

PALESTINE: IN STATU INNOVANDI

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Abstract. Rebuilding Palestine as a nation is regarded one of the world's most difficult state building processes. It has to be supported by sound economic development. Innovation is a key factor for economic progress and competitive growth. The authors explore how the development of the innovative capacity of Palestine can be fostered and supported, and suggest a specific concept of an innovation ecosystem as a useful framework for a systematic approach and strategy formulation. Based on extensive field interviews with innovation actors, the authors outline a future innovation ecosystem for Palestine, which can contribute to the Palestinian economic strategies. The submission offers an alternative view on how the economic progress of a developing country in general and the Palestinian Territories in particular can be advanced.

Keywords: innovation ecosystem, developing country, strategy, state building, 7i framework, Palestine.

Jel classification: O21

1. Introduction: innovation as driver of economic progress

Palestine (i.e. the Palestinian Territories) is a developing nation *in statu nascendi* carrying the burden of an epic conflict on a global scale. Given the longevity and intensity of the conflict with Israel, rebuilding Palestine as a nation is regarded one of the world's most difficult state building processes (Rubin 2001). The state-building process in Palestine has to be supported by sound economic development despite the numerous restrictions on the movement of people and goods imposed by the Israeli occupation. We build our argument on the widely held assumption that innovation is a key factor for economic progress and competitive growth. When exploring the question of how the development of the innovative capacity of Palestine can be fostered and supported, the concept of an innovation ecosystem provides a useful framework for a systematic approach and strategy formulation.

In this paper, we attempt to lay out the main features of Palestine's innovation ecosystem. As we illustrate below, hard data is very scarce to support this effort with empirical evidence at this point in time. Many of our conclusions must therefore remain tentative and most of our recommendations remain vague. We consider this draft as a starting point which will be expanded in further detail in the course of an iterative process.

We use a broad concept of innovation based on Judy Estrin's "Sustainable Innovation", which is described as a culture, where we have a continuous flow of new ideas, new services, new products, new processes, which are needed to address the major challenges that we face (Glenn 2008). In this wide definition of innovation, "without innovation, nothing happens" (D'Auria 2008). This is equally true for societal development in general and state-building in particular; none of the associated prevailing problems will be solved without innovation.

1.1. The context of effective state-building

There is a broad understanding that state-building is about controlling violence, establishing legitimacy and building capable and responsive institutions so as to foster a shared sense of the public realm. These are all long-term and potentially conflict-ridden processes. There is not much conceptual clarity with regards to the terms 'state-building', 'fragile states', 'nation-building', etc., especially in policy usage. State-building, nation-building, governance and democratization should be understood as processes that are overlapping in several respects (Fritz, Menocal 2007).

One specific US-American definition for nation-building is that of a military operation with a strategic goal as to defend US American security and

economic interests (and also trying to establish democratic rules). This is achieved by changing a regime or backing an otherwise collapsing one, the deployment of large numbers of U.S. ground troops and the use of American military and civilian personnel in the political administration of target countries (Pei, Kasper 2003).

The Rand report offers a different definition of nation-building. It says that nation-building attempts to “bring about fundamental societal transformations” (Dobbins *et al.* 2007). Accordingly, it proposes a hierarchy of nation building tasks, “which may be prioritized as follows:

1. *Security*: peacekeeping, law enforcement, rule of law, and security-sector reform;
2. *Humanitarian relief*: Return of refugees and response to potential epidemics, hunger, and lack of shelter;
3. *Governance*: resuming public services and restoring public administration;
4. *Economic stabilization*: establishing a stable currency and providing a legal and regulatory framework in which local and international commerce can resume;
5. *Democratization*: building political parties, free press, civil society, and a legal and constitutional framework for elections;
6. *Development*: fostering economic growth, poverty reduction, and infrastructure improvements” (Dobbins *et al.* 2007).

Nation building can be seen from an external perspective, such as from a donor state’s point of view, as well as from a state’s internal perspective, taking on additional dimensions like national identity and national pride. Journalists sometimes use nation-building to refer to government policies that are designed to create a strong sense of national identity (Reverso 2011).

