus on key priorities with continental scope and realign AU institutions to deliver against those priorities and for member states to finance the AU (AU, 2017).

Both the diagnosis and the recommendations of the Kagame report contain important pointers for the future of continental and ROs, especially for the RECs. They emphasise the importance of realigning the AU and REC agendas to areas where there is political traction. It also emphasises the importance of improving core governance functions of regional organizations as these help shape ownership and self-financing, with the AU Commission already rolling out concrete measures in that regard (Apiko and Miyandazi, 2019). It also draws attention to the flaws of aid that is fragmented, ill-targeted or too tightly earmarked and opaque. The sharp focus on AU and RECs for regional integration has arguably overloaded their agenda and capabilities, crowding out the ROs best placed to deliver RPGs. This external engagement – which takes place as the application of uniform best practices imposed by the aid architecture – can actively hinder the emergence of functional domestic organizations leading to what Andrews et al. call “premature load bearing” (2015: 124). These remarks made in the context of developing countries seeking to build capability to solve locally defined problems applies with greater force for problems at the regional level.

3. Regional cooperation and integration as regional public good (RPG) provision

A regional public good (RPG) is any good, service, system of rules or policy regime that is public in nature, meaning that it would be under-provided and often overused if governed by the market alone. RPGs are transnational public goods that generate shared benefits for the participating countries. National public goods (NPGs) are provided by the state, which is invested with the coercive powers to raise taxes to finance their provision.

A wide range of ROs are mandated to facilitate cooperation and integration among African countries – or in other words, to supply or manage RPGs. Provision of RPGs requires cooperation on joint commitments across different jurisdictions and, as discussed, occurs with varying degrees of effectiveness.¹² Here we show how the characteristics of regional cooperation and integration, or the different types of RPGs, affect the interests and incentives of regional partners and thus the supply of an RPG. We summarize RPGs in terms of their “aggregator technology.” This approach helps to better distinguish between different types of regional cooperation and integration, and thus to move away from uniform thinking about

regional cooperation towards something that is more adaptive and “problem-driven.” The aggregator technology characteristics are then used to distinguish between the AU’s Agenda 2063 Flagship Projects, before presenting four case studies of regional cooperation and integration in Africa that illustrate how the RPG characteristics help better understand interests and incentives around these initiatives.

3.1 Understanding RPG contributions and benefits: the aggregator technologies

It is often implicitly assumed that countries will benefit from regional collaboration equally, or according to their contribution. In reality, the link between individual contributions and overall availability of an RPG varies according to the aggregator technology of the RPG. That is, the relationship between different regional objectives and country contributions varies according to this technology. Understanding this characteristic of different regional agendas therefore helps to understand incentives and therefore to design policies accordingly to promote more effective RPG provision. Figure 4 describes these technologies with their characteristics and implications and a few examples.

1. In a **summation RPG**, the total provision of a public good results from the sum of all individual contributions, regardless of who consumes the RPG in the end. An example of a regional summation public good is combating desertification. National boundaries are of little consequence, since the public bad that is created is the result of the sum of the overall surface area subject to deforestation and unsustainable agricultural practices. The public good of reducing desertification is equally dependent on the sum of efforts across the region. This encourages free-riding, since there is nothing stopping a non-contributing member from consuming the good (less desertification) provided by others. Contributions by one member are perfect substitutes for contributions by another. Reducing greenhouse gas emissions is the perfect example at the global level. When contributions are perfect substitutes across contributors, free-riding is likely to be pervasive and difficult to control among sovereign states.
2. In the related case of a **weighted sum RPG**, the effort or contribution of one state has a larger impact on the total provision of the good than the equal effort of another state. This can be the result of specific geographical features, economic size, growth rates or local attitudes towards certain public bads. Regional trade agreements are weighted sum RPGs. Though trade agreements selectively or partially exclude non-members from deriving benefits, known as “club goods” to distinguish them from pure public goods, the sharing of benefits among members cannot easily be attributed to individual members’ contribution. Regional hegemons can underpin the market, but can also spell trouble for the club. That was the case in the first East African Community in the 1970s when the perception of unfair distribution of gains among members in the absence of compensation, led to a collapse in cooperation.
3. Some RPGs are the result of a fundamentally different way of combining national contributions. Under **weaker or weakest link aggregation**, the total provision of an RPG is limited by the smallest contribution made. Along a transport corridor, the contribution of the weakest country determines the overall performance of the corridor. In the case of financial stability, countries with the most vulnerable institutions or poorest financial practices determine the financial stability of the zone as a whole. This form of RPG can therefore be thought of as a lowest common denominator problem, where blockages at one part of the network reduces or eliminates gains to all.

4. In contrast, under a **best shot or better shot RPG**, the availability of the public good is determined by the best contribution. Best shot technologies call for agreement on leadership, which suggest a transfer of decision-making to the frontrunner or hegemon that is in a position to deliver on public good provision to the benefit of multiple consumers. The same is true to a lesser degree under a better shot technology, where contributions by several participants determine the supply. The very rapid production of several promising vaccines for Covid-19 is a recent example at the global level. Another, is the East African One Network Area (ONA) roaming initiative launched in 2015 by private sector actors to lower the cost of roaming and communications among Kenya, South Sudan, Rwanda and Uganda through regulatory intervention and coordination.¹³
5. Under a **threshold** aggregation technology, provision only takes place when the sum of individual contributions reaches a certain threshold. This applies to the development of regional energy markets and applies to regional power pools, discussed below. The challenge here is to identify with whom to work and how, to reach the necessary energy production threshold, potentially requiring collective action and aligned incentives among participants. By design, regional and continental agreements requiring a minimum number of ratifications to come into force, such as the AfCFTA, have a threshold characteristic, even if the broader benefits of actual implementation are weighted sum.

The mechanics of aggregation described in figure 4 offer a way of better understanding the political economy of between-state contributions. It helps understand the feasibility and sustainability of regional commitments and the likelihood they will be upheld. Figure 4 also helps explain persistent holdups in member state contributions and why member states, who support regional commitments publicly, hesitate to put these into practice.

Figure 4 Aggregator technologies and their relevance to African Integration

Technology	Examples	Illustration	Characteristics and implications
<p>1. Summation</p> <p>The total provision of a public good is the sum of individual contributions, regardless of consumption patterns</p> <p>Weighted sum Occurs when efforts of some countries weigh more on the total provision of the public good</p>	<p>reducing greenhouse gas emissions; combating desertification; water quality monitoring</p> <p>flood control in shared river basins; construction of shared energy infrastructure</p>		<p>Characteristics</p> <ul style="list-style-type: none"> Free-riding is a common problem, as countries can rely on others to provide benefits they can freely derive Prisoners dilemma occurs if incentives to contribute are not equally spread <p>Implications</p> <ul style="list-style-type: none"> Regional organisations can seek to work where there is particular traction Subregional groups can drive RPG provision and early investment <p>Characteristics</p> <ul style="list-style-type: none"> Some countries actions will weigh more on the provision of the good than those of others. (e.g. upstream countries will have a greater impact on floodign than those of downstream countries) Countries with larger impact may be incentivised to act Minor impact countries may be difficult to incentivise, reducing overall efficiency <p>Implications</p> <ul style="list-style-type: none"> Monitoring is key to assess countries' weighted contributions Resources can be targeted according to impact.
<p>2. Weakest link</p> <p>The total provision of an RPG is limited to the smallest contribution made</p>	<p>Regional transport corridors</p>		<p>Characteristics</p> <ul style="list-style-type: none"> Efficiency of provision depends on all countries contributing commensurate to their endowments Problems arise when one country cannot afford or fails to contribute (e.g. one traffic breakdown will slow down an entire transport corridor.) <p>Implications</p> <ul style="list-style-type: none"> Efforts can be focused on weakest link(s) Contributors can exert pressure/support weakest link(s) to perform
<p>3. Best shot</p> <p>Provision of an RPG equals the most significant contribution made</p>	<p>Regional conflict resolution mechanisms; technological advancement</p>		<p>Characteristics</p> <ul style="list-style-type: none"> The most significant contribution defines the level of provision; others weigh less on the outcome Hegemony often plays a role; coordination can be difficult if there are multiple contenders, or none at all <p>Implications</p> <ul style="list-style-type: none"> Targeting resources to 'best-shooter' countries can accelerate provision Regional organisations can be used to pool resources, increasing overall efficiency
<p>4. Threshold</p> <p>A n RPG is only provided when the sum of individual contributions reaches a certain threshold</p>	<p>Regional energy markets</p>		<p>Characteristics</p> <ul style="list-style-type: none"> Provision depends on reaching a shared threshold of contributions (e.g. a regional energy market can function efficiently if there is a critical mass of infrastructure and power generation capacity across the region) If threshold is far away, countries may not be incentivised to act as early contributors <p>Implications</p> <ul style="list-style-type: none"> Regional organisations can seek to reduce thresholds Threshold contributors should see an interests in pioneering RPG provision

Source: Adapted from ADB (2018: 130).

