



מחקר ויעוץ • אبحاث واستشارة • Research & Consulting

BUILDING A PLAN TO INTEGRATE THE BEDOUIN SOCIETY INTO HIGH-TECH

Submitted to the Edmond de Rothschild Foundation – June 2021 – Final Report

FINAL REPORT



1. Objectives and Assumptions



2. Diagnosis of a multi-dimensional challenge



3. Mapping the existing situation – actors and programs



4. Formulating the theory of change



5. Recommendations for intervention



6. Picturing the future

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1. OBJECTIVES AND ASSUMPTIONS

OBJECTIVES

Following the initial mapping presented in the [first report](#), the purpose of the second step is:

- **Expand on the models and key actors in the field**

In order to

- **Identify challenges and opportunities**
- **Mine and process as accurate data as possible**

Through which, it would be possible to

- **Suggest theories of change**
- **Recommend an intervention model, and**
- **Outline future planning goals to enable a leap forward in the field**



ASSUMPTIONS AND METHODOLOGICAL NOTES

The planning process is based on several basic assumptions:

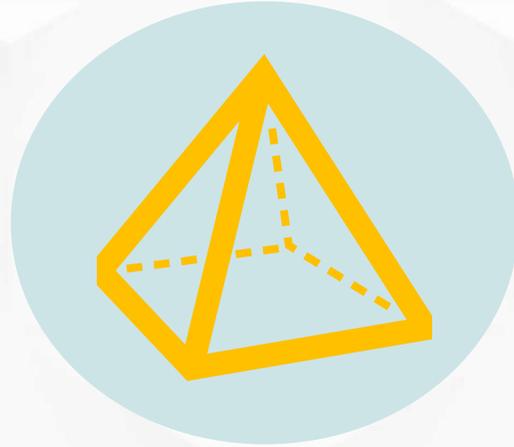
- Most Bedouins will continue to reside in the Negev, but there will be more options for working remotely and more openness to work at the central region as well – for both genders;
- The Bedouin education system will remain relatively weak and will require the support and preparation of students and graduates (enrichment, gap-year, guidance in academia and job placement);
- Demand on the side of employers will be a challenge but will not constitute the main barrier, as at the national level there is a dearth of thousands of engineers, and it is likely that this situation will persist.

Methodological notes:

- Due to the significant lack of accurate, segmented, and uniform data across official government information sources, the numbers are approximate.
- While not a formal condition for admission into practical engineering studies, the eligibility for mathematics matriculation at the level of 4 and 5 units is presented as a step towards integration into high-tech. This is because according to the mapping, those eligible have the best potential to begin and succeed in these studies.



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2. Diagnosis of a Multi-Dimensional Challenge

Diagnosis of a Multi-Dimensional Challenge in Creating a Leap Forward



———— There is no single point of failure —————>

1. A field in formation



2. A multi-age challenge



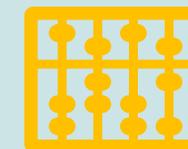
3. The discourse challenge



4. The employment challenge



5. The numbers challenge



A Field in Formation

- Difficulty in defining the field (engineers / technical engineers).
- A dearth of actors.
- The majority of initiatives are active in the field five years or less.
- Scaling up – only in the last two years (at the completion of the pilot stage).



- There is a problem in drawing meaningful conclusions about what works and what doesn't (paucity of program graduates, lack of data).
- + Potential partners already exist across the continuum.
- + A huge increase in the potential target audience is expected over the next five years.
- Lack of coordination as well as tensions and competition among the actors operating in the field.
- + Everyone understands that there is enough work for all.
- + There is a wealth of energy, creativity, and flexibility in the field.



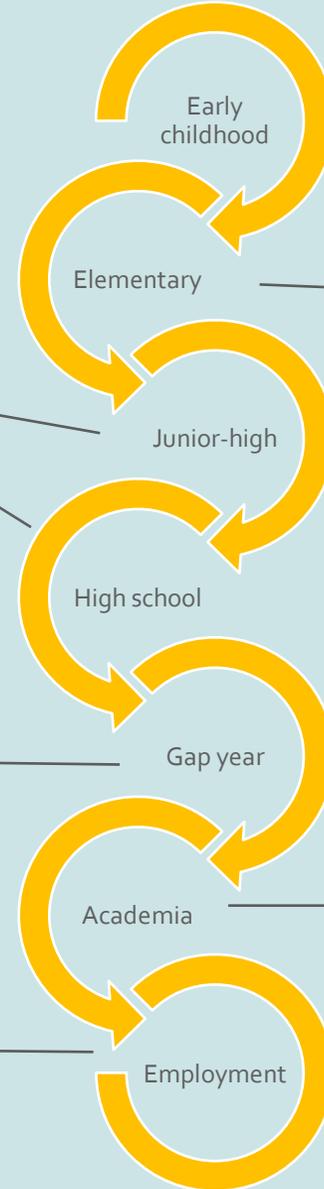
A Multi-Age Challenge



- Numerous programs emphasize this phase.
- Huge gaps in achievements, skills, awareness and opportunities in diverse fields.
- A regional focus.

- An apparent need for such a year, with a single model in the field.
- A regional focus.

- Graduates are unfamiliar with the industry.
- A dearth of employment opportunities in the Negev.
- Paucity of employer involvement.
- Difficulties after placement.



- Gaps start at very young ages and accumulate.
- Local focus.

- Unrealistic expectations from the academia to "fix the problem".
- A variety of actors operating without coordination.
- Lack of preparatory programs for employment.



The Discourse Challenge

A conservative discourse within Bedouin society with regards to education and employment for both women and men (in different ways).

- Lack of awareness in the community and among educators.
- Alienation from the high-tech sphere, and aversion to risks.
- Shortage of success stories/networking.



The Employment Challenge



Challenges to diversify the industry, there is no working model with employers.



