

Early Childhood Development

Research Findings and
Emerging Impact

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Introduction

This report synthesises the main research findings and policy-relevant recommendations of the British Academy Early Childhood Development (ECD) programme. The programme ran between 2017 and 2019, with support from the UK's Department for International Development (DFID) and the Global Challenges Research Fund (GCRF), which is administered by the Department for Business, Energy & Industrial Strategy (BEIS). Its ambition was to extend existing understanding about nurturing care for young children in low- and middle-income countries (LMICs) by funding researchers across disciplines in the humanities, social sciences, medical sciences and natural sciences to develop cross-learning and collaboration in ECD research. A total of 10 research projects were funded in Bangladesh, Ghana, Haiti, India, Kenya, Rwanda, South Africa, Uganda and Zimbabwe. Drawing on mixed methods and interdisciplinary approaches, the programme generated evidence that extends the frontiers of academic research and has the potential to inform a range of ECD policies and practices in low- and middle-resource settings.

Nurturing care refers to the conditions created by public policies, programmes and services which enable communities and caregivers to ensure children's good health and nutrition, and protect them from threats. Nurturing care also means giving young children opportunities for early learning, through interactions that are responsive and emotionally supportive. (WHO 2018)

A child's early years are characterised by rapid brain development and can be negatively affected by poverty, stress and the absence of nurturing care.ⁱ Existing evidence indicates that the provision of adequate healthcare, nutrition, a stimulating environment and early learning opportunities play a critical role in supporting young children's physical and cognitive development. Investments in early childhood promote healthy, safe and productive lives, and in doing so ultimately enhance the productivity of a country's labour force, promoting economic growth and individual prosperity. Quality ECD interventions have a particularly positive impact on children from disadvantaged backgrounds,ⁱⁱ disrupting the intergenerational cycle of poverty.ⁱⁱⁱ Recent findings indicate that high quality early childhood programmes (from birth to five years of age) for disadvantaged children will yield on average a 13% return on investment per child, per annum through better education, economic, health and social outcomes.^{iv}

Despite the tremendous potential gains of ECD investments, access to quality ECD support remains limited for children living in LMICs. Recent estimates suggest that more than 250 million children fail to achieve desired levels of cognitive development because of poverty, malnutrition and the lack of early learning opportunities.^v In sub-Saharan Africa alone, over 66% of children experience poor developmental outcomes.^{vi} In an effort to address this issue, Sustainable Development Goal (SDG) 4.2 calls for all countries to ensure, by 2030, that 'all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education'.^{vii} National governments, international organisations and non-governmental organisations have a critical role to play in achieving this goal by developing early learning policies and plans, providing financing and prioritising education in emergencies, and supporting multilateral and multisectoral initiatives on education.

Existing literature on ECD in LMICs suggests that comprehensive and integrated programmes are effective in delivering ECD interventions, and points to the key role played by teachers and community health workers. A World Bank review of ECD practices and interventions has highlighted the need for further research to identify cost-effective, scalable interventions, and to measure impacts over a longer period of time. The literature also identifies a need to

understand how to achieve effective integration, implementation and coordination of multisectoral programmes, and to consider how successful interventions can be scaled up appropriately and sustainably.^{viii}

The British Academy ECD Programme aimed to develop cross-learning and collaboration in ECD by bringing together researchers across disciplines and backgrounds. It examined research gaps in the field, how to bolster current interventions and critically explore what works, especially at scale and in different contexts whilst working with local researchers and strengthening local capacity to deliver effective research and change. The programme aimed to enhance understanding of how to measure and improve multiple ECD outcomes in order to guide the development of context-specific, culturally relevant, and cost-effective interventions. It has prompted new interdisciplinary research partnerships with local institutions in nine focus countries. Box 1 lists the projects funded under the programme.

Box 1: Research projects supported under the British Academy DFID/GCRF Programme on Early Childhood Development 2017-19.