Corruption and too much interference from the outside can cause serious damage. “Donors face (at least) three significant challenges in their engagement with state-building. These include political economy challenges, such as corruption and neopatrimonialism, which can fundamentally hamper the state-building process; a knowledge gap about what works in providing external support for various state-building domains; and tensions embedded in the state-building model that the international community is currently pursuing” (Fritz, Menocal 2007).

However, in the long run, in order to be successful, state-building cannot be induced from the outside. “State-building efforts need to be shaped and led from within if they are to be legitimate and sustainable: If state-building efforts are to be legitimate and sustainable over time, the international community (including donors) needs to let domestic

actors take centre stage. International actors have a role to play in accompanying and facilitating state-building processes, but they need to provide sufficient space for domestic actors to develop their own policies (Fritz, Menocal 2007).

1.2. State-building and economic success

While economic development is an important factor for the success of state-building efforts (Dobbins *et al.* 2007), poor economic performance has the potential to translate into state failure (Cabe 2002). Also, rebuilding the economy is crucial to the state-building success especially with regards to generating employment (Fritz, Menocal 2007).

Thus, economic growth is critical to reduce poverty. “Research that compares the experiences of a wide range of developing countries finds consistently strong evidence that rapid and sustained growth is the single most important way to reduce poverty. A typical estimate from these cross-country studies is that a 10 per cent increase in a country’s average income will reduce the poverty rate between 20 and 30 per cent” (DFID 2008).

Given the unique political context of Palestine, as a consequence of the restrictions on the movement of people and goods imposed by Israel, real GDP per capita has fallen sharply in 2007 with poverty rising at the same time. The virtual closure of Gaza’s crossings since June 2007, following the seizure of the densely populated coastal strip by Hamas, has caused the economic and humanitarian situation in Gaza to deteriorate sharply. As of October 2007, 90% of the manufacturing businesses had been forced to close down. In this context it may be of importance that the private sector is seen as playing a significant and resilient role in the revival of the Palestinian economy (DFID 2008a).

Addressing another aspect in the process of state-building, economic success is also a means to bolster national identity and pride. A survey conducted in 24 countries shows that pride in economic achievements in fact matters everywhere (Evans, Kelley 2002). This is especially true for a nation *in statu nascendi* like Palestine, which requires a serious paradigm shift in development to move closer and link up with the global economic system. In recent years, Prime Minister Salam Fayyad has repeatedly emphasized the need for a new spirit of resilience and active engagement to mobilize around the purpose of state-building despite the seemingly insurmountable political and physical obstacles to control one’s own destiny. In August 2009, Fayyad embodied this new spirit in the form of a two-year state-building plan called

“Ending the Occupation, Establishing the State” (Palestinian National Authority 2009).

Building on this spirit, we believe that outlining a future innovation ecosystem for Palestine can contribute to the Palestinian economic strategies as to support its advancement into a full member of the international community. The emergence of an innovation ecosystem is a different type of development model that emphasizes the mobilization of a people’s own efforts leveraging the untapped potential that is so essential in the attempt to stand on one’s own feet and overcome the status quo of aid dependency. Assessing and developing the innovation capabilities of Palestine is an important building block in this regard.

2. Palestine today – a unique situation

The situation in Palestine is unique. Israel maintains full control over land and people, the expansion of settlements is ongoing, the “Separation Wall” is about to be finished, and East Jerusalem is cut off from the rest of the Occupied Palestinian Territory lost. Israeli policy is driven by interests of maximum land control and ethnic demographic majority in the face of high population growth among the Palestinian population. Gaza remains under full control and is effectively cut off from the world; the dissected West Bank is fully controllable and under constant surveillance. As a consequence of the Israel military occupation, travel restrictions, breakdowns of infrastructure, supply shortages, and import and export restrictions constitute the daily challenges for the Palestinian economy and society.

Long-term military occupation and economic development seem to be mutually exclusive bordering on an absurd idea to economically develop a country while its resources are being confiscated, the land being colonized, and the economy cut off from direct trade with the international community.