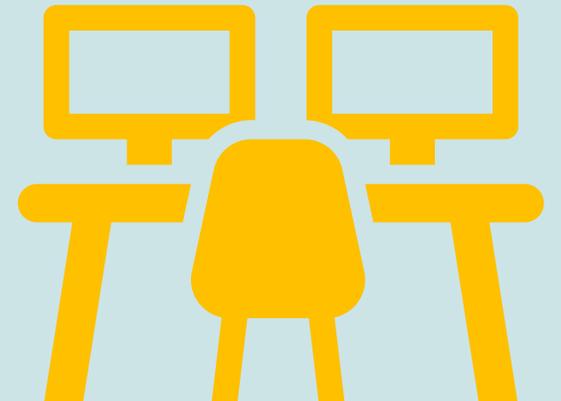
Scarcity of high-tech employment opportunities in the Negev.



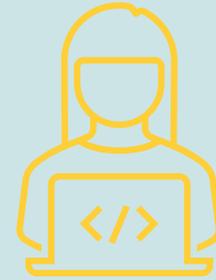
Lack of comprehensive employment guidance for candidates: preparation in academia, development of soft skills and professional skills, interview simulations, exposure to industry, placement.



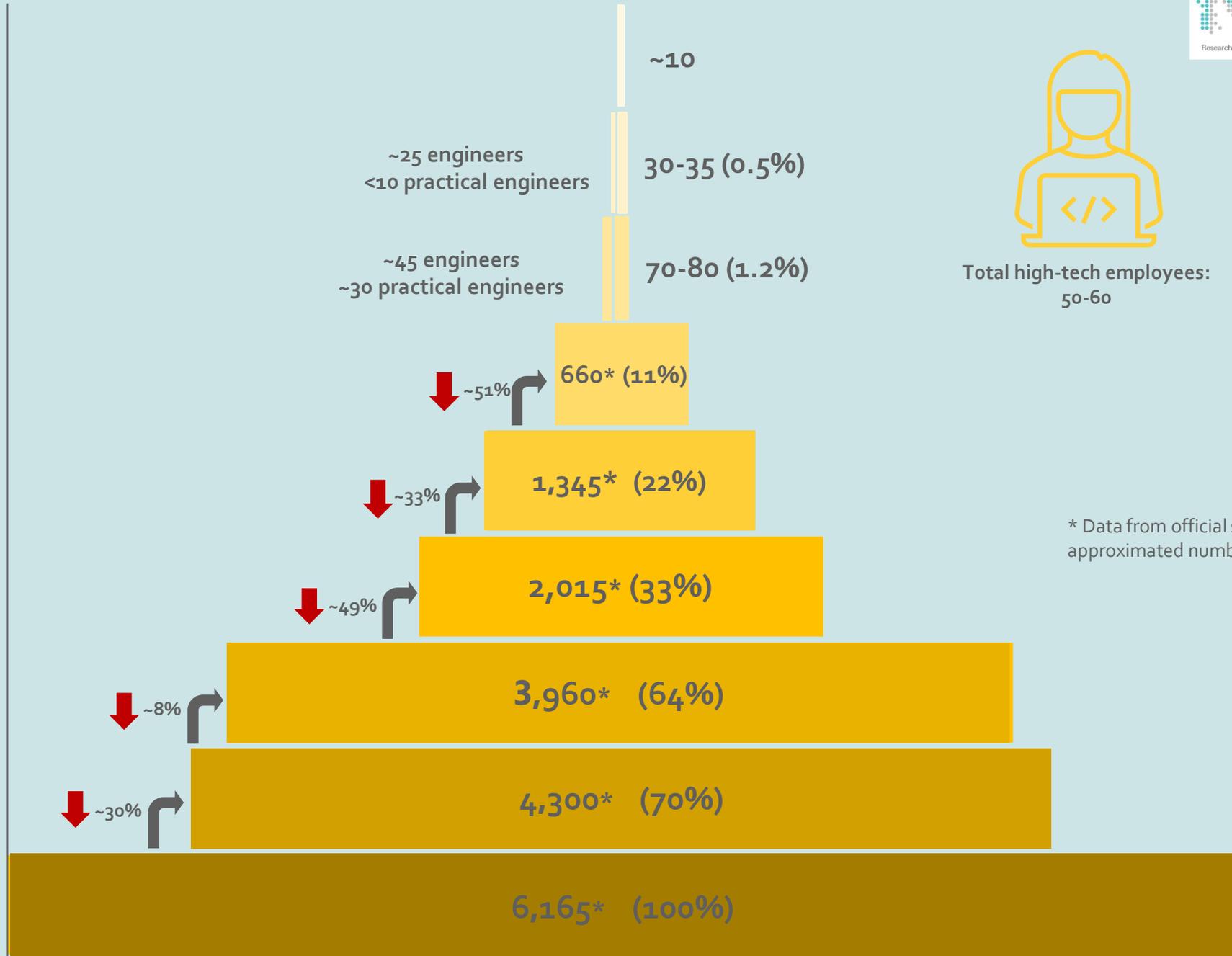
Some 50-60 Bedouins are employed in the high-tech industry around the country; they are not networked and face numerous challenges even after placement.



Current Situation – 2021: 1998 Cohort (2016 high-school graduation)



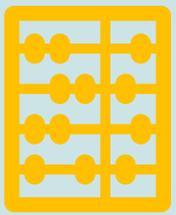
Total high-tech employees:
50-60



* Data from official sources, approximated numbers

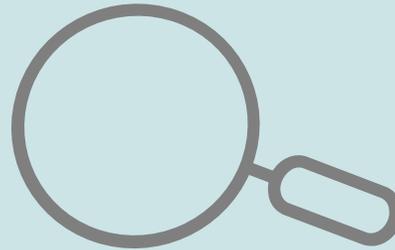


The Numbers Challenge

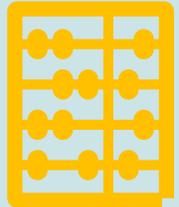


- Working/will work in high-tech
- About to/completed studies in high-tech fields
- Began studies in high-tech fields
- Eligible for math matriculation at 4-5 units level
- Eligible for university-level matriculation
- Eligible for a matriculation certificate
- Took the matriculation exams
- Completed 12 years of school
- The 1998 cohort