1. **Scaling up an early childhood development intervention by integrating into health services in Bangladesh.** This project aimed to develop and evaluate the tools and processes used to train government supervisors in how to incorporate stimulation messaging into existing health services. Research team: Professor Helen Baker-Henningham (Bangor University); Dr Jena Hamadani (International Centre for Diarrhoeal Disease Research, Bangladesh).
2. **Economic conditions in early childhood and the intergenerational transmission of poverty in Bangladesh.** This project explored whether the effect of poverty during childhood on later life outcomes could be broken through comprehensive poverty reduction programmes. Research team: Professor Oriana Bandiera FBA (London School of Economics and Political Science); Professor Robin Burgess FBA (London School of Economics and Political Science); Dr Mushtaque Chowdhury (BRAC, Bangladesh; Columbia University, USA); Professor Imran Rasul FBA (University College London).
3. **The impact of parental education on cognitive development in early childhood: evidence from the long-term tracking of a randomized evaluation in Ghana.** This project examined whether secondary school subsidies for adolescents affect the cognitive development of their (future) children. Research team: Professor Esther Duflo FBA (Massachusetts Institute of Technology, USA); Dr Pascaline Dupas (Stanford University, USA); Professor Elizabeth Spelke FBA (Harvard University, USA).
4. **Testing the feasibility of incorporating support for early childhood development into the Baby Friendly Community Initiative in Kenya.** This project aimed to assess the potential to incorporate parental support for stimulation messaging into the Baby Friendly Community Initiative in rural Kenya. Research

team: Professor Paula Griffiths (Loughborough University); Dr Emma Haycraft (Loughborough University); Dr Elizabeth Kimani-Murage (African Population and Health Research Centre, Kenya); Professor Judith Kimiywe (Kenyatta University, Kenya); Dr Teresa Mwoma (Kenyatta University, Kenya).

5. **Examining the contexts, practices and costs of early childhood care and education in India: responsive models for child development.** This project aimed to investigate how to scale quality early childhood care and education (ECCE) by analysing the relevant contexts, practices and costs for disadvantaged families and communities. Research team: Dr Jyotsna Jha (Centre for Budget and Policy Studies, India); Dr Arathi Sriprakash (University of Cambridge).
6. **Scaling-up early child development interventions in Rwanda.** This project aimed to analyse, evaluate and scale up a holistic programme that supports families of children aged 0-3 to improve parenting practices. Research team: Professor Patricia Justino (Institute of Development Studies, University of Sussex); Caroline Dusabe (Save the Children USA, Rwanda).
7. **Providing the evidence base and tools for prioritising and implementing paediatric schistosomiasis control to enhance early childhood development.** This project aimed to enhance ECD in South Africa and Zimbabwe by identifying and treating paediatric schistosomiasis. Research team: Professor Francisca Mutapi (University of Edinburgh); Dr Dixon Chibanda (University of Zimbabwe, Zimbabwe); Professor Moses Chimbari (University of Kwa-Zulu Natal, South Africa).
8. **Pathways to stronger futures in Haiti: how can economic strengthening through comprehensive social protection improve early childhood development?** This project examined the value of comprehensive social protection in enhancing ECD. Research team: Dr Keetie Roelen (Institute of Development Studies, University of Sussex).
9. **Developing a scalable programme to promote early childhood nutrition and development in rural Uganda: a feasibility study.** This project aimed to develop a scalable intervention to improve early childhood nutrition and stimulation in rural Uganda. Research team: Dr Jolene Skordis-Worrall (University College London); Dr Hassan Haghparast Bidgoli (University College London); Dr Zelee Hill (University College London); Dr Peter Waiswa (Makerere University, Uganda).
10. **Assessing sustained impacts of the Quality Preschool for Ghana teacher training intervention on children's early primary grade outcomes.** This project aimed to assess the impacts of an affordable and potentially scalable in-service training and coaching programme for kindergarten teachers in private and

public schools in the greater Accra region. Research team: Dr Sharon Wolf (University of Pennsylvania, USA); Professor J. Lawrence Aber (New York University, USA); Professor Jere Behrman (University of Pennsylvania, USA).

KEY RESEARCH FINDINGS

This report highlights the main findings of the programme to the benefit of researchers, practitioners and policy makers in the field of ECD in the United Kingdom and internationally. Research findings are presented on the following themes:

- i. **Responsive Caregiving:** Integrating responsive caregiving messages
- ii. **Early Learning:** Improving schooling systems for better ECD outcomes
- iii. **Social Protection:** Strengthening economic conditions through poverty reduction programmes for better ECD outcomes
- iv. **Improved Health:** Diagnosing and treating infections

(i) Responsive Caregiving: Integrating responsive caregiving messages

A child's brain develops fastest in the first three years of life as it develops critical neural pathways for communication, cognition and socio-emotional wellbeing. During this time, and particularly within the first year, the brain is simultaneously most responsive to positive stimuli and is at its most vulnerable to negative experiences. Poverty can lead to developmental deficit within the first few months of life.^{ix} Providing children with a responsive and stimulating environment increases their sense of security and promotes communication and learning skills. Play, a key aspect of stimulation, is known to sharpen children's sensory skills, and strengthen their relationship with parents and others.^x It offers children opportunities to communicate, exchange emotions and understand their environment. Play contributes to children's developmental goals by enhancing their attention, concentration, and problem-solving, decision-making and learning skills. It also encourages cooperation and negotiation, as well as resilience to cope with stress.^{xi}

Responsive caregiving can help a child overcome some of the disadvantages associated with being born into poverty. The ECD programme tested several interventions which aimed to scale up the delivery of responsive caregiving messages to parents.