Country-level contexts and political interests are therefore also key to implementation. At this point it is also important to add one nuance: one policy area or regional cooperation objective can comprise multiple RPGs with different characteristics. While the AfCFTA is an example of a weighted sum RPG, the overall benefits depend on the number of states participating, but also the size of their economies. Aspects of the AfCFTA, such as the NTB reporting mechanism, has best shot technology characteristics, while the agreement itself was of a threshold nature. This means that once an NTB mechanism has been agreed upon, it can in theory be easily implemented across all members, but its contribution is a weaker link RPG since benefits are

reduced by non (or partial) reporting. At one level, the agreement is a threshold RPG since entering into force required 22 countries to have deposited their ratifications with the AU.

The difficulty arises because the AfCFTA's overall benefits depend on implementation by a sufficient number of large economies and on weakest link aspects along corridors. These are the economies most reluctant to open their borders. The trade that would then take place also relies on weakest link RPGs such as regional trade facilitation and corridors, where non-implementation can essentially undermine the size of the market created by the AfCFTA. For the overall market size, policy attention must focus on encouraging the large economies especially to implement the agreement, so the threshold technology still applies for the overall benefits of the market created. Since low transport costs will also enter in the determination of aggregate benefits, weakest link transport bottlenecks could arise since a small country along a corridor between two large countries could drastically reduce overall benefits.

3.2 The Agenda 2063 flagship projects as RPGs

Table 2 lists the objectives of the 15 flagship projects of Agenda 2063, classified into different aggregation categories. Typically, multiple aggregation characteristics apply to each flagship, and only a few are mentioned in the comments column. The flagships include key initiatives such as the AfCFTA, the protocol on the movement of people, and the single air transport network, all potentially mutually reinforcing.¹⁴

The many cases of weighted sum aggregation technologies underscore the great diversity in economic size across Africa. If some of the large countries remain outside the agreement, the benefits to participants will shrink. Best and better shot type RPGs are generally easier to coordinate, especially if they are about creating a space strategy or an Africa museum, though the benefits of these may also be less widely spread.

While exploring table 2, keep in mind the following aspects that jointly determine the adequacy of the supply of the listed projects:¹⁵

- Non-rivalry of benefits (low rivalry raises the prognosis that supply will be adequate).
- Excludability of non-payers (such as “club goods” like tolls on highways) raise the prognosis of the supply.
- Provisioning (referred to as “aggregation technology”) determines how individual contributions translate into an overall provision level).
- Small group of participants and/or availability of a hegemon who will take the lead (and internalize most benefits).
- External (beyond country-level) financial support (regional and multilateral financial institutions).

Table 2 The African Union's Agenda 2063 flagship projects as RPGs

Agenda 2063 Item		Policy area	Aggregation technology	Comment
1	Integrated High Speed Train Network	Transport	Weighted sum	Benefits depend on number and size of participating countries. Possibility of excluding non-payers increases prognosis of adequate supply. Regulatory harmonization and operation of networks is weaker link.
2	African Commodity Strategy	Industrialization	Best shot	Prospects for success are low because of rivalry over distribution of benefits (e.g. how to split gains on cocoa trade policy between Côte d'Ivoire and Ghana)
3	Continental Free Trade Area (AfCFTA)	Trade	Weighted sum	Threshold on participation. Non-participants are excluded. Weighted-sum on overall benefits that depend on the economic size of members. Aspects such as the NTB reporting mechanism have more better shot characteristics. A leader (or a handful of leaders) can set an ambitious agenda to realize greater benefits giving it a better shot flavor. Many benefits are not excludable, contributing to free-riding. Enforcement requires a functioning dispute settlement mechanism, which is weakest link.
4	African passport and free movement of people	Movement of people	Summation	Benefits proportional to number and size of participants. Non-participants de facto excluded.
5	Silencing the guns	Peace & security	Better shot	The Africa Standing Force (ASF) is organized around regions, following the principle of subsidiarity.
6	Grand Inga Dam Project	Energy	Best shot	Supply is best shot, but commercial viability is a threshold good, requiring a sufficient market for the foreseen energy. Subsequent water management etc is weakest link. Dredging and bank management are summation.
7	Single Air-Transport Network	Transport	Weighted sum	Benefits proportional to number and size of participants. Weaker link constraints in technology and regulatory harmonisation.
8	Annual African Economic Forum	Dialogue/debate	Best shot	Limited actual cooperation required to set this up, though the benefits accrued will depend on attendance.
9	Continental financial institutions	Finance	Better shot/threshold	Ratification and set up by states make this a threshold RPG. Questions of actual use, funding may be less public than private goods since excludable and rivalrous.
10	Pan-African E-Network	ICT/education	Best shot	Better shot in terms of technologies and materials for online learning. Could be a public/private partnership (private sector benefitting from human capital).
11	African Outer Space Programme	Science cooperation	Best shot/club good	Both the programme to coordinate country efforts and the technology aspects envisaged are best or better shot.
12	Pan-African Virtual University	ICT/education	Best shot/club good	Better shot in terms of technologies and materials for online learning. Non-participants can be excluded
13	Cyber-Security	ICT	Best shot/threshold	Strategy is best shot, but ratification process is a threshold RPG, while its impact is a weighted sum with more digitally

				connected countries being more necessary implementers than less-connected economies.
14	Great African Museum	Culture/knowledge	Best shot	Sufficient to have one leader (Algeria reportedly willing to host and lead).
15	Encyclopaedia Africana	Culture/knowledge	Best shot	Success possible with a limited number of participants.

Source: Authors.

The between-country interests surrounding the summation and weighted sum club goods in table 2 contrast with all the other AU priorities, with many having best or better shot aggregation technologies. Holding an annual African forum, developing and implementing an outer space strategy, and creating a Pan-African virtual university can create wide benefits, even if they are excludable, based on implementation by one or a few countries that have the resources and know-how. Once an African commodity strategy exists, no country can be excluded from reading and using it, but if all countries simultaneously implement it, progress in one country may undermine that in another, making it more a private than a public good. Other projects, such as the Pan-African e-network, also rely on best shot technology, but since they are excludable in their benefits, the policy difficulty lies more with ensuring widespread access. The silencing the guns project is a pure public good with best shot attributes, as the end of hostilities may come about through the best efforts of one country rather than the wide participation of all.

The political economy of implementation within countries also varies across the 15 projects. For 12 Agenda 2063 projects, continent-level agreement does not automatically result in implementation and impact. Where weighted sum and other summation type RPGs entail new regulations and obligations, implementation then faces domestic political economy barriers – and any tariff reduction has winners and losers, at least in the short run. Unless technology makes customs officers obsolete, the application of the AfCFTA will depend on discretionary decision-making at borders, forcing traders to pay for correctly categorized and documented goods moving across the border. The AfCFTA is thus likely to encounter both domestic demand and domestic resistance that will shape its implementation. So, for summation RPGs, coalitions must be built among those likely to benefit from implementation, and adjustment measures must be provided to expected losers.

4. Case studies

This section develops five examples of regional cooperation in terms of their RPG characteristics.

The urgency of access to medical supplies in the current situation of pandemic under great uncertainty provides a compelling case for regional cooperation, and of delegation of authority to a supra-national level, to help make accessible medical supplies across the continent. This example highlights the limited cooperation when there is rivalry in benefits. The One Area Network (ONA) in East Africa allowing for cross-border cell phone roaming, a “summation” type of RPG, illustrates the promises (and limits) of private-public partnerships. Examples from river basin management in the Niger and Nile basins highlight the burden caused by one-way externalities (upstream-downstream) and the associated hold-up situation for the Nile contrasted with the benevolent leadership for the Niger basin. The energy power pool example, a threshold RPG, highlights the many conditions that have to be

met by the regulatory framework. Connectivity through road and logistics networks, another threshold RPG, also illustrates the weaker link characteristic in RPGs with bilateral connectivity.

4.1 Covid-19: An opportunity to jumpstart collective action ¹⁶

The Covid-19 pandemic is a perfect example of a global public good (a bad in fact) that calls for collective action. The pandemic’s lethality calls for action everywhere and at multiple levels, including at a regional dimension. On the health side, countries need to secure medical equipment in the short run through trade to relieve pressure on hospital capacities. In the longer run, countries need to develop or access vaccines in the shortest possible time. On the wealth side, the challenge is to flatten the epidemiological curve at least cost in curtailing economic activities. How each constraint is handled has an effect on the other – a long lockdown to meet the medical constraint exacerbates the wealth constraint as economic activity plummets and citizens lose patience and vice-versa for lax containment measures. Both constraints leave little room to manoeuvre, especially in African countries.