For a long time, primarily in Gaza, *de-development* has been the norm. In other words, Palestine has not been experiencing genuine economic development, but has been *de-developed* despite one of the highest levels of international financial and technical assistance in the world with indicators such as brain drain, increasing poverty rate and unemployment, inflated public service body and shrinking land and diminishing water resources (Roy 2009).

After a long period of economic slow-down and stagnation, in recent years economic growth (limited to the West Bank due to the continued embargo on Gaza) has been registered. According to the latest World Bank report (World Bank 2010) “the West Bank economy continued to grow in the

first half of 2010 and the real growth rate (...) is likely to reach the projected 8 percent for the year. Some of the increase in economic activity can be attributed to improved investor confidence and the partial easing of restrictions by the Government of Israel (GoI). The main driver of growth, however, remains external financial assistance”.

The Palestinian private sector is made up of small-scale businesses constituting the vast majority of economic establishments (more than 96%), employing less than 10 employees. For several decades, small-scale enterprise development has been the main strategy for stimulating and maintaining economic development and the survival of Palestinians.

According to the World Bank (2010) “anecdotal evidence provides some positive signs that private investment is beginning to pick up in certain sectors. Managers in banks and loan guarantee programs have indicated that they are being approached by more entrepreneurs seeking financing for long-term projects. Between 2008 and 2009 alone, the number of newly registered enterprises jumped by more than 38 percent with declared capital in 2009 more than double of that in 2008 and, encouragingly, results from the first half of 2010 indicate that this year will be similar to 2009”.

Donor Dependency Model

For more than 15 years, since the signing of the Oslo Accords, donors are compensating financially for the lack of political will of their governments to change the status quo. Financial capital substitutes the lack of political capital. The result is that the Palestinians are one of the ‘richest oppressed people’ while facing a shrinking land base and an increase in constraints on their daily lives. Donors are fully aware of their contradictory role. The current donor involvement has very little to do with building a Palestinian state, but increasingly with paying for the harmful consequences of the Israeli occupation and helping Palestinians to cope with it.

As Anne Le More (2004) illustrated, “one of the main features of this aid management structure is that it was initially conceived as a trilateral mechanism involving donors, the PA and the Israeli government. This reflected the fact that the Palestinian–Israeli peace process provided the political framework for international assistance to the West Bank and Gaza Strip. Moreover, although the Palestinian population had been granted a degree of autonomy in some of the areas established by the Oslo Agreement, Israel retained control of East Jerusalem, 60% of the West Bank and a large proportion of Gaza. The PA thus lacked sovereignty and such critical state attributes

as control over its borders, its foreign policy, its currency, its fiscal and monetary policy and its natural resources. Accordingly, Israel also remained the aid community's 'host' – international aid agency staff working in the OPT arrive at and depart from Tel Aviv airport, the Israeli Ministry of Foreign Affairs delivers work visas and most international organizations, including UN agencies and NGOs, operate in the Palestinian territories on the basis of an agreement concluded with the Israeli government”.

The highly politicized donor involvement has provided much-needed humanitarian and emergency relief as well as budget support to pay the salaries for an inflated public sector, but also strongly suppressed the real productive potential of a society that traditionally is among the most educated within the Arab world.

By launching the abovementioned plan “Ending the Occupation, Establishing the State”, Palestinian Prime Minister Salam Fayyad (2010) has introduced a new and reinvigorated mindset among the Palestinian community. He states that “Building a Palestinian state was never intended to replace the political process, but to reinforce, and benefit, from it. The idea was to impart a sense of possibility about what might happen, what we would want to see happen: an end to the Israeli occupation and an opportunity for Palestinians to be able to live as free people in a country of our own. (...) It's the power of ideas translated into facts on the ground -- taking Palestinian statehood from abstract concept to reality. (...) Often, people come to the conclusion that it's hopeless. I understand that. But they're thinking about things in a static way. The state-building program goes well beyond the world as it is now. You begin to move; you begin to act; you begin to create new realities; and that in itself provides a much better dynamic”.