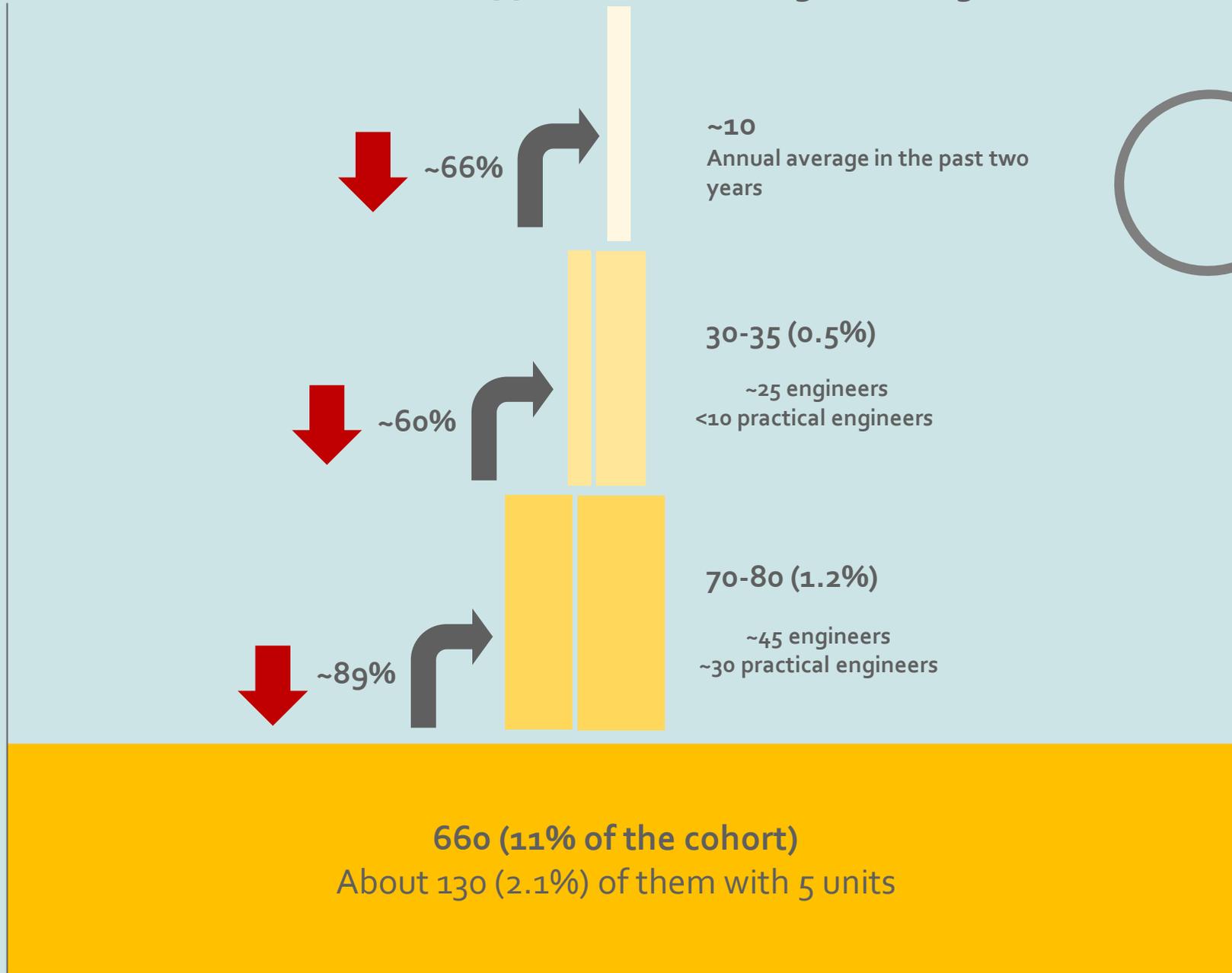
Current Situation – 2021: 1998 Cohort (2016 high-school graduation)



The Numbers Challenge



- Working/will work in high-tech
- About to/completed studies in high-tech fields
- Began studies in high-tech fields
- Eligible for math matriculation at 4-5 units level



Graduated high school in 2016



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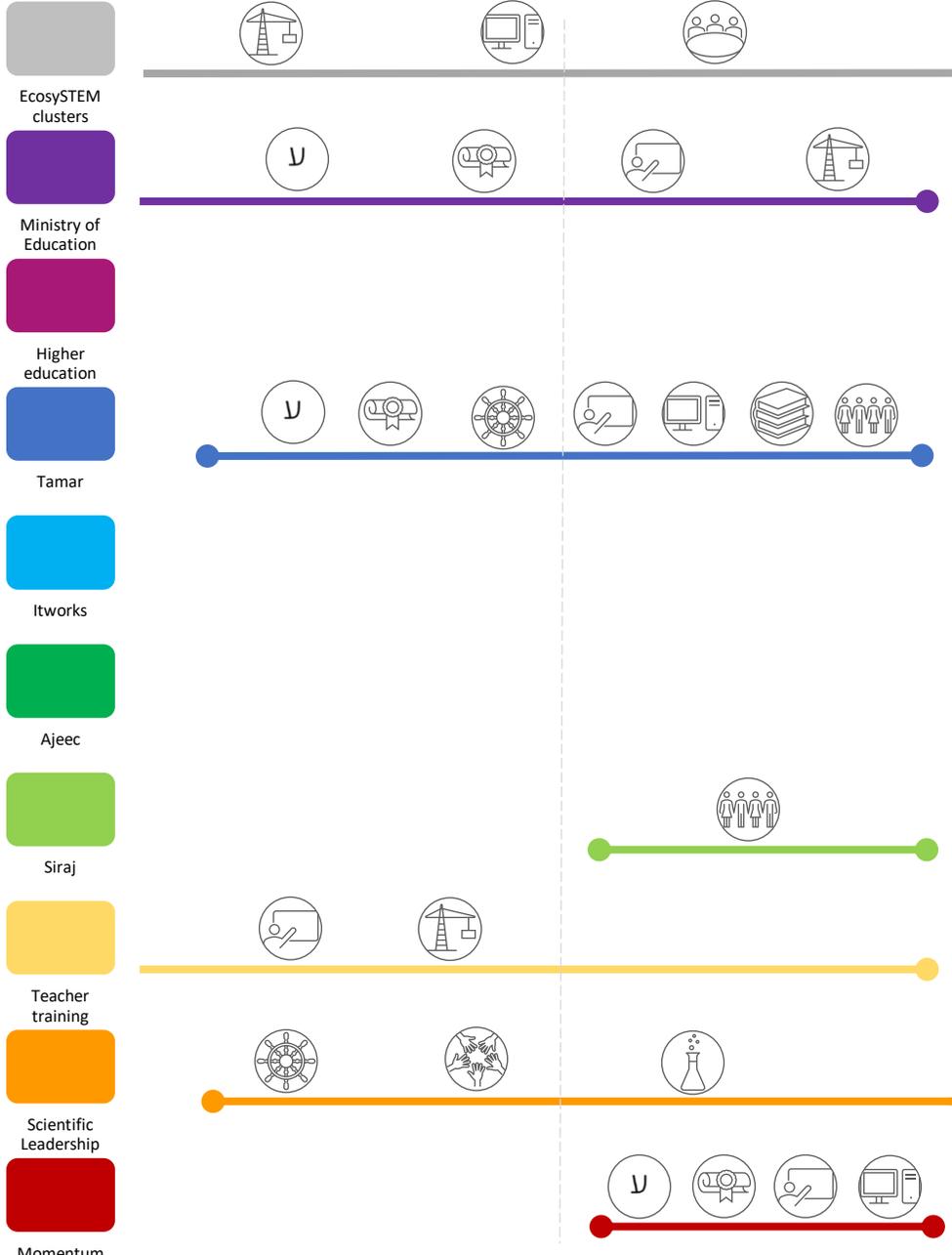