Early in the pandemic, countries turned inwards. Facing the fall in availability of essential goods on international markets such as medical supplies but also food, countries tried to secure them by reducing import barriers while simultaneously restricting exports. Across Africa, the uncertainty about supply chains resulting from the scale of disruption led observers to suggest that Africa should prioritize regional rather than global value chains (Mold and Meyvange, 2020), not least through the African Continental Free Trade Area (AfCFTA).¹⁷ In spite of initial barriers, some cooperation is taking place across the continent.

Some limited delegation of authority

Table 3 gives some examples of cooperation from lowest (information) to highest (collective action) levels of cooperation.

Table 3 Levels of subsidiarity to tackle Covid-19 in the health sector across Africa

Level	Action	Types of measures	RPG Aggregation characteristics	Examples
1. Inform	Collecting and sharing useful information	Centralizing and providing regular statistics on Covid cases by member state and region; information on country-level measures	Primarily best shot as one centralized regional body compiles and publishes data (conditional on them being made available which brings in an element of summation.	The AU CDC Covid-19 tracker. The WAHO in West Africa; COMESA proposal for platform on availability of essential goods. Information-sharing on different border and lockdown measures in place across COMESA members.
2. Nudge	Recommending or urging states to adopt policies to address the pandemic	Calling on member states to increase testing and increase national health expenditure. Suggest standards to facilitate trade	Producing guidelines is best shot and thus relatively straightforward to do, though benefits and impact have summation characteristics – the benefits of application will rise with the number who apply them.	EAC recommended containment strategies and encouragement of partner states to invest in public health systems to ensure health security.

3.Coordinate	Joint monitoring within the REC	Point of entry screening standards and certification; Harmonising border measures and prioritising value chains and productive capacity	Joint monitoring is a summation technology, where the benefits are proportional to country participation, making this harder to achieve.	Re-activation of the Technical Committee for Coordinating and Monitoring the Implementation of the SADC Protocol on Health. Development of a regional mechanism for Covid- 19 testing in EAC with certification and monitoring of trucks drivers and a harmonised system for certification and sharing of Covid-19 test results; COMESA call for member states to develop uniform standards for Covid-19 responses.
4.Collective action	Harmonization using joint structures to the benefit of all REC members	Joint procurement and distribution of test kits, PPE and medical equipment; Joint resource mobilisation and regional budget reallocations Africa medical supplies platform.	This is primarily “best shot” - meaning a good chance of working IF countries are willing to hand over authority to carry out procurement in their name.	ECOWAS allocated additional funding for WAHO to purchase and distribute testing kits, PPE, and a limited number of ventilators. IGAD is making efforts to secure the necessary finance to head off the crisis with a one-stop shop to deliver medical supplies sourced from African countries and China through hubs like Addis Ababa and Johannesburg.

Note: AU: African Union; CDC: Center for Disease Control; WAHO: West Africa Health Organization; PPE: Personal protection equipment; REC: Regional economic community.

Source: de Melo (2020) adapted from Medinilla et al. (2020).

As table 3 shows, informing is the easiest to carry out as it involves a best shot approach which can be carried out by regional secretariats with little need for states to actively implement anything beyond sharing data. One step on, though still best shot, REC secretariats have used their infrastructure to develop and issue technical guidance in an attempt to ensure common approaches – but for this to have an effect would require states to act on it, which would then have summation characteristics. Coordination, and especially collective action, are more difficult to achieve, but for different reasons.

While coordination represents summation characteristics where the benefits depend on the number of countries participating, it faces two challenges. First, where states are taking different approaches to managing the pandemic, agreement must be reached between heads of state on containment and trade policies, requiring actions that go beyond best shot guidelines or strategies. Second, with overlapping REC membership, coordination requires that members in all RECs agree. Thus, under the Tripartite FTA, all 28 members of COMESA, EAC and SADC must agree on the measures to be adopted. Pragmatically, then, a bottom-up approach may be more fruitful – for example, on both sides of a single border between Kenya and Uganda – leaving wider harmonization with other EAC member states for later.

Joint procurement and distribution of medical equipment have more best shot characteristics, once states agree to hand over authority to regional bodies to do this in their name, thus highlighting the political nature of regional cooperation and some of the stumbling blocks. As of June 2020, the recently created Africa medical platform represented collective action at the continental level. The platform is designed to address shortages and

security of supply, ensure price competitiveness and transparency in procurement, and reduce logistical delays. The platform should give the continent a fairer chance in the international scramble for Covid-19 test kits, protective equipment, and vaccines when they emerge, and requires limited implementation inputs from participating states. The volumes transiting through the platform should lower costs to access services from quality-certified suppliers. It is the most promising step towards starting the implementation of the AfCFTA. A concrete example of the benefits of cooperation, if it operates smoothly, this platform should be an example of the beginning of the long-sought-after supranational decision-making in Africa.

The REC responses to Covid-19 could represent a tipping point for jump-starting collective action across Africa, first at the REC level and then at the continental level. Arguably, this happened with the 2003 Tsunami that triggered cooperation in the ASEAN region, for example, with the setting up of an early warning system.¹⁸

4.2 Digital connectivity in East Africa

Digital and mobile phone connectivity represents another RPG where provision can be initiated by the private sector or in conjunction with the public sector. The digital economy was expected to be the fastest growing sector of the world economy, a trajectory which is further bolstered by the Covid pandemic and restrictions on worker and consumer movement.¹⁹ Like physical networks, regional digital connectivity is a weighted sum good, with the benefits of the network depending on the number of participating countries and their digital-economic weight.

In the EAC, regional digital connectivity can operate as a hub-and-spoke network, as in Kenya, where the hub and the spokes communicate almost without cost once the physical infrastructure is in place. With digital connectivity, the high fixed costs of building the network contrast with the low cost of operating it. Though a summation-type RPG, digital hub-and-spoke networks can also be subject to the weakest link problem if the spokes are reluctant to cooperate with the hub for fear of increasing the hub's bargaining power. Nonetheless, the overall level of service depends most on the hub, giving it greater importance.

The East Africa One Network Area (ONA) reveals the benefits and challenges of network connectivity in mobile telephony. The ONA is part of the East Africa Single Digital Market Initiative, focused on a single connectivity market, a single data market, and seamless digital content access. Major gains are expected in the next 10 years that would add 0.6%–1.6% to GDP growth and create 1.6–4.5 million new jobs. Existing internet users would capture \$1.2–\$4 billion in consumer surplus due to falling broadband prices (World Bank, 2018: 14).

In 2015, the ONA was set up to harmonize mobile phone markets across the EAC. The first phase aimed to harmonize markets in Kenya, Rwanda, South Sudan, and Uganda under an agreement to reduce and ultimately eliminate roaming charges for calls across member country borders. ONA also stipulated waivers of excise taxes and surcharges on incoming ONA voice traffic and wholesale and retail price caps on outbound ONA traffic. The rollout of this initiative was well received by consumers and the private sector. In mid-2015, ONA was extended to data and mobile money transactions, both key to developing cross-border trade and regional value chains, an objective of the AfCFTA.

After ONA implementation, inbound roaming calls to Kenya from Rwanda increased by more than 950%, and retail roaming rates in Uganda dropped eightfold to around 0.1 cent a minute

(World Bank, 2016). Cross-border traffic tripled in both Kenya and Uganda and increased nearly fivefold in Rwanda and thirtyfold in South Sudan (ITU, 2016). That said, since 2018 the ONA has been put in jeopardy due to differing tax policies in the region that have undermined initial gains, leading to the spectre of tax policy killing the goose with the golden egg.²⁰

Prospects (and limits) of private sector provision

Although a weighted sum RPG, requiring participation across markets for the benefits to materialise, unlike transport networks, the ONA was a private sector initiative, sparked by competition among firms. Before the ONA, even companies with networks on both sides of a common border had to build and operate those networks as separate entities, with interconnections possible only through state monopoly gateways. The move to create a common mobile telephone network faced competing national-level interests and potential blockages over rival goods (ITU, 2016) In this case, private sector interests were able to overcome the lack of a formal EAC framework through bottom up problem solving.²¹ As this example highlights, while the aggregation technology nature of the RPG is important to understand, its interaction with political incentives among key actors ultimately defines what and how regional initiatives are implemented. In the end, however, the prospects of ONA will depend on the extent of cooperation by participating states on taxing roaming and other ONA services.

