

# Economic Implications of Investing in Early Childhood Care and Education in Jordan

## Brief on QRF Working Paper #1

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### Background on the Study

Since international studies have found that each \$1 estimated in early childhood development generates private and social returns valued from \$6 to \$17<sup>i</sup>, QRF partnered with two professors at Harvard University and an economist at the University of Jordan to estimate the economic returns to Early Childhood Care and Education (ECCE) in Jordan. The study relied on pre-existing datasets, including standardized tests, a demographic and health survey, a labor market survey, and Census data to link ECCE participation to educational attainment, employment and earnings, and life expectancy.



### Estimated return on ECCE investment



The primary scenario assessed was modeled after the **National Human Development Strategy** recommendation where children would receive 3 years of ECCE, and found that every \$1 spent on ECCE under this scenario would yield \$9 of returns for participating children, in the form of labor market and life expectancy benefits (a 9:1 return). However, for a less ambitious program which provided universal Kindergarten 1 (KG1) and Kindergarten 2 (KG2) (2 years of ECCE), **every \$1 invested would generate labor market and life expectancy returns valued at nearly \$20** (a 19.5:1 return). This higher return on investment for the reduced model was due to the higher cost of nursery provision, noting that there is insufficient data to estimate whether there may be higher learning gains from nursery to offset these costs.

Scenario	Estimated cost per child	Estimated return on investment
HRD Strategy Model – 3 years (nursery, KG1 and KG2 for all children)	\$2,500	\$9 for every \$1 invested
Reduced Model – 2 years (KG1 and K for G2 all children)	\$1,300	\$19.5 for every \$1 invested

## Educational and health benefits

Providing children with three years of ECCE access would produce the following benefits:



Educational  
Attainment Increase  
**0.7** Year

- Average secondary and tertiary educational attainment would increase by 0.7 years. This finding was extrapolated from test scores, where students who attended preschool had early grade reading and math scores 10-13 percentile ranks above those who had not.



Average life expectancy  
would increase by almost  
**1.0** Year

- Average life expectancy would increase by almost one year, according to differences in survival rates by education level estimated from the 2000 and 2015 censuses.

## Financial benefits

Providing children with three years of ECCE access would produce the following benefits:



Lifetime Earnings Increase  
**\$23,000+**

- Average life-time earnings would increase by over \$23,000<sup>iii</sup>, as each year of educational attainment was associated with a 5.5% increase in earnings according to labor market data.



Income Tax Revenue  
**\$1 → \$1.7**

- Every \$1 spent on ECCE would also generate \$1.7 in tax revenue over the long-term, since an estimated 17% of earned incomes in Jordan are spent on consumption taxes. In other words, the net fiscal impact of investing in ECCE would be positive from a government perspective even if private earnings and benefits such as life expectancy were not taken into account.



New Jobs for Educators and  
Caregivers  
**\$30,000+**

- The expansion of ECCE services would create more than 30,000 new jobs for educators and caregivers, boosting Jordan's low female workforce participation rate.

The study estimated the benefits of a scenario modeled on the recommendations from Jordan's **National Strategy for Human Resources Development (2016)**, where children born in 2016 would enter nursery or early childhood care at age 3, complete one year of preschool, and then two years of kindergarten (KG1 and KG2) before starting grade 1.

## Estimates are at the low end

The real benefits to ECCE are likely much higher than the study's estimated \$9 to \$20 return for every dollar invested. Even if ECCE quality is improved, the government's actual financial contribution to ECCE expansion may be significantly lower, since a large proportion of ECCE services will likely be provided by the private sector. These teachers would also likely receive lower salaries as they do currently, although the model assumes all teachers are paid at public sector rates. The study also assumes conservative economic growth in Jordan—benefits double under more optimistic scenarios. Finally, the study does not account for potential benefits such as reduced need for government aid reductions in crime and other positive externalities from improved educational outcomes.

Because children who participate in ECCE are likely to earn more and spend more as adults, the estimated increase in consumption tax revenues alone would more than compensate for the cost of the investment.

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<sup>i</sup> World Bank (2015). "Early Childhood Development." <http://www.worldbank.org/en/topic/earlychildhooddevelopment>

<sup>ii</sup> Early Grade Reading Assessment (EGRA) and Early Grade Mathematics Assessment (EGMA), conducted with 2nd and 3rd graders in Jordan in 2012. Similar patterns were found in an analysis of 2012 Programme for International Student Assessment (PISA) data.

<sup>iii</sup> The current value of money is always less than its future value due to money's interest-earning potential. The total estimated additional earnings due to ECCE exposure have been discounted by a conservative rate of 3% (according to WHO standard) to reflect the net present value of future lifetime earnings.