3. Mapping the Existing Situation – Players and Programs

Mapping Main Players



Junior-high High school Gap Year, academic prep Academia Employment prep



- Hebrew
- Matriculation prep
- Teacher development
- Empowerment and leadership
- Scientific enrichment
- Alumni programs
- Infrastructure building
- Volunteering
- Accompanying to employment
- Academic prep
- Accompanying in academia
- Community events
- Exposure to the industry
- Strategy and integration

Beit Yatziv

Mapping Programs and Content



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4. Formulating the Theory of Change

Multi-Dimensional Challenge



- Weak population – large gaps across the continuum, peripherality, a conservative discourse.
- A new field – few actors, individual success stories, small numbers.



New Trends

- Several serious actors working to develop and the field.
- Sprouts of change and a huge potential.

The Theory of Change



Creating a leap forward requires establishing an integrated system, and under it:

- Expanding the main models of civil society;
- Creating partnerships with strategic players – academia, the Ministries of Education, Economy and Labor, regional clusters and local authorities;
- Harnessing employers;
- Developing field-wide interventions.



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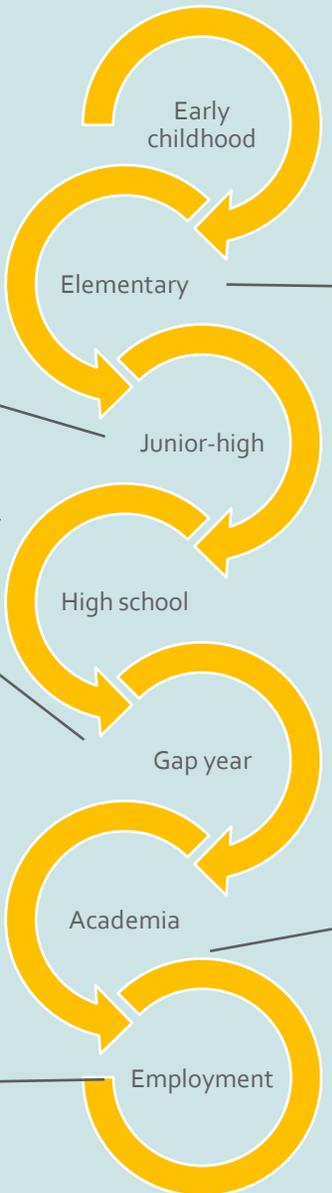
5. Recommendations for Intervention

Recommendations for Intervention – A Multi-Age Challenge



Recommendation: Expand the main models of civil society at these ages.

Recommendation: Include programs for these ages in the integration (if not in the budgeting), in collaboration with the Ministry of Education and local authorities.



Recommendations:

- Strengthen and expand accompaniment programs in academia.
- Collaborate with academic institutions, coordinate between the various actors.
- Connect to the industry.

Recommendation:

- Close supervision in employment prep.
- Harness employers.
- Build a network of fellows.



Recommendations for Intervention – The Employment Challenge



Map opportunities and build working models vis-à-vis employers.



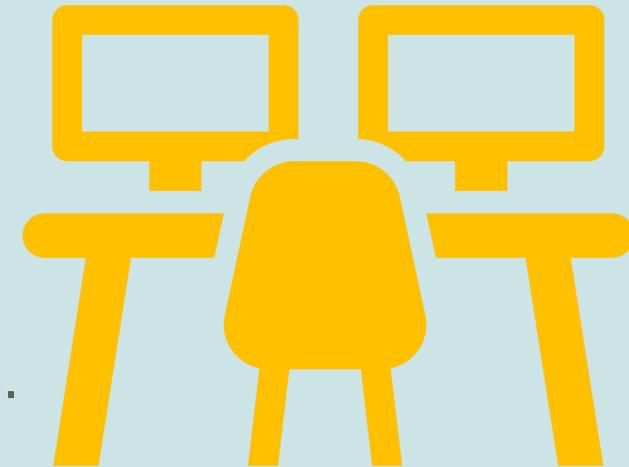
Focus on local companies as well as on companies in the country's central region.



Institutionalize employment support for students and graduates.



Maximize the potential of engineers and practical engineers.



Recommendations for Intervention – Developing Field-wide Interventions



Changing the discourse about high-tech within Bedouin society:

- A comprehensive public campaign.
- Enhance awareness and provide access to students, teachers, parents and the community.
- Exposure to role models and the industry.