4.3 Hydropower and regional water cooperation along river basins

The third example on regional water cooperation in Africa illustrates the connection to political economy dynamics and the hold-up problem arising under weakest-link RPGs. Most African countries are part of at least one transboundary river basin. Securing their freshwater needs, ensuring sufficient water quality and avoiding environmental disasters depends on the actions of riparian countries. Africa's rivers also offer significant opportunities for hydropower production, with only 5% of Africa's water resources currently utilized, and African ministers seeking to raise this to 40% by 2030. This would both relieve the lack of access to electricity (2 out of 3 people in Sub-Saharan Africa do not have access to electricity) and reduce the carbon footprint on the planet. However, the nature of river basin management means that the actions of one country to block or overuse water flows, whether to fill hydropower dams or supply irrigation, can affect the overall amount available to other countries, requiring agreements among affected governments to avoid a "hold up" by upstream countries.²²

As for other RPGs, African states have set up or inherited specialised intergovernmental river basin organizations (RBOs) and agreed on a wide range of commitments and frameworks to regulate and manage transboundary watersheds in a sustainable manner. In recent years, with the technical and financial support from multilateral and western donor agencies, these have evolved into relatively uniform specialized regional organizations with a comprehensive mandate covering all aspects of sustainable water resource management (Medinilla, 2018).

In practice, however, progress in implementing river basin agendas is often painstakingly slow due to collective action problems when balancing water conservation for fisheries and irrigation with hydropower development, as the Nile and Niger basins both illustrate.

One-way externalities along river basins

A concrete example of the conflicting interests along a river basin is the tension between Ethiopia, Egypt, and Sudan around the Grand Ethiopian Renaissance Dam (GERD) on the Eastern Nile. Upstream development in the Nile basin has long been a source of contention

between Egypt and its upstream neighbours Sudan and especially Ethiopia, where the highlands supply approximately 86% of the water of the Nile river, yet water use is governed by a colonial agreement allocating the majority of the water to Egypt and latterly Sudan. Tensions flared up in 2011, when Ethiopia announced the start of the construction of the 6,000MW dam, which Egypt in particular sees as a direct threat to its national security. The completion of the project is facing delays and stands at around 60%. At the same time, tensions remain unresolved and talks between the Egyptian and Ethiopian authorities have repeatedly broken down in recent years (Swain, 2011).

Under efficient management of water services, all three countries would benefit significantly from the development of the Nile basin, especially in a scenario that combines interventions both upstream and downstream including modernization of existing infrastructure. In practice, however allowing upstream development comes with risks for downstream countries in that it entails a loss of direct control over the intake of water they will see at the border.²³

Ethiopia has an interest in filling the 74 Billion cubic metres reservoir as quickly as possible and operationalizing the hydropower infrastructure (Ethiopia has proposed a timeframe of 4-7 years). Egypt, however, has an interest in extending the filling period to minimize the impact on its own intake, its hydropower infrastructure, and its agricultural sector (Donia and Negm, 2019; Mada Masr, 2018). Overconsumption would occur if the GERD reservoir on the Eastern Nile were to be filled too rapidly or if dry conditions reducing the average annual flow are not met with a commensurate adjustment to the filling scenario, or again because of uncertainties related to climate change. Using the “stock variable” of the Nile would lead to extreme water stress downstream, not the least by reducing critical intake at Egypt’s Aswan Hydropower Dam, which would cause further negative externalities on downstream agriculture which have long relied on wasteful irrigation practices (Baconi, 2018).

The GERD illustrates that the benefits and negative consequences of intervening in transboundary waters are by nature unevenly divided, and subject to hold up given the weakest link nature of river basins as an RPG. The dam site in Ethiopia is located less than 20 kilometers from where the river crosses the border into Sudan. This means that if Ethiopia decides to hold up more water, it will derive a direct economic benefit, yet suffer none of the negative consequences of a reduction in seasonal flow, which will fall unto Sudan and Egypt instead. Figure 5 illustrates the different interests of the three countries affected by the GERD project. The project has been a source of tense diplomatic relations between the three countries, long before construction of the dam started, and has even led to Egyptian threats of military intervention in the past.

Figure 5 Conflicting interests around the Grand Ethiopian Renaissance Dam on the Nile



Source: International Crisis Group, 2019.

Water tensions rarely lead to interstate conflict (Strategic Foresight Group, 2015: 8). Much more common is to overcome the weakest link by striking a deal, using “side payments” (Barrett, 2018; Egan, 2017: 245). Upstream countries will seek to get the support (or at least non-opposition) from downstream neighbours by making certain concessions in relation to the plans themselves (such as the size of a dam reservoir, the rate of fill) – or will try to otherwise sweeten the deal. While Sudan historically sided with Egypt over downstream concerns, it has now warmed up to the GERD because of the prospects of affordable Ethiopian energy and a modernization of its own agricultural sector (Knaepen and Byiers, 2017: 14). Regional institutions such as the Nile Basin Initiative can play a role in bringing parties around the table, but given the hold-up power of upstream Ethiopia, there are limits to the role it can play in shaping the on-going power dynamics and negotiations because of the very nature of the RPG.

Beyond the weakest link nature and hold-up characteristic of river basins, transboundary water cooperation comprises a range of related services that are regional in scope, but each with their own public good characteristics (table 4). By jointly managing a river, the different riparian countries generate RPG benefits such as flood protection and drought mitigation. Benefits from the provision of these RPGs like hydropower and irrigated agriculture, can be realized only if there is cooperation at the regional level.

Table 4 Key water management services

Category	Service	Aggregation technology
Water allocation	Agricultural irrigation	Weighted sum
	Flow management (including flood control)	Weakest link
Infrastructure	Dredging and bank management	Summation
	Hydropower production	Weighted sum
Environment and conservation	Fishery management	Weaker link
	Ecosystem conservation	Weighted sum
	Combating desertification and erosion	Summation

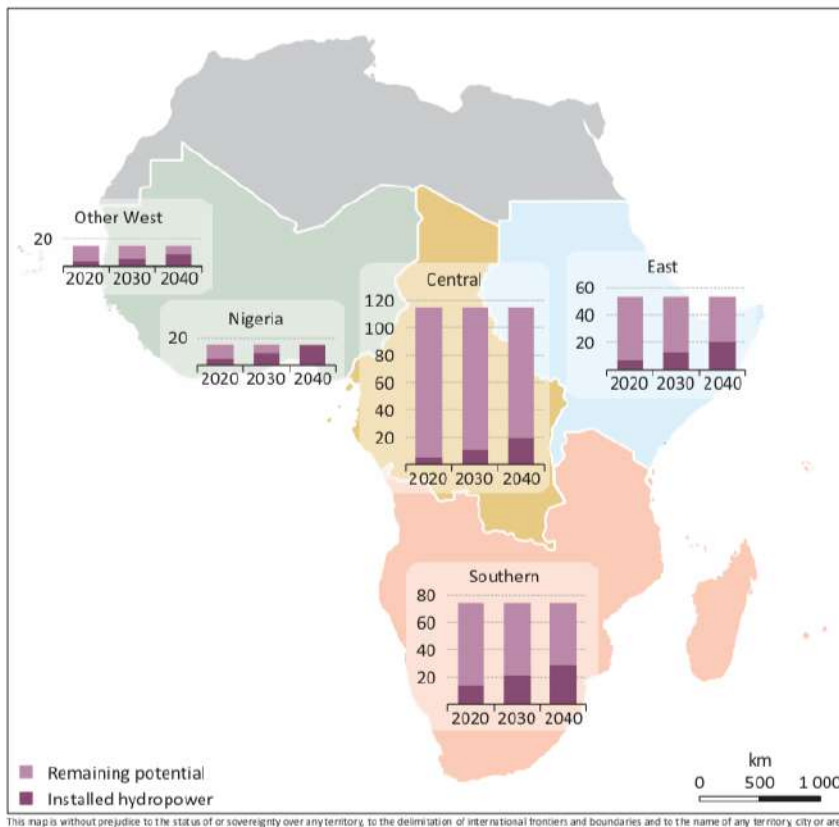
Source: Authors.