Responsive caregiving includes observing and responding to children's movements, sounds and gestures, and verbal requests. It is the basis for: protecting children against injury and the negative effects of adversity; recognising and responding to illness; enriched learning; and building trust and social relationships. (WHO 2018)

The findings serve to broaden understanding of effective and low-cost parental support models to encourage responsive caregiving at home and in communities. Several projects supported under the programme influenced parental

knowledge and promoted self-belief and, in some cases, mobilised communities to support changes in parenting practices. A number of projects addressed key challenges in integrating responsive caregiving messages into existing scalable health and nutritional interventions. The programme also supported the development of cost-effective models to scale up into universal coverage child stimulation interventions that had previously been successfully integrated into comprehensive childcare programmes.

Understanding existing parental beliefs, values and practices

Parents strive to provide the conditions that are conducive to the growth and development of their children, but notions of growth and development can differ across contexts. In Uganda, for example, Skordis-Worrall's project found that parents largely focused on their children's physical development and prioritised providing them with shelter, nutrition and healthcare. They expected child development to follow once these foundations were in place and viewed cognitive development and intelligence to be largely fixed and beyond parental influence. Constrained by resources and time, parents had few opportunities to engage in stimulating activities with their children, such as singing, playing or telling stories, and were less convinced of the benefit of such activities. Additionally, many parents in rural areas of Uganda, Haiti, Ghana and India praised the use of corporal punishment to ensure that their children were well-behaved. Her research project demonstrates that, while there is often strong local political support for ECD programming, this can require shifting the social norms at a community level to understand the importance of responsive caregiving and play.

Changing parenting behaviours for better childhood development outcomes

Interventions to increase responsive caregiving often require a behaviour change programme to shift parental understanding, values and beliefs. Skordis-Worrall argues that behaviour change is needed to shift parents' focus on childhood from a narrative of *surviving* (namely, the provision of healthcare and nutrition) to one of *thriving* (involving play and responsive caregiving). Achieving this goal requires designing culturally appropriate advocacy messages about responsive caregiving and teaching the required practical skills for parents to make toys and engage their children through play. Changing parental beliefs, behaviour and practices also requires mobilising community networks, including opinion leaders and local health workers, to normalise and promote responsive caregiving practices. Skordis-Worrall found that embedding such a behaviour change programme for responsive caregiving into various ongoing multisectoral programmes could be cost-effective, scalable and thus sustainable in low-resource settings.

Central to this change is the need to foster in parents the self-belief that they can make a difference to their children's cognitive development. Justino extended existing understanding about the ways to improve parental self-confidence, self-efficacy and knowledge for enhancing ECD outcomes in Rwanda with a programme led in 2015-16 by Save the Children Rwanda and a Rwandan NGO, Umuhuza. This research project examined the effects of a community-based holistic programme that targeted the parents of children aged 0-3 years and combined nutritional and health practices with responsive caregiving messages. The programme, called *First Steps*, was implemented as a randomised control trial. Families were randomly assigned to three groups: a control group, a 'light' treatment group and a 'full' treatment group. The 'light' treatment group met weekly for 17 weeks and listened to a radio programme that focused on improving parenting practices. At each meeting, a new episode of the radio programme was aired, and this was followed by discussions with trained facilitators. The 'full' treatment group received the 'light' components of the programme, as well as a children's book which was gifted to each family, and additional supported meetings and home visits by facilitators. The effects of both the 'light' and the 'full' treatments were positive on both parenting practices and child development after one year of the intervention. The 'full' treatment retained positive results three years after the intervention, revealing the lasting effectiveness of home visits by the facilitators. The evaluation suggested that despite being low-cost, the programme had particularly strong effects for poorer households. One of the main drivers of this effect, explaining 20% of its positive impacts, was mothers' increased time investment in childcare.