Establishing a Bedouin Fellows Network for high-tech professionals from Bedouin society :

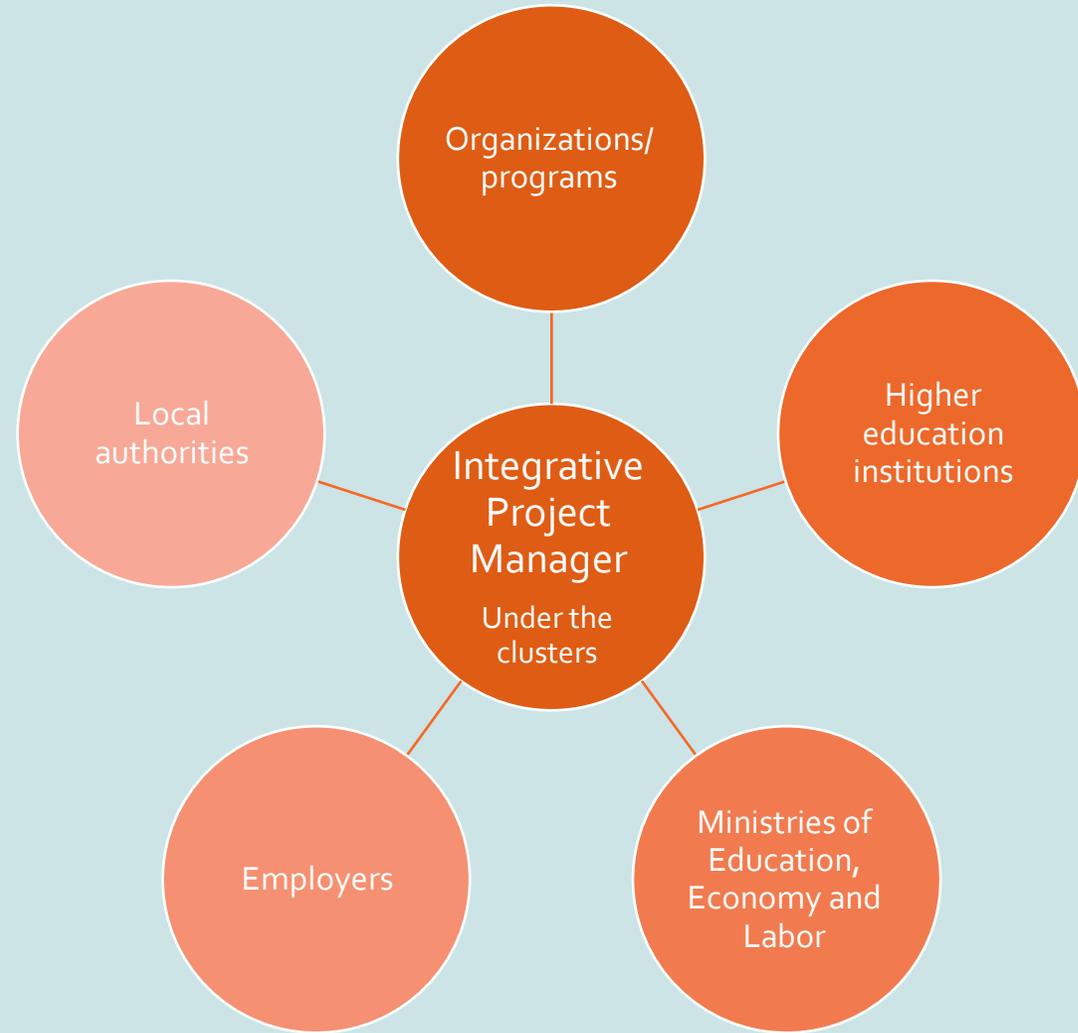
- Networking and support.
- Harnessing the Fellows as ambassadors to the community.



Institutionalization and coordination of gap year models, mentoring programs, and alumni networks.



Recommendations for Intervention – An Integrative System



Accompanying
research and
evaluation

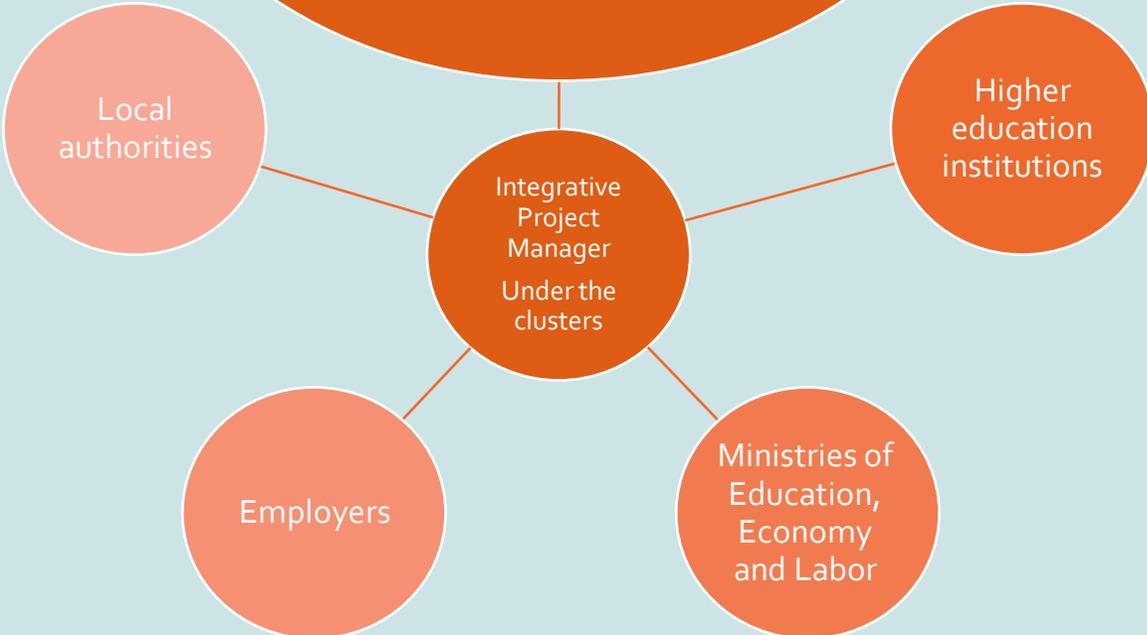
Field-wide
Projects
Campaign, Fellows
Network, alumni
programs