4.4 Regional energy cooperation

Regional energy cooperation illustrates the huge potential gains from functioning regional energy markets. Here the benefits hinge on a long list of required critical conditions. Electricity is transported across national grids that connect producers with consumers, serviced by one or more utilities that facilitate the transaction. National grids are generally self-contained, but power can be transferred from one national grid to another through dedicated infrastructure for cross-border power sharing. The potential gains and cost savings of regional energy markets in Africa are rarely disputed—according to the African Union’s Program for Infrastructure Development in Africa (PIDA) Vision (2012), a realistic integration scenario would save \$860 billion over 2014–40 (17% of the cost of electricity), representing an annual gain of \$33 billion.²⁴

Unlike goods trade, electricity is an essential input for all economic activities, is hardly storable, and transport costs are high because of transmission loss. Alternatives to regional supply sources of supply are lacking. This conjunction of characteristics explains countries’ lack of trust and reluctance worldwide to trade electricity across borders. In sharp contrast with trade in goods and services, markets for trade in electricity cannot develop extra-regionally. For these reasons, hydropower capacity across Africa displayed in figure 6 is way below potential.²⁵

Figure 6 Sub-Saharan hydropower capacity and remaining potential

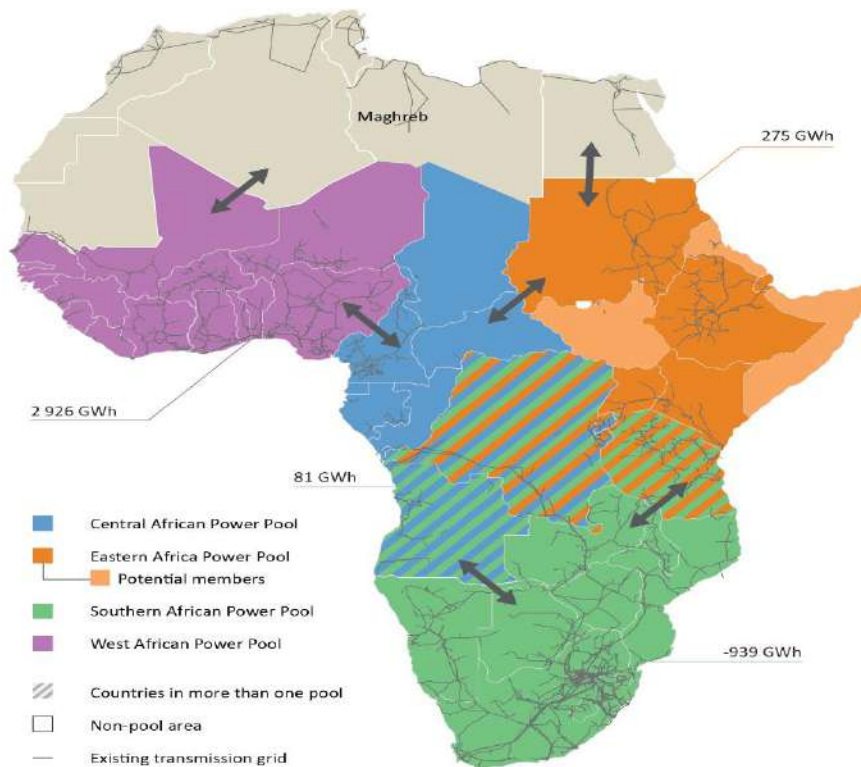


Source: IEA, 2014, 108.

Regional energy cooperation and power sharing, then, are best understood as a regional network which is a summation technology, and thus the regional benefits rely on inputs from all participating countries. At the same time, cross-border infrastructure is a weakest link technology that can undermine the extent of the market, while volumes of generated capacity must be above a certain level to provide commercial viability, adding a threshold dimension. As such, regional energy in fact constitutes a range of RPG attributes that make power pooling problematic.²⁶

Figure 7 shows the six African power pools. These are at varying stages of implementation, with overlapping memberships. The West African, East African, and Southern African power pools all have energy transmission interconnections, but so far only the Southern African Power Pool has a functioning regional market mechanism for channelling a small part of regional electricity trade. In 2015, around 6% of regional electricity trade in the Southern African Power Pool was channelled through the pool's market mechanism (Medinilla et al., 2019).

Figure 7 African regional power pools



Source: IEA, 2019.

Hold-up problems: building confidence in regional power markets

The constellation of RPG characteristics combined with the importance of trust complicates energy pooling since any country depending on electricity from a regional power pool with no alternatives depends on trust with its partners. This explains why electricity sharing takes various forms, ranging from ad-hoc and even temporary arrangements to bilateral, joint ownership and regional markets.

Most regional electricity cooperation relies on stable bilateral power purchasing agreements. Cooperation through bilateral agreements offers stability but fixes the price. For example, Ethiopia is preparing the ground for bilateral electricity trade agreements meaning that the 500 kilovolt High-Voltage Direct Current (HVDC) should enable a 400 megawatt power purchase agreement between Ethiopia and Kenya (Barasa, 2019). However, this does not overcome the hold-up problem associated with weakest link RPGs.

Under a joint ownership arrangement, participants jointly manage the regional good on the basis of a fixed negotiated agreement, as in the Senegal River Development Organization (OMVS, for organization pour la mise en valeur du fleuve Sénégal) grouping Senegal, Mali, Guinea, and Mauritania. Membership involves joint investment and ownership of hydropower and transmission infrastructure, with each country allocated a fixed percentage of the power at a fixed price. The OMVS was originally set up between only three countries, all facing drought in the early 1970s, with strong and relatively stable political and economic ties. Rather than take an open-ended aspirational approach, as many other African river basin organizations have done, the member states set out from the start to develop jointly owned hydropower infrastructure in the Senegal basin. This required support and agreement at various levels.

To this day, the Senegal River Development Organization is seen as a guiding example for water cooperation across the continent, where the joint infrastructure has underpinned the basin countries' diplomatic relations for some time, making further cooperation and investment much easier (Medinilla and Ronceray, 2019). Widespread confidence in the approach, due to its concrete early success, also makes it difficult for countries to backtrack on their commitments, putting the regional organization in a much stronger and even authoritative position toward its member states. It also benefited from the leadership of Senegal, which acted as a "benevolent hegemon" (Bolognesi and Bréthaut, 2016), thus helping overcome the weakest link problem, to the benefit of all.

These arrangements offer energy coordination through fixed contracts that also reduce flexibility and ignore fluctuating demand in different places. As an alternative, Eastern, Southern, and Western Africa have established power pools to create a regional market mechanism for their members to engage in mid to short term cross-border electricity trade with each other. The cost of access to a regional electricity market is a combination of demand and supply and investment in interconnections, grid harmonization and maintenance. In the Eastern, Southern, and Western Africa power pools, the ultimate goal is to establish fully regionalized energy markets, in which power can be traded on the basis of near-real time demand between different countries and their utilities. Thus far, only the SAPP has launched a functioning regional market mechanism to channel a small part of regional electricity trade.

The economic case for regional markets is clear: energy-producing countries get access to larger markets. They can reduce grid losses by selling to customers close to where energy is produced. Countries and areas with energy deficits or limited generation potential import reliable power from outside their borders. And grid development at scale allows countries to save resources by reducing their dependence on portable solutions and expensive and often outdated thermal power plants (Medinilla et al., 2019).

Regional energy markets, a threshold RPG, require a minimum participation. In addition to a regional regulatory framework for regional power pooling, the following critical conditions must be met:

1. Sufficient excess installed capacity in net producing countries. Because of periods of peak demand, a regional market can perform as designed only if installed capacity exceeds both national and regional demand.
2. Reliable interconnections to transfer energy from one grid to another.
3. Independent utility companies free from political pressure and able to engage in short-term electricity trade on a regional market.
4. Regionalization of regulatory policy (to reduce the vulnerability to national regulatory systems).

These conditions are not yet in place in Africa's regional power pools.

4.5 Connectivity through road and logistics networks

As trade barriers fall, inefficient infrastructure for the transit of goods becomes a greater hindrance. Because trade liberalization has internationalized communication infrastructure, the associated networks operate more efficiently when they are organized internationally. Further, regulation coordinated regionally reduces the potential for regulatory capture by the (often) monopolist national regulator.²⁷

Africa's combination of low urbanization and poor connectivity keeps a large part of Africa's population from having access to national and global markets.²⁸ For a sparsely populated country, the quality of physical infrastructure, particularly the road network, is especially important. Africa's road density of 3.4 kilometers per 1,000 people is less than half the global average, while its paved road density of 0.7 per 1,000 people is less than a fifth the global average (Gwilliam, 2011). Compared with the United States, the cost of transporting goods is estimated to be 3.5 times higher in Ethiopia and 5.3 times higher in Nigeria (Atkin and Donaldson, 2015). In landlocked Ethiopia, a drop in tariffs on inputs was associated with increased productivity for firms with access to quality roads, but not usually for other firms (Sanfilippo et al., 2018).