Though there is no direct reference to *innovation* per se, the program of the 13th Palestinian government indirectly sets the stage for the advancement and establishment of an innovation ecosystem by stating that: “Liberating the Palestinian national economy from external hegemony and control, and reversing its dependence on the Israeli economy, is a high national priority. A capable state is built on the foundations of a strong, sustainable, active and efficient economy. (...) it is our national duty to do all that we can to pull our economy out of the cycle of dependence and marginalization” (Palestinian National Authority 2009).

Thus, the two-year state building plan recognizes the need to rethink and introduce a new development model that moves from a dependent and passive one to a self-sustained, pro-active, and creative path that may very well lead to a success-

ful innovation ecosystem in a part in the world that nobody would expect.

3. Building an innovation ecosystem in and for Palestine

3.1. Choosing a framework for an innovation ecosystem

The current understanding of innovation ecosystems is characterized by a focus on institutions (Wessner 2007; Adner 2006) such as companies, universities, investors, governments and their tightly enmeshed interactions. An innovation ecosystem, also referred to as IES, can be described from various perspectives such as an individual player (e.g. a company) (Adner 2006), or a public body (e.g. a nation) (Wessner 2007). The key questions asked are, how to design, build and operate a – in the eye of the beholder – favorable innovation ecosystem. To answer these questions often rather linear or rather deterministic approaches are adopted (e.g. Adner, Kapoor 2010) although the notion of an innovation eco-“system” per se contradicts such-like.

When looking for a framework, we could use to best describe an innovation ecosystem for Palestine, we had to bear in mind that Palestine is a developing country, and what is more, it is a country which faces particular challenges.

So our ambition was, to find a framework, which offered the breadth to cover these aspects. Most models discussed in the field are taking on the perspective of a developed country. Judy Estrin's book (Estrin 2009) is based on interviews “with more than 100 scientists, engineers, entrepreneurs, venture capitalists, researchers, educators, and academic and business leaders who have been contributors to America's innovative excellence”.

Milbergs' framework (Milbergs 2007) is presented in the context of designing an innovation ecosystem for Washington State. It builds on the work of the National Innovation Initiative, Council on Competitiveness, Innovate America, December 2004.

Wang's model (Wang 2009) is another good example for a “developed perspective”. It focuses on innovations communities (comprising everyone producing and using innovations), including all kinds of actors such as universities, designers, regulators on the supply side or media, distributors, user organizations on the demand side. At the same time constituents like educational system or infrastructure, which may represent the most challenging constraints for the innovation ecosystem of an emerging economy, are not even part of the picture.

The framework introduced in an exploratory paper by Nair (2007) serves our purpose in a much better way. It has been developed and introduced in the course of laying out and discussing the innovation ecosystem of Malaysia. Malaysia defines itself as a developing country, but it has committed itself to becoming an innovation-driven economy by 2020 (according to the Global Competitiveness Report of the World Economic Forum, Malaysia is currently considered to be an efficiency-driven economy (Schwab 2010)). Thus Malaysia has taken on a joint national effort in this regard, with the mentioned innovation ecosystem model being one of the referenced frameworks.

This IES model is made up of 7 factors, the 7 Is:

7. Infrastructure (physical);
8. Infostructure (affordable, instantaneous and global connectivity);
9. Intellectual Capital;
10. Interaction;
11. Integrity Systems;
12. Incentives;
13. Institutions.

The first two factors are considered to be the *founding* conditions, while the following are considered to be the *driver* conditions (Nair 2007).

In order to assess the Palestinian situation, it was our attempt to research the positioning of Palestine in regard to each of these factors and to possibly compare the findings with regional or international characteristics. However, when trying to do so, one fact became immediately evident: Palestine or the Palestinian Territories are not included or represented in most international reports and ranking systems (for example World Economic Forum reports (e.g. Schwab 2010) or Earth Trends (World Resources Institute 2007)); or Palestine is listed, but the data is largely missing. Thus the Palestinian economic situation in general and with regards to the innovation ecosystem in particular cannot be assessed in comparison to other nations or economic regions on firm data-based grounds. This fact alone can mean, that foreign investment, which is not a result of external donor programs or guided by individual preferences or loyalties is seriously encumbered.

For our purpose, this meant that we had to rely on our own research which is based to a great extent on qualitative data.