Work Groups
Hebrew, academia,
employment

Steering
Committee
NGO and community
representatives



Recommendations for Intervention – An Integrative System



Accompanying research and evaluation

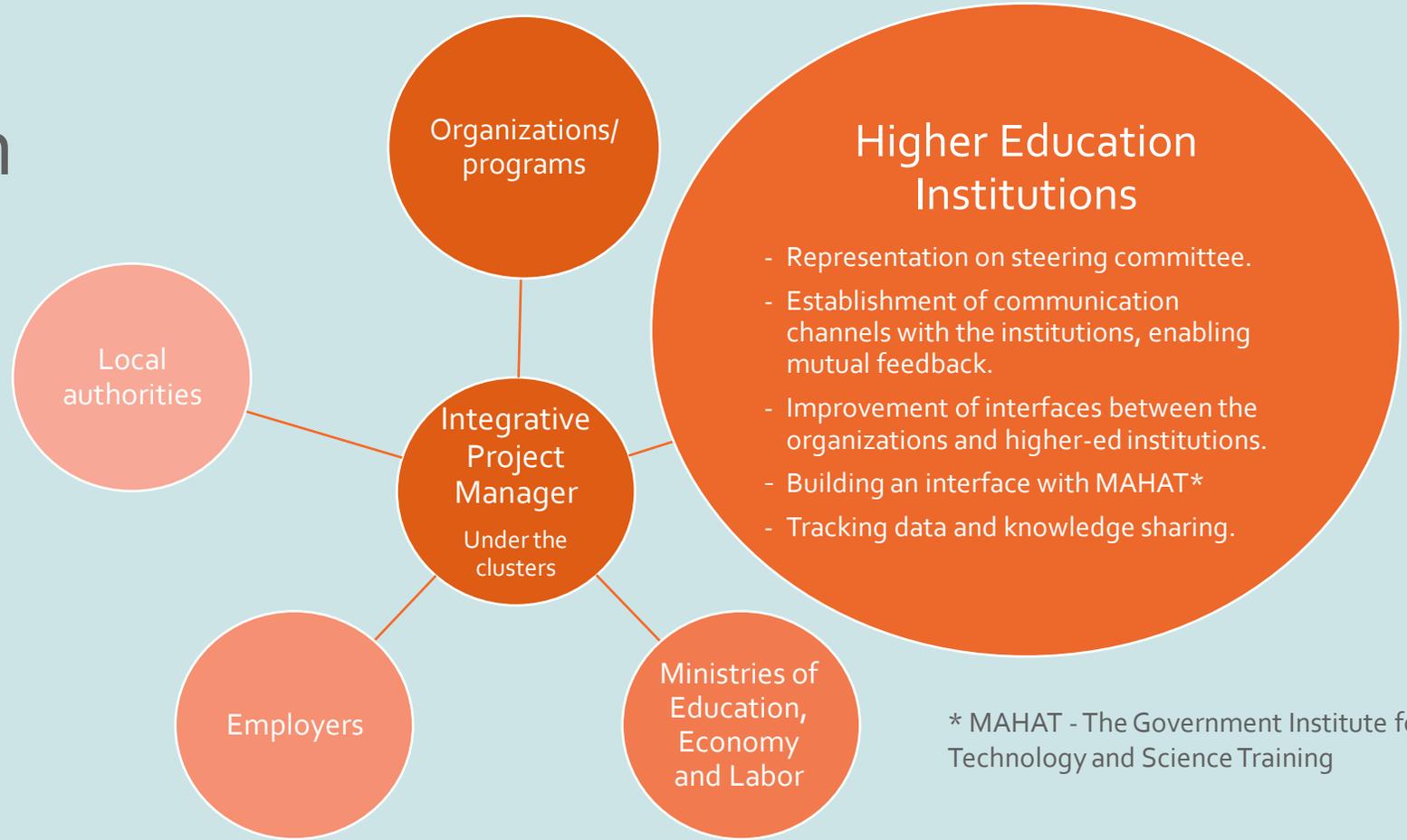
Field-wide Projects
Campaign, Fellows Network, alumni programs