Indivisibilities and weakest links

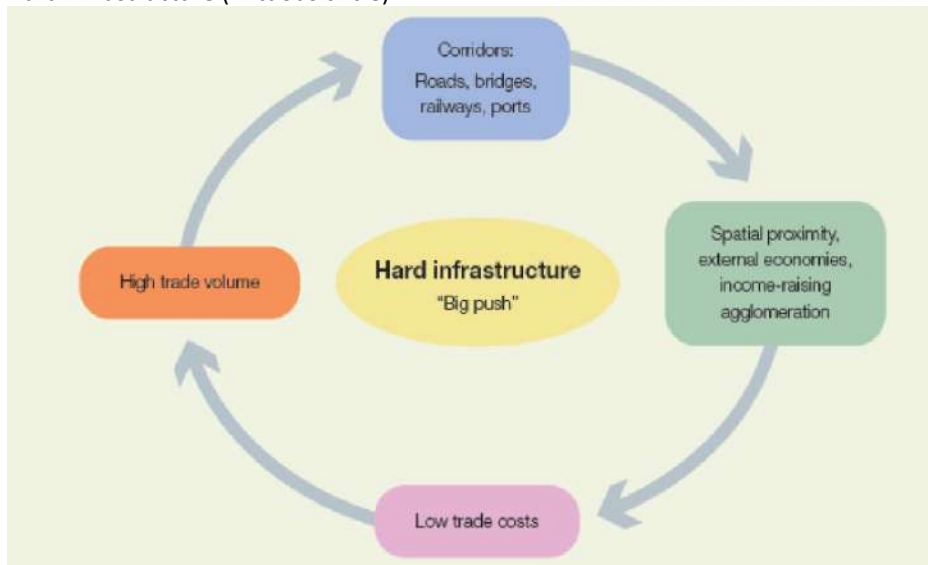
Indivisibility in hard infrastructure projects makes them inappropriate for the private sector because sunk costs are too high and once built, subject to expropriation by the state. Regional road infrastructure along a corridor linking countries is also a weakest link aggregation technology, making it attractive for external support. Over 2012–2015, transport accounted for 14% of World Bank lending and 22% of African Development Bank disbursements across Africa. After support for population policies, infrastructure and storage receives the second highest share of RPG support from official development assistance. The accumulating evidence on hard infrastructure strongly supports the big push view of road infrastructure, where a cycle of improving hard infrastructure, lowering trade costs, and increasing trade volumes justifies the high share of funds this sector receives, in support of the view of circularity as a “virtuous circle” (figure 8) (Gwilliam, 2011).

If hard regional transport infrastructure is improving in Africa, logistics markets are not. Logistics services—the soft infrastructure needed to operate transport corridors—complement the hard infrastructure of roads and railways and influence prices (figure 8). Trade costs due to poorly functioning logistics markets may be a greater obstacle to trade than tariffs and nontariff barriers. Poorly functioning logistics markets illustrate how circularity can be a “vicious circle” resulting from circularity.²⁹

One reason is that all African infrastructure straddles jurisdictions. Standards harmonization or mutual recognition agreements would reduce trade costs and weaken the power of domestic providers (Kessides et al., 2011). Broad regional benefits would require all countries to apply the same regulations, or mutually recognize those of REC partners as in the EU, a difficult-to-envisage outcome in the heterogeneous memberships in each REC. Then internal political economy dynamics favour the status quo.

Figure 8 Hard and soft infrastructure are complementary in reducing trade costs

Hard infrastructure (virtuous circle)



Soft infrastructure (vicious circle)



Source: AfDB, 2019.

Chaponda (2011) recounts the case of the Maputo Development Corridor (MDC), considered a success due to underlying incentives and high-level commitment in a specific context. The presidents and transport ministers of Mozambique and South Africa championed the project in very specific post-apartheid and post-civil war conditions, with private sector anchor investments and indeed financing to address the “weakest link” risk of lack of Mozambican finance for the project. The fact that only two countries were involved reduced the dangers of hold-up, while the contributions and potential benefits were quite clear. The success in combating river blindness was also a case of persistence in collaboration across agents: an international drug company, African governments, NGOs, multilateral agencies, and the communities themselves.

The Maputo Transport Corridor offers an example of problem solving between two economies with very different incomes, which might have led to a weakest link barrier to benefits. After the end of South Africa’s apartheid and of Mozambique’s civil war, the

countries' leaders discovered a joint interest in an additional, closer outlet to the sea for South Africa's industrial heartland via Maputo, which would reduce congestion in the port of Durban. The transport corridor was completed in the late 1990s. It needed each country to pay by investing in the corridor and pursuing trade and investment benefits. This prevented free riding. To avoid a coordination failure, it required close political dialogue (bolstered by the context of post-apartheid and post-civil war reconciliations).

The corridor's weakest link aggregation technology means that poor connections on one side of the border would lower the overall benefits to both countries. That feature encouraged both sides to ensure that the project was well-financed and harmonized in operation, with a cross-border public-private partnership agreement for road construction and maintenance. Road building and maintenance are logistical and thus politically simple. That said, day-to-day operation at the border requires behavioural changes by agencies and agents, in a more problem-driven attempt to target local issues to provide wider regional gains.

5. Towards a problem-driven approach to RPG provision

5.1 The domestic politics of implementation for RPGs

RPG provision requires a series of public policies and services to be implemented at the local, national and regional levels. Even if heads of state agree to a free trade area, for example, facilitating trade depends on instructing, empowering, and motivating customs officers at the border to change the way they work. Similarly, the functionality of power pools depends on national utility companies, whose efficiency depends on internal management and its authorization by the political jurisdiction to operate, innovate, and collect and invest resources. This requires progressive identification and implementation through what Andrews et al. (2015) call iterative "find and fit."

Some policy problems are easier to address than others, depending on how far they deviate from business as usual. These are particularly difficult to resolve in the African context of fragmented political and geographical landscapes with many artificial borders.³⁰ Factors such as the level of decision-making, the degree of local discretion, the demand for change, and the required level of innovation for implementation together define how far the political and organizational environments can support change. If some of these factors are misjudged or ignored, policies become difficult or even impossible to implement, regardless of the government's motivation. Superficial or temporary change often follows and ultimately undermines the provision and thus the benefits of an RPG.

As the foregoing examples suggest, though many RPGs have a summation characteristic, and so rely on the contributions of all participants, coordination is often focused on what is available as a best shot approach. A common example is the creation of a new dedicated agency or regional strategy, without ensuring the necessary legitimacy or resources, or indeed follow up and monitoring of progress. Creation of the agency or program responds to political or external pressure for change, but also represents a miscalculation of what is required. As discussed, in some countries and regional organizations, "ghost" or "zombie" institutions proliferate as remnants of successive administrations' attempts to implement a service without building the capabilities and incentives needed for it to actually work.

Many river basin organizations might be considered zombie institutions. Governments that agree on the need to sustainably manage shared water resources set up regional institutions to spearhead cooperative activities. The institutions often seek to replicate successful

examples, such as cooperation in the Rhine basin or the Senegal basin, yet real progress fails to ensue (Medinilla, 2018). The reason is that governments and their partners—the funders—try to address a problem using a best shot solution based on a written agreement and some administrative resources. But the governments have failed to deal with the real barriers to change and end up with regional institutions with a mandate but little to no power to achieve it.

5.2 A six-step iterative approach for policymakers

The bottom-up iterative RPG framework aims to avoid some of the pitfalls of top-down regional cooperation (table 5).

Table 5 Six steps of an iterative RPG approach for policymakers

<i>Step</i>	<i>Purpose</i>	<i>Key questions</i>
1. Analyze the problem	Identifying the need or ambition that requires regional collective action	<ul style="list-style-type: none"> • Why is greater regional cooperation needed, and for whom? • Which regional public good (RPG) is underprovided?
2. Understand the type(s) of RPG	Understanding the structural factors that shape country interests in an RPG	<ul style="list-style-type: none"> • What type of RPG is underprovided? • How does this shape the long-term interests of countries in providing or not providing the RPG? • What other factors—geographic, historic, economic, political—define interests and incentives around providing the RPG?
3. Identify necessary services and policies	Identifying more local/admin level incentives faced in providing an RPG and how the specific RPG characteristics inform countries' interests and incentives for contributing	<ul style="list-style-type: none"> • What services or solutions are needed for the RPG to be provided? • What are RPG characteristics of those services or solutions? If a weakest link RPG, provision will require getting mobilizing all beneficiaries. If a weighted sum RPG, mobilization may be partial. • What minimum combination of services and proposed solutions is needed for successful provision of the RPG?
4. Choose a suitable coalition and framework for cooperation	Choosing a workable and feasible cross-border or regional framework and set of actors for the provision of an RPG	<ul style="list-style-type: none"> • Is the issue more likely to be successfully addressed through national, through bilateral, cooperation; through a (sub-) regional group of countries; or through a combination of these? • Does everyone need to be equally on board, or just a few, for the RPG to be provided? • Does a suitable regional framework already exist? Is it flexible enough? • What coalitions or alliances need to be created or promoted for the RPG to be provided?
5. Begin implementation process	Building the capabilities to ensure RPG provision in an adaptive way	<ul style="list-style-type: none"> • How can national contributions be incentivized? • At what level should most efforts be focused to ensure real organizational change—for example, the regional level for best shot or the local level for weakest link and implementation-intensive service delivery? • What short-term or partial solutions can change the environment and increase traction for regional cooperation for summation RPGs in particular?