In 2018, as part of the ECD programme, Justino and her team designed and implemented a new intervention to boost parental self-efficacy. The intervention consisted of two videos coupled with a group discussion that aimed to (i) directly increase parental self-efficacy, (ii) directly improve parents' practices, attitudes and beliefs, and (iii) indirectly improve parents'

practices, attitudes and beliefs by increasing self-efficacy. After the intervention had been in place for four months, it was found that showing the videos had increased parental self-efficacy and led to even greater improvements in parenting practices. The most successful video highlighted research results from the initial *First Steps* programme, demonstrating that children who had participated in *First Steps* were performing better than peers who had not. The video praised parents on their skills and accomplishments. Of multiple ways in which the intervention increased parental practices, attitudes and beliefs, one-fifth of the effect could be attributed to the experimentally induced increase in parental self-efficacy.

Integrating ECD packages into existing services

Finding the most cost-effective ways to scale up successful ECD interventions has been an important policy challenge in low-resource settings. One promising way forward is to embed interventions into existing channels of service delivery. Prior research by Baker-Henningham and Hamadani, for example, suggested that the incorporation of parent training sessions in primary healthcare clinics in rural Bangladesh (as part of the regular duties of government health workers) led to improved caregiving practices amongst parents of high risk (malnourished) children. The intervention, which took place in 2015-2016, focused on mothers of children aged 6-42 months. Mothers were provided with new books and toys to take home at every session, and were encouraged to respond to their child's interests, and provide praise and positive feedback. The intervention led to improvements in the cognition, language, motor skills and behaviour of malnourished children who were at a high risk of poor development.

In the original study, the research team trained and supervised the clinic health staff. As part of their research project under the ECD Programme, Baker-Henningham and Hamadani developed an effective and sustainable model to scale this up by utilising government supervisors to train and supervise the health staff. The project developed mechanisms to enable the Ministry of Health to build the capacity of staff to deliver the intervention, establish technical guidelines for training and supervision for use by government supervisors, and tools for monitoring the quality of implementation at scale. The project revealed that it is possible to scale up this parenting programme by integrating it into government health services without increasing burnout rates for the health providers.

Another project, led by Griffiths, aimed to draw on the ECD potential of an ongoing WHO-recommended community-level intervention in rural Kenya, the *Baby Friendly Community Initiative* (BFCI). The BFCI programme promotes and supports exclusive breastfeeding in the first six months, as well as complementary feeding, maternal nutrition and appropriate hygiene and sanitation. It is delivered by the Ministry of Health through trained community health volunteers who visit homes for counselling, work with mothers' groups and engage fathers, grandmothers and other community members in childcare. A year after the intervention was delivered, the BFCI was found to produce positive effects on ECD outcomes. It showed an improvement in cognitive, fine motor and gross motor skills.^{xiii} The results showed that there would be benefits to integrating other ECD services into the BFCI programme.

The ECD Programme supported the integration of the [*Care for Child Development \(CCD\)*](#) initiative into the BFCI to support caregivers in providing responsive caregiving to their children. CCD is an intervention that supports families in the promotion of healthy growth and psychosocial development of children through responsive play and communication. The project found that the CCD training improved community health volunteers' knowledge on the age-specific needs of children, using locally available materials to support play, encouraging fathers and grandparents to engage in responsive caregiving, and increasing caregivers' confidence. The volunteers were able to build rapport with caregivers, were positively recognised in the community, gained confidence in their professional role, and improved in their ability to support caregivers. The caregivers (mothers, fathers and grandmothers) reported to have acquired knowledge about the importance of playing with their infants and

improving their social skills. Mothers learnt to utilise play materials and made time to play with their children. Both mothers and fathers learned that talking to their children, and naming objects, animals and people in their community enhanced infants' language development. Despite these benefits, however, it was found that community health volunteers required regular support, mentorship and financial assistance in delivering the interventions, and that they often lost motivation if this support was not provided.

Griffiths' project team has made several recommendations for similar projects:

- i. A deeper integration of the CCD and BFCI initiatives into existing programming required an integrated reporting tool for the community health volunteers including all of the outcomes that they needed to measure;
- ii. Community health workers preferred counselling cards to be presented with simplified key messages in a visual format (rather than being text-heavy);
- iii. Greater supervision and continued mentorship of the community health volunteers was needed for effective implementation (which may increase costs);
- iv. Continued engagement with communities is needed to support cultural acceptability of fathers being able to offer support in caregiving.

Jointly with the Kenyan Ministry of Health, the project team has produced a sustainable plan for incorporating parental support into future BFCI delivery at a national level. The Kenyan Government is testing this to explore how it can provide an environment that optimally supports the nurturing care of infants.