Work Groups
Hebrew, academia, employment

Steering Committee
NGO and community representatives



Recommendations for Intervention – An Integrative System



* MAHAT - The Government Institute for Technology and Science Training

Accompanying research and evaluation

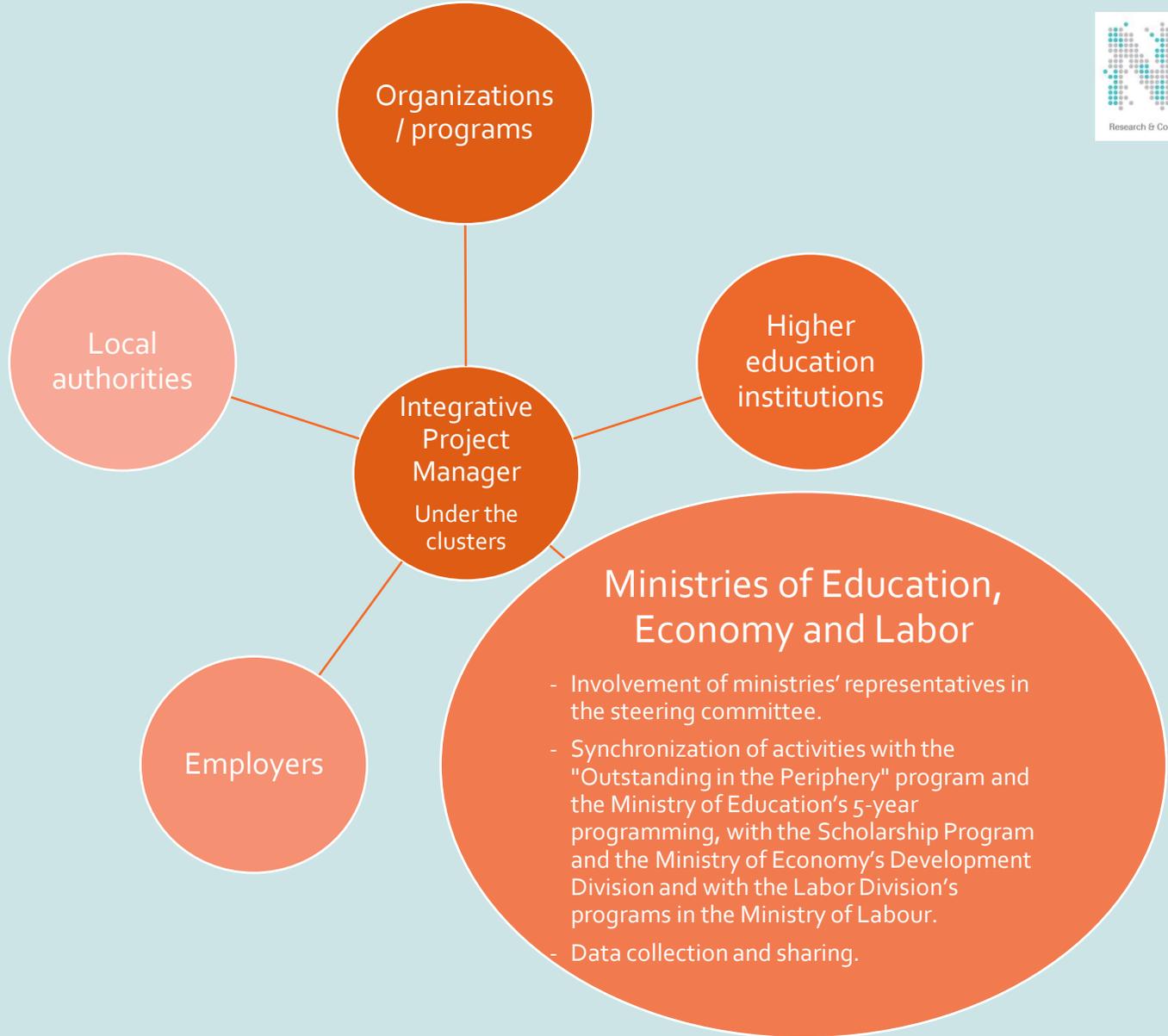
Field-wide Projects
Campaign, Fellows Network, alumni programs

Work Groups
Hebrew, academia, employment

Steering Committee
NGO and community representatives



Recommendations for Intervention – An Integrative System



<p>Accompanying research and evaluation</p>	<p>Field-wide Projects Campaign, Fellows Network, alumni programs</p>	<p>Work Groups Hebrew, academia, employment</p>	<p>Steering Committee NGO and community representatives</p>
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Recommendations for Intervention – An Integrative System



Accompanying research and evaluation

Field-wide Projects
Campaign, Fellows Network, alumni programs

Work Groups
Hebrew, academia, employment

Steering Committee
NGO and community representatives



Recommendations for Intervention – An Integrative System



Accompanying research and evaluation

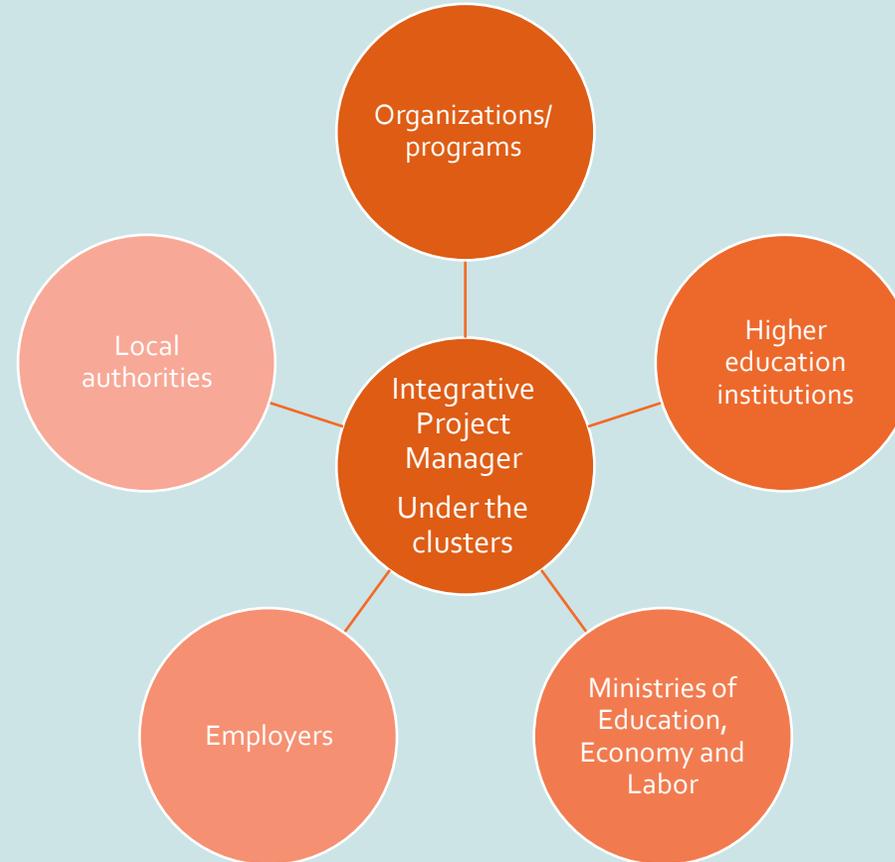
Field-wide Projects
Campaign, Fellows Network, alumni programs

Work Groups
Hebrew, academia, employment

Steering Committee
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Recommendations for Intervention – An Integrative System



Accompanying research and evaluation

Continuous collection of data from the field and the government, cross-referencing of data and building an updated database, definition of performance indices, continual evaluation, learning from successes and mistakes.

Field-wide Projects

Campaign, Fellows Network, alumni programs

Building the infrastructure for cross-organizational and community programs (e.g., a Bedouin high-tech Fellows Network as leaders in an awareness campaign.)