		<ul style="list-style-type: none"> ● How can negative forces and disincentives be lessened to muster support for implementation?
6. Adapt and repeat	Adapting solutions to lessons learned	<ul style="list-style-type: none"> ● What has not worked in the past, and why? ● Does the initial problem analysis (step 1) hold? ● What can be improved, and how? ● Do previous actions open new doors for advancing RPG provision?

Source: Authors inspired by Andrews, Pritchett, and Woolcock (2017), among others.

Rather than the usual top-down approach, the approach in table 5 starts by asking what domestic issue or problem needs addressing through the provision of an RPG. Regional cooperation is not an objective but a means to an objective.

Building the capabilities of countries and organizations to address the identified problems is best viewed as an iterative process, what Andrews et al. (2015) call the “Problem-Driven Iterative Adaptation” approach. Their approach, proposed to escape the capability trap at the national level, applies even more forcefully at the regional level because regional cooperation takes place through repeated cycles of problem definition, implementation, and adaptation. These repeated cycles increase the feasibility of further cooperation, provide greater interconnectivity, and open avenues for cooperation.

6. Concluding thoughts

The AU 2063 Vision for the Africa we want is a huge transformative project across the African mosaic. Much of the past integration agenda has centered around removing barriers—many policy-imposed—that impede the functioning of markets. Because it involves releasing resources, it is part of the negative agenda. By contrast, the AU2063 project is largely about dealing with situations where markets do not exist. Because it requires resources, it is part of the positive agenda.

This paper argues that this transformative agenda is best viewed through the lens of regional public goods (RPGs) to highlight the reasons for regional implementation gaps. The main argument is that the regional cooperation and integration processes envisaged under Agenda 2063 – and through the regional economic communities (RECs) and other regional organizations (ROs) – are best understood in terms of RPG provision. Examples developed in the paper show that the change in focus would help move away from an emphasis on top-down, regional organizational forms and strategies that follow the linear approach to market integration, towards a focus on identifying the cross-border problems to be addressed, and therefore the functions required to do so through regional cooperation and integration. This would entail a move toward a bottom-up approach to understanding and addressing regional problems in the context of actors and interests rooted at the national and local levels.

The aggregation technology terminology and other RPG characteristics presented here seek to help assess the prognosis for the projects presented in the paper. Notably, many flagships in the AU2063 list in table 2 are weakest-link RPGs. Few among the projects on the list are best shot RPGs, where some benefits materialize even when there are few providers. In many cases, projects must grapple with characteristics that contribute to under-provision of the RPG. For example, the effective implementation of transport networks or regional power pools, combine a summation characteristic complemented by a weakest link across corridors. For others, a threshold must be met for any benefits to materialize. This is the case in the

ratification threshold for continental agreements, but also for the commercial viability of regional power pools.

Different actors have incentives shaped by the RPG characteristics. Where the One Network Area in East Africa was a summation RPG, challenges were overcome by the drive of the private sector, which went ahead despite the lack of a regional regulatory framework. In river water management, the weakest link characteristic conveys hold-up power to upstream countries. For the Senegal river basin, leadership by Senegal, a hegemon, resulted in the joint ownership of hydropower facilities.

For the AfCFTA, the prognosis is uncertain. Overall benefits depend on the economic size of implementing members, and thus are weighted sum. Some key aspects for realizing the agreement, such as the NTB reporting mechanism, have better shot characteristics, since a handful of leaders can enforce an ambitious agenda, but enforcement requires a functioning dispute settlement mechanism which is weakest link. Some benefits, like regulatory convergence or recognition are non-excludable, contributing to free-riding at the early institution-building stage.

Adopting a problem-driven approach to regional cooperation is not in itself a panacea to past regional integration frustrations. Three examples summarized here illustrate the find and fix six-step iterative approach proposed for policy-makers. In all three examples, varying degrees of cooperation were achieved through bottom-up problem-solving via iteration rather than following the script from imported best-practices.

- The Senegal River Development Organization sought from the start to develop jointly owned hydropower infrastructure, which has then underpinned the basin countries' diplomatic relations, making further cooperation and investment much easier.
- By contrast, in the tense environment among Egypt, Ethiopia, and Sudan, the Nile basin initiative has focused on technical, more apolitical projects, using training and knowledge sharing to establish formal and informal working relationships and trust among those working on water issues in the riparian countries. The initiative also championed sub-basin arrangements to foster cooperation closer to the rivers and lakes themselves, partially bypassing the longstanding conflict between Egypt and its upstream neighbours. Even though these solutions are far from perfect, they have had a positive impact on regional cooperation in an attempt to overcome the weakest link characteristics that gives Ethiopia real hold-up power over the water resources.
- For the Maputo Transport Corridor between South Africa and Mozambique, problem solving and political dialogue took place between two economies with very different per capita incomes. Political dialogue (bolstered by the context of post-apartheid and post-civil war reconciliations helped overcome weakest link barriers, even if day-to-day operation at the border remains subject to more micro-level coordination problems and incentives. Digitizing border procedures is an example of best shot cooperation.

Persistent implementation failure erodes the legitimacy of regional cooperation and cannot be resolved by rushed, overambitious unrealizable policy statements. Building capabilities at the source by promoting implementable cross-border solutions for regional problems offers a new dynamic for regional actors in Africa. Taking an RPG approach – a conceptual framework for regional cooperation needs and problems – can provide operational guidance for regional integration and cooperation through workable solutions that are independent of

existing diplomatic frameworks. The examples in this paper make a case for the RPG and political economy frameworks as workable solutions to collective action problems. Applying them starts with understanding the incentives at play in moving from regional commitments to implementation. While that start helps to explain why regional initiatives advance or not and why there are blockages, it can also identify entry points for policy reform or support.

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Annex A Typology of regional public goods

A regional public good (RPG) is any good, commodity, service, system of rules, or policy regime that is public in nature and whose benefits extend beyond a single nation. Publicness means that markets for these goods and services are absent (a “market failure”). Insufficient participation, flaws in the design or in the application of rules (an “institutional failure”) typically characterize RPGs. Often people and countries that have not contributed to the good, service, or policy regime cannot be excluded from consumption, the well-known free rider problem.³¹

RPGs generate benefits across countries through collective action by the participating countries. Clean water and regular flow along shared river basins, the single African Air Transport Market initiative of 2018, the establishment of the East African Community Customs Union in 2004 and the East Africa One Network Area (ONA) roaming initiative discussed in the text, are all specific examples of RPGs resulting from collective action. For each example, benefits are spread over several countries, hence the RPG appellation.

Importantly, because each example is characterized by externalities (i.e. several countries benefit from the provision of the good or service), without cooperation, provision would be less as countries would not benefit fully from the spillovers because they would be under-provided.³² As discussed in the text, to boost structural transformation across Africa, a first-order list of necessary RPGs would include the development of cross-border infrastructure connectivity (hard and soft), dealing with transnational issues like environmental degradation and the spread of infectious diseases. The flagship projects in the Agenda 2063 presented in table 2 are all RPGs.

Table A1 gives a basic typology of public goods that applies at both the national and regional levels. The demand and supply factors that determine the availability of public goods at a national level also apply to the availability of RPGs. In general, public goods display two properties:

1. Their benefits may be partly or wholly **non-rival in consumption** (that is, consumption by one does not reduce availability to others).
2. Their benefits may be completely or partly **non-excludable in consumption** (that is, it is hard to stop others from benefiting).

Table A1 describes the categories of public goods.

Table A1 A typology of public goods

	Rival	Non-rival
Excludable	<p>*Pure private good Example: a loaf of bread</p>	<p>*Impure public good Club good Example: a customs union</p>
Non-excludable	<p>*Impure public good Common-pool resource Example: River basins</p>	<p>*Pure public good Example: Clean air, combating desertification in the Sahel</p>

Source: Authors.

Table A1 takes a loaf of bread as the example of a pure private good because it is rival in consumption and fully excludable (under an enforced property rights regime which requires a functioning State). At the opposite end of the spectrum, reducing air pollution or combating desertification in the Sahel is a pure public good as it yields non-rival benefits that are non-excludable for those in the area. There are two types of impure public goods: common pool resources and club goods. Prognosis for the supply of private goods is high with the market mechanism rationing supply via the market price.

Common pool resources like the fish population in a lake or in coastal waters of a country's Extended Economic Zone (EEZ), or forested areas are mostly non-excludable because it is difficult to design and enforce property rights. Moreover, because there is rivalry in consumption, common pool resources are at risk of depletion or extinction. For these reasons, especially in the institutionally weak governance environment of Africa, the prognosis for preservation and sustainable use of common pool resources is often bleak.

For club goods, the prognosis for their provision is better. Impure public goods, like a customs union which entails rights (market access) and obligations (applying the club rules) have a better prognosis because it is easier to exclude non-contributors. That said, Fernandez and Rodrik (1991) show that there is a natural policy-making bias towards the status-quo whenever some of the gainers (or losers) from trade reform cannot be identified ex ante, even when individuals are risk neutral, rational, and forward looking – that is, while the RPG characteristics may be favourable, the political economy dynamics may yet undermine these objectives.