3.2. Nascent structural elements of an innovation ecosystem in Palestine

At first sight one may not imagine that a state in the making with no sovereignty over land, water, and borders may have some of the structural building

blocks necessary for an innovation ecosystem. However, there are a few nascent structural elements and initiatives that together form a small, yet promising basis for the establishment and advancement of an innovation ecosystem in Palestine.

Based on the above illustrated innovation ecosystem model, which we deem most relevant and useful to apply to the unique case of Palestine, the following evidence has been identified for the 7 Is:

Infrastructure

14. Physical infrastructure

Though in recent years the Fayyad government has made tremendous efforts to improve the transportation system and commenced several long-term physical infrastructure projects, the Israeli restrictions on movement of goods and services within Palestine and on all external borders are still in place. One major impediment is the restricted access to 60% of Palestinian land, also known as Area C as defined in the Oslo Accords, and East Jerusalem. Roadblocks and military checkpoints increase the costs of business acting as a disincentive for FDI.

15. Lack of external border control

The fact that Israel controls all exit and entry borders for Palestine means that the import and export business is entirely subject to Israeli approval. One may rightly term the Palestinian economy as a 'prison economy' with a lot of unused potential due to the many physical constraints imposed.

Infostructure

According to a study conducted by Paltrade (2010) in cooperation with the World Bank in August 2010, mobile and wireless internet technology is available in most parts of Palestine: "85% of the population own mobile phones, and internet penetration per capita in Palestine is at 7%, which is comparable to that of countries such as Egypt, Syria, Algeria and Tunisia. (...) The number of ADSL subscribers has increased from 7,483 in 2005 to 72,518 within three years at an average increase of about (300%) annually".

Intellectual Capital

16. Palestinian Diaspora Scientist Initiative

Among the large Palestinian Diaspora community, which is estimated to reach between 6 to 8 million people, there are well established academics and scientists working at internationally renowned institutions. In late 2010 a group of political, private sector and educational leaders started an organization that aims at harnessing skills and expertise of the Palestinian Diaspora working successfully in R&D for the benefit of the local economy and higher education system. The organization will act as a connecting bridge between

the high local demand and the largely untapped international supply (Awartani 2011).

17. R&D Centers

During a recent evaluation and assessment of the higher education sector in Palestine conducted by a German company, AGE International Consulting Services (AGEG 2011), four unique projects were identified with a highly innovative potential for the Palestinian economy and society:

Biotechnology Unit at the Palestine Polytechnic University (PPU)

- Establishment of a previously non-existing biotechnology research laboratory for a growing market field attracting highly qualified expatriate Palestinian researchers to join as fulltime staff.
- Leading companies with needs in biotechnology research (e.g. food processing and dairy industry, leather industry) have begun to make use of the lab's services.
- Many graduates work in specialized biotech companies (e.g. Medifarm and Medicare).
- Biotechnology was not a specialized profession. Now with this program the center is influencing labor market and companies start seeing the need for biotechnology.
- One of the researchers has developed an enzyme that reduces contamination through the feces pollution and impact on the environment.

Biomedical Engineering at PPU

- Opening up a new field of biomedical engineering previously unknown in Palestine attracted many students and stimulated the interest in the market.
- Mechanical engineers previously handled maintenance of the medical equipment so there was no awareness in the Palestinian market in terms of specialized need in the medical equipment field. Since there is a specialized department (with the equipment provided by the project), hospitals started employing biomedical engineers.

Biomolecular Center at Birzeit University

- A new laboratory was established that is unique in Palestine and that provides very practical services to private labs, hospitals and companies.
- Boosting research in the field of molecular biology through important partnerships with Pichat Hospital in France, the University of Gent in Belgium and General Hospital of Linz in Austria.

Virtual Reality Laboratory at Birzeit University

- The new equipment and lab created a new virtual reality culture in the university with

practical applications in many fields for the private sector.

- An entire virtual application was developed for Hisham's Palace and also for a mechanical demonstration of how engines work as well as medical applications.
- The lab is leading the labor market in terms of creating new applications for virtual reality in the fields of scientific research and mechanics.