Work Groups

Hebrew, academia, employment

Work groups focusing on shared challenges (e.g., improvement of Hebrew levels, mentoring for students, building an infrastructure vis-à-vis employers.)

Steering Committee

NGO and community representatives

Representatives of NGOs, government ministries, academia, and employers, as well as experts from the Bedouin community.

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6. Picturing the Future

Picturing the Future



- The future vision includes goals for eight years ahead, when today's 11th-grade cohort (born 2004) will enter the labor market (after the 12th grade, an optional gap year, and another 3-6 years of preparatory / academic / practical engineering studies).
- This age group was chosen as it is the first to pool both the impact of the wave of existing models (scaling up of civil society programs) and the impact of the current project.
- For simplicity's sake, the size of the age group is held as a constant. At the end of the process, a numerical adjustment will have to be made to reflect the expected population growth.

Picturing the Future – 2029.

Eight age cohorts, individuals born 2004 integrate into the labor market



Bedouin High-tech employees: 200

Integrating into high-tech
(individuals born 2004)

100 ← 10
↑ 900%

Dropout rate: From 66% to ~50%

Completing studies in high-tech fields
(individuals born 2005/6)

200 ← 30-35
↑ ~ 500%

Dropout rate: From 60% to ~40%

Beginning studies in high-tech fields
(individuals born 2009/10)

350 ← 70-80
↑ ~ 350%

Dropout rate: From 89% to ~70%

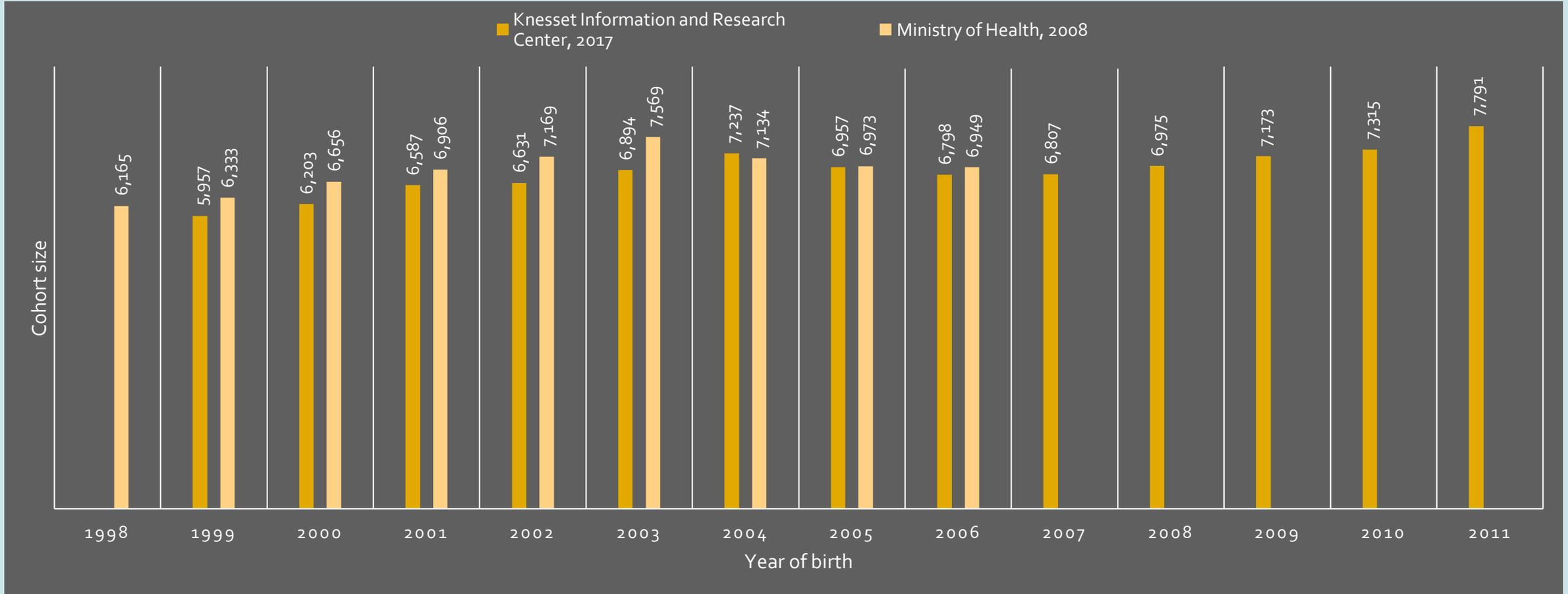
Eligible for math matriculation
at the 4-5 units level
(individuals born 2011)

1320 ← 660
↑ 100%

Adjustments for Demographic Growth

The Negev's Bedouin Population, Born 1998-2011

A 16% growth



- Health Status of Bedouin Infants and Children up to the Age of 6 Years in Permanent Localities and in Unrecognized Villages in the Negev, Ministry of Health report, 2008. According to data in the computerized system of the District Health Bureau, Southern District.
- Education in the Bedouin Society in the Negev, Situation Report, the Kneset Research and Information Center, 2017. Data processing by the Central Bureau of Statistics.

Impact

- An increase in each tier of the pyramid results from the intervention in the relevant age group:

Interventions in **junior-high and high-school**

→ An increase in **4-5 units mathematics matriculation graduates**

Interventions in **junior-high, high-school, gap year**

→ An increase in the number of students **beginning studies in high-tech fields**

Interventions in **gap year and academia**

→ An increase in the number of students **completing studies in high-tech fields**

Interventions in **academia & employment preparation**

→ An increase in the number of graduates integrating into high-tech

- The first circle – the above numbers reflect the immediate impact on the direct beneficiaries of the Foundation's intervention program.
- The second circle – integration into high-quality employment will reduce poverty in the Bedouin population; an increase in STEM studies and improvement in the access to higher education in these fields will also benefit young adults who will not integrate into high-tech; each high-tech position creates additional jobs, some of which it is safe to assume will benefit the Bedouin population.
- The third circle – each high-tech employee from the Bedouin community will have a significant impact on broad circles in the community as a role model, for networking purposes, and for building a positive future picture.