¹ The 8 RECs are: the Arab Maghreb Union (AMU), the Common Market of Eastern and Southern Africa (COMESA), the Community of Sahel-Saharan States (CEN-SAD), the East African Community (EAC), the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS), the Inter Governmental Authority on Development (IGAD), and the Southern African Development Community (SADC). Other notable regional organizations oriented towards economic integration include the Communauté Économique et Monétaire de l'Afrique Centrale (CEMAC), the West African Economic and Monetary Union (WAEMU), the Southern African Customs Union (SACU), the West African Monetary Zone (WAMZ) and the Mano River Union (MRU).

² <https://au.int/en/agenda2063/overview>.

³ These include schedules of tariff offers, rules of origin, and a dispute settlement mechanism. Some trade has reportedly taken place under the AfCFTA. Ethiopian Airlines, DHL and the African Electronic Trade Group are said to have partnered to ship the first goods under the agreement on 1 January 2021, taking goods produced in eSwatini to various countries that had signed and ratified the AfCFTA, including South Africa and Ethiopia. Other reports talk of two Ghanaian firms, a manufacturer of alcoholic products and a cosmetics company, having exported their products via air and sea freight under the AfCFTA in early January. See: <https://trade4devnews.enhancedif.org/en/op-ed/implementing-afcfta-2021> and http://www.xinhuanet.com/english/2021-01/06/c_139644171.htm.

⁴ <https://www.ft.com/content/bc612590-d38e-4d08-a1e1-0e7f5e19be30>

⁵ RPGs have received less attention in reports (recent exceptions include Estevadeordal and Goodman (2017) and Asia Development Bank (2018).

⁶ Melo et al. (2020a) report on the simplest progress yardstick: a “before-and-after” comparison of intra and extra-regional trade for the eight African RECs with three comparator groups: ANDEAN, ASEAN and MERCOSUR. Except for ASEAN, all intraregional imports have remained broadly stable, never exceeding 5% of GDP.

⁷ Initiatives such as the AU Protocol on Free Movement of Persons, Right of Residence, and Right of Establishment, approved by heads of state in January 2018, “has struggled to gain country ratifications” in what is described as a “crisis of implementation” (UNECA, 2019). Countries signing the Single African Air Transport Market (SAATM) increased from 23 to 28, including Ethiopia, South Africa, Rwanda, Nigeria, and Kenya, but by April 2019 only 14 countries had signed a Memorandum of Implementation to put the agreement into practice in their countries.

⁸ While UEMOA was officially launched in 1994, Francophone West African countries have effectively been in a monetary union using the Franc CFA since 1945.

⁹ See for example: <https://www.theestafrican.co.ke/news/ea/DR-Congo-entry-into-EAC-will-be-a-game-changer/4552908-5158402-barl6d/index.html>.

¹⁰ See: <http://desc-wondo.org/category/thematiques/enjeux-internationaux/enjeux-geostrategiques/>.

¹¹ Nonetheless, most donors focus on state-led ROs, particularly the African Union (AU) and the regional economic communities (RECs)" (Soderbaum and Brodin, 2016).

¹² The annex classifies the four types of public goods (and RPGs). Bucholz and Sandler (2021) provide an extensive review.

¹³ Though an apparent success, recent reports suggest a collapse in late 2018 due to discords on tax policy among states in 2018 leading to major revenue losses among key participants. See, for example: <https://www.theestafrican.co.ke/business/One-Network-Area-Roaming-charges-are-back/2560-4804088-oh7wsfz/index.html>; <https://www.theestafrican.co.ke/oped/editorial/434752-4805030-upf25h/index.html>.

¹⁴ Some, like flagships 2, 8, 9, 10, 11, 12, 14, and 15, would appear to have fewer co-benefit spillovers with the others on the list.

¹⁵ The generally weak governance environment across Africa also plays an important role in the low overall provisions of RPGs. Provisioning will be low for those with a pure public good characteristic because of free-riders that will be difficult to exclude due to costs needed to exclude free-riders for club goods.

¹⁶ This section draws from Melo (2020).

¹⁷ However, according to the ITC, in June 2020, 29 African countries had reported 43 temporary trade measures on medical-related products – concerned products include personal protection equipment, pharma products, hand sanitizer and certain food products – of which 22 were liberalizing (i.e. reduction on barriers to import) and 21 were restrictive (export restrictions/bans).

¹⁸ The continued hoarding of vaccines by the manufacturers of Covid-19 vaccines for their populations is the latest example that vaccines require global cooperation; equitable access to vaccines cannot be treated as a charitable matter. It is questionable that COVAX will meet its target of distributing 2 billion vaccine doses by the end of 2021 without a hegemon country to take the lead. See Bollyky and Bown (2020).

¹⁹ The share of the digital economy is predicted to increase from 15.5% of global GDP in 2016 to 25% in less than a decade (World Bank, 2018: 14).

²⁰ See news articles such as this: <https://www.theestafrican.co.ke/tea/oped/editorial/editorial-why-the-one-network-area-can-no-longer-be-reached-1404408>. To maintain the ONA, governments must keep improving the regulatory framework to eliminate charges for receiving voice calls while roaming, waive excise taxes and surcharges on incoming ONA voice calls, and establish wholesale and retail price caps on outbound ONA traffic. These steps also require mobile network operators to renegotiate with their roaming partners to reduce wholesale tariffs on cross-border calls.

²¹ <https://www.theestafrican.co.ke/tea/oped/editorial/editorial-why-the-one-network-area-can-no-longer-be-reached-1404408>.

²² The hold-up here refers to the situation where upstream and downstream parties refrain from cooperating because of concerns that they may give the other party increased bargaining power and thus reduce their own profits.

²³ Whittington, Wu and Sadoff (2004) estimated that the total (potential) annual direct gross economic benefits of Nile water utilization in irrigation and hydroelectric power generation could be between US\$7–11 billion annually, excluding the costs of building and operating infrastructure.

²⁴ See <https://www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/PIDA%20brief%20Energy.pdf>.

²⁵ IEA (2020) estimates that solar power is 20%-50% cheaper today than in 2018 implying that electricity needs in Africa in coming years might be less dependent on regional markets with greater supply from national sources. See annex B of the IEA report.

²⁶ Oseni and Pollitt (2015) note that electricity is the least traded form of energy internationally and discuss why.

²⁷ See Kessides, Noll, and Benjamin (2011) for further discussion and a discussion of the West African Telecommunications Regulatory Association.

²⁸ Africa is the least urbanized region in the world, with just 43% of the population living in urban areas compared with more than half in other regions (UNDESA, 2019) In Europe, doubling city size has been estimated to boost productivity by 3%–8% (Collier and Venables, 2009). In Africa, increased urbanization would presumably also raise productivity. Increasing market access is a priority for urbanization.

²⁹ Teravaninthorn and Raballand (2009) were the first to show systematically that in logistics markets, prohibition of cabotage (the transport of goods or passengers between two places in the same country by a

transport operator from another country), rather than road conditions and road controls, contributed most to vehicle operating costs. They showed that the operating costs (the costs of “producing” transport) of trucking fleets were similar to those in Europe but that transport prices (the prices paid by users) were much higher.

³⁰ Ethnic partitioning is the strongest in Africa: the mean share of an average country’s population that comes from partitioned ethnicities is 47% while for non-African countries it is 18.2%. This mechanically increases spillovers and interdependencies. The geography is also fragmented with the highest share of artificial borders (80%, the highest for any continent). Michalopoulos and Papaiaonnou (2016) estimate that conflict intensity is approximately 40% higher, the conflict duration 50%-60% higher, and the likelihood of conflict 8% higher in the homelands of partitioned groups.

³¹ Sandler (2006) discusses Regional Public Goods and gives examples of Regional Organizations that supply RPGs. Buchholz and Sandler (2021) survey the field. They discuss four properties of GPGs—benefit non-rivalry, benefit non-excludability, aggregator technology, spillover range and the discuss the distinction between RPGs and GPGs

³² Provision of a Public Good is optimal if marginal costs of supplying the good or service is equated to the sum of marginal benefits across each recipient so that the externality is in effect eliminated (i.e. internalized). Evaluating the benefits of this internalization is complicated even in the relatively simple case of a communicable disease. ADB (2018, Box 7.4) summarizes estimates regional spillovers of the Greater Mekong Subregion Health security project in terms of health status expressed in disability-adjusted life-years.

“Sur quoi la fondera-t-il l'économie du monde qu'il veut gouverner? Sera-ce sur le caprice de chaque particulier? Quelle confusion! Sera-ce sur la justice? Il l'ignore.”

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