Interaction

Despite the small and highly personalized nature of institutional relationships in Palestine, information exchange and joint endeavors, such as private-public partnerships as well as R&D relationships between the education sector and economy, are a relatively new phenomenon. More effort is needed to see the value of cross-cutting institutional exchange and relationships.

Integrity Systems

The concept of Integrity Systems encompasses various categories such as

18. good governance, transparency and accountability;
19. improvements on corruption fight;
20. safety and security;
21. legal context.

Palestine has gone a long way to improve its performance with regards to the fight against corruption. In 2006, the Palestinian President named several high level officials indicted with corruption charges publicly and the Attorney General has been empowered to initiate legal proceedings against those charged with misappropriating public funds.

In terms of legal security and the strength of the legal system, several legal support programs are underway. However, according to several lawyers we interviewed, the legal system is still prone with favoritism and access rather than basic legal principles that guide the procedures.

According to the latest World Bank report (World Bank 2010), the PA's Ministry of National Economy (MoNE) has made improving the investment climate a priority and has taken a number of steps. Amongst these steps is the recent drafting of a number of new laws to improve the investment climate. These laws have been passed by the Council of Ministers and are awaiting signature by the President.

Among the important new laws waiting to be adopted are:

22. *New Companies Law*: This new law modernizes how companies are registered and regulated. Among other things, it will reduce the minimum capital requirement for registra-

tion, which will make it easier to establish new enterprises.

23. *New Investment Law*: This legislation changes the way investment incentives are given, including adding new sectors that are eligible for incentives.
24. *New Industry Law*: This law will change the way industry is regulated and supported by the PA.
25. *Movable Assets Law*: This law establishes a movable assets registry in the MoNE, which will help enterprises access finance by allowing them to use movable assets as collateral (World Bank 2010).

Incentives

Apart from the political and physical constraints mentioned above, Palestine is attractive for foreign investment due to its low corporate tax of 15% flat for FDI and several tax-free Industrial Zones.

Institutions

Apart from the government, the existing institutions able to promote and maintain an IES are:

26. Palestine Informations and Communications Technology Incubator (PICTI);
27. Al Nayzek- NGO dedicated to scientific innovation in education;
28. Palestine Investment Promotion Agency (PIPA);
29. Palestine Investment Fund (PIF), the strongest socio-economic vehicle promoting private-public partnership model in strategic investments.

One remarkable organization that bridges the education sector with immediate industrial needs is the Industrial Synergy Center at PPU in Hebron. The purpose of the Industrial Synergy Center (ISC) is to build a bridge between the university and the local industry. The major achievements are:

30. strong connections with the local industry and the creation of positive momentum for more cooperation;
31. 29 graduation projects finalized relevant to the local industry;
32. other universities/colleges intend to replicate idea of ISC (Birzeit University and An-Najah National University).

In addition, some universities established IT incubators in Bethlehem, Nablus, and Hebron with some graduates now running their own businesses. These incubator programs have introduced a university-wide entrepreneurial mindset among the student body (AGEG 2011).

3.3. Searching for Palestine in international rankings

The inclusion in international rankings is a precondition to attract FDI and put Palestine on the map economically and internationally. The international community invests many resources in 'developing' Palestine. Thus to include Palestine in international rankings would only be consistent as to help it to stand on its own feet. This would also provide a basis for the self-evaluation for the Palestine authorities and the Palestine public as well as to monitor any progress in comparison to the international community. Furthermore, national identity is also a question of visibility from an inside as well as from an outside perspective. In order to be visible, you have to appear in the respective reference systems; otherwise, you simply do not exist.

4. Conclusion: direct actions and recommendations

The recommendations and direct actions are organized according the 7 I's as outlined above:

Infrastructure

1. Support efforts to expand Palestinian access to lands in Area C (60% of the West Bank) for developmental purposes.
2. Strengthen infrastructure, which supports interaction that does not require long transportation routes through:
 - locally driven development
 - economic clusters
 - teleconferencing facilities

Infostructure

3. Further upgrading of broad band access, especially in rural areas.
4. Further liberalization of telecommunications sector.
5. Establish freely accessible innovation information database for teachers as well as practitioners.
6. Measures to bridge the digital divide through partnerships between, for example, students and senior citizens.
7. Encourage projects such as *Souqtel* that integrates the SMS function into relevant information networks, such as job search or market information etc.

Intellectual Capital

8. Develop policy on Brain Gain versus Brain Drain to reverse the negative trend of previous years.
9. Reintegrate Palestine intellectual Diaspora through tax and funding incentives for univer-

sities and businesses (Diaspora Integration Scheme).

10. Foster creative learning environments through the use of active pedagogy criteria for project selection for beneficiaries.
11. Strengthen the third sector.

Integrity Systems

12. Continue fight against corruption
 - Public reporting on allocation and application of funds.
13. Offer to host regional event of Transparency International to showcase advances.
14. Provide case studies to interested investors of how the legal system works in case of disputes to instill trust.

Incentives

15. Aim the donor programs at projects supporting the IES developmental goals:
 - focus on private sector development and entrepreneurship;
 - focus on key technologies (e.g. biotechnology, electronics etc.).
16. Launch an investment promotion campaign to attract innovative businesses to settle in Palestine offering specific guarantees

Interaction

17. Develop long-term innovation strategy, possibly in the form of Vision 2030 for Palestine outlining the steps and activities necessary to establish an innovation-driven economy:
 - constituents of IES;
 - identification of key technologies and key services;
 - migration paths to locally integrate R&D institutions and commercial sector.
18. Establish a corresponding communicative structure between stakeholders.
19. Synchronize Donor Programs and IES on a long-term basis with gradual reduction of aid dependency.
20. Include the public through comprehensive innovation communication activities.

Institutions

21. Establish an institutional structure within the Office of the Prime Minister to act as a focal point and coordinate the IES related activities across all relevant government parts.
22. Establish a Center for Entrepreneurship and Innovation to support young entrepreneurs with training, know-how, and infrastructure to set up their own businesses.

References

- Adner, R. 2006. Match your Innovation Strategy to your Innovation Ecosystem, *Harvard Business Review* 84(4): 98–107.
- Adner, R.; Kapoor R. 2010. Value Creation in Innovation Ecosystems: How the Structure of Technological Interdependence affects Firm Performance in New Technology Generations, *Strategic Management Journal* 31(3): 306–333.
<http://dx.doi.org/10.1002/smj.821>
- AGEG 2011. Evaluation of the Quality Improvement Fund for the Higher Education Sector in Palestine, March 2011. Publication forthcoming.
- Awartani, M. 2011. Interview with the co-founder of the Palestinian Diaspora Scientist Initiative, 14 March 2011.
- Cabe, D. K. 2002. *Nation Building* [online] [accessed 14 March 2011]. Available from Internet:
http://www.hks.harvard.edu/ksqpress/bulletin/spring2002/features/nation_building.html
- D'Auria, J. 2008. *Five Things Judy Estrin Has Learned About Closing the Innovation Gap* [online] [accessed 15 March 2011]. Available from Internet:
http://www.cio.com/article/472432/Five_Things_Judy_Estrin_Has_Learned_About_Closing_the_Innovation_Gap
- DFID 2008. *Growth: Building jobs and prosperity in developing countries*. London, UK: Department for International Development, Crown copyright, 2008. 36 p. ISBN 1-86192-947-1.
- DFID, 2008a. Palestinian Team Strategic Interim Plan [online] [accessed 27 December 2011]. Available from Internet:
<http://www.docstoc.com/docs/20390340/DFID-Palestinian-Team-Strategic-Interim-Plan-%28SIP%29---DFIDs-support-to>
- Dobbins, J.; Jones, S. G.; Crane, K.; De Grasse, B. C. 2007. *The Beginner's Guide to Nation-Building*. Santa Monica, CA: The RAND Corporation, 2007. 330 p. ISBN 978-0-8330-3988-0.
- Estrin, J. 2009. *Closing the innovation gap: Reigniting the spark of creativity in a global economy*. New York, NY: McGraw-Hill. 272 p.
- Evans, M. D. R.; Kelley, J. 2002. National Pride in the Developed World: Survey Data from 24 Nations, *International Journal on Public Opinion Research* 14(3): 303–338.
- Fayyad, S. 2010. *Why I'm Building Palestine* [online] [accessed 14 March 2011]. Available from Internet:
www.foreignpolicy.com/articles/2010/11/29/why_i_m_building_palestine
- Fritz, V.; Menocal, A. R. 2007. *Understanding State-Building from a Political Economy Perspective: An Analytical and Conceptual Paper on Processes, Embedded Tensions and Lessons for International Engagement*. Report for DFID's Effective and Fragile States Teams. Overseas Development Institute, September 2007 [online] [accessed 27 December 2010]. Available from Internet:
<http://www.odi.org.uk/resources/docs/1979.pdf>

- Glenn, B. 2008. *More Building, Less Flipping: Q&A With Tech Pioneer Judy Estrin* [online] [accessed 15 March 2011]. Available from Internet: <http://www.ecommercetimes.com/rsstory/65439.html>
- Le More, A. 2004. The International Politics of Aid in the Occupied Palestinian Territory, *Humanitarian Exchange Magazine* 28: 17–20.
- Milbergs, E. 2007. *Framework Report: An Update*, v. 2.8. Innovation Vital Signs [online] [accessed 28 December 2010]. Available from Internet: http://innovate.typepad.com/innovation/files/innovation_vital_signs_framework_report_v.2.8.pdf
- Nair, M. 2007. The ‘DNA’ of the new Economy, *Economic Bulletin* 8: 27–59.
- Palestinian National Authority. 2009. *Palestine: Ending the Occupation, Establishing the State*. Program of the 13th government, August 2009 [online] [accessed 27 Dec. 2010]. Available from Internet: http://www.mop-gov.ps/web_files/issues_file/090825%20Ending%20Occupation,%20Establishing%20the%20State%20-%20Program%20of%20the%2013%20government.pdf
- Paltrade 2010. *Challenges Facing ICT in Palestine*. August 2010 [online] [accessed 28 December 2011]. Available from Internet: <http://siteresources.worldbank.org/INTWESTBANKGAZA/Resources/ChallengesFacingICTPalestine.pdf>
- Pei, M.; Kasper, S. 2003. *Lessons from the Past: The American Record on Nation Building*. Policy Brief. Washington, D.C.: Carnegie Endowment for International Peace, 24 May 2003. 8 p.
- Reverso 2011. English Dictionary & Thesaurus [online] [accessed 13 March 2011]. Available from Internet: <http://dictionary.reverso.net/english-cobuild/nation-building>
- Roy, S. 2009. If Gaza Falls... *London Review of Books* 31(1): 26.
- Rubin, B. 2001. *The Transformation of Palestinian Politics: From Revolution to State-Building*. Cambridge, MA: Harvard University Press. 304 p.
- Schwab, K. 2010. *The Global Competitiveness Report 2010-2011*. Geneva: World Economic Forum, 2010. 516 p. ISBN 978-92-95044-87-6.
- Wang, P. 2009. An Integrative Framework for Understanding the Innovation Ecosystem. *Conference on Advancing the Study of Innovation and Globalization in Organizations*. Nuremberg, Germany 29–30 May 2009 [online] [accessed 28 December 2010]. Available from Internet: <http://doku.iab.de/fdz/events/2009/Wang.pdf>
- Wessner, C. W. 2007. *Innovation Policies for the 21st Century: Report of a Symposium*. Washington, D.C.: The National Academies Press. 222 p.
- World Bank 2010. The Underpinnings of the Future Palestinian State: Sustainable Growth and Institutions. *Ad Hoc Liaison Committee Meeting*. New York, NY 21 September 2010 [online] [accessed 27 December 2010]. Available from Internet: http://reliefweb.int/sites/reliefweb.int/files/resources/722F6C5FF3283868492577A1000DC450-Full_Report.pdf
- World Resources Institute 2007. *Earth trends: Environmental Information* [online] [accessed 27 December 2011]. Available from Internet: <http://earthtrends.wri.org>.