Skordis-Worrall, Baker-Henningham and Griffiths' projects have illustrated that while parents want the best for their children, their practices may not always be conducive for their children's optimal development. Understanding parental norms and values is therefore crucial for designing interventions that can alter parental behaviour whilst supporting caregivers to provide responsive care and stimulating environments for their children. These projects have developed mechanisms to integrate ECD interventions into comprehensive healthcare and nutrition programmes and have suggested models to scale up these integrated initiatives for universal coverage.

Key findings:

- Parents and caregivers are responsive to recommendations on improving home stimulation and early childhood development practices;
- Sharing results of successful parenting interventions with parents and caregivers contributes to building self-efficacy and further increases positive parental practices;
- Responsive caregiving messages can be incorporated into large-scale health or nutrition programmes in a cost-effective manner and, if sufficient support is provided, in a way which does not overburden existing community volunteers;
- Home visits to support parental engagement are highly effective, and positive impacts on parenting practices and early childhood development have been observed up to three years later.

(ii) Early Learning: Improving schooling systems for better ECD outcomes

Pre-primary, or early childhood education (ECE), usually focuses on children aged 3-6 years old. It 'employs a holistic approach to introducing young children to organized instruction outside the family context, aiming to support children's cognitive, physical, social and

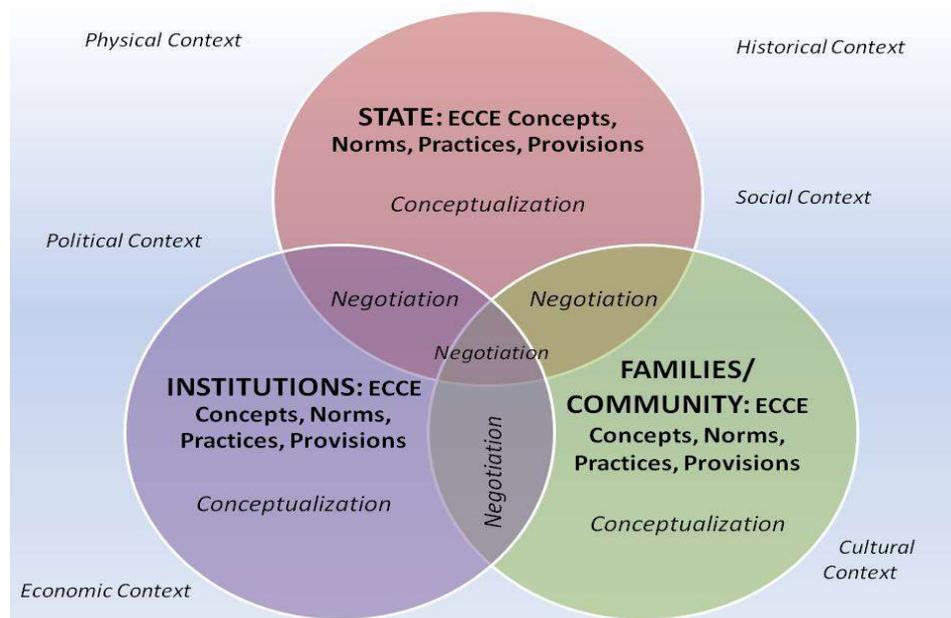
emotional development'.^{xiii} ECE offers an opportunity to mitigate against the disadvantage of being born into poverty by giving children foundations for learning that help them acquire skills such as collaboration, critical thinking, creativity and resilience.^{xiv} Lack of access to quality pre-primary schooling perpetuates inequalities at birth and increases achievement gaps. 175 million children globally cannot access pre-primary school, often due to poverty, and those who are enrolled into ECE programmes often experience low-quality schooling.^{xv}

Low quality ECE programmes with overcrowded classrooms and untrained teachers waste resources, reduce demand and fail to bridge learning gaps.^{xvi} Improving ECE requires engagement with families, communities, teachers, policy makers and the broader education system. With this in mind, the ECD programme supported research that examined structural inequalities in the provision of ECE in order to develop community responsive models, including context-specific financing approaches. The programme also supported research on the effectiveness of scalable teacher training to improve learning outcomes. Given the strong intergenerational association of human capital in LMICs,^{xvii} with the children of parents who have experienced poverty more likely to grow up in poverty themselves, the programme also examined the effect of parental schooling on ECD outcomes of children.

Community-responsive models of early childhood care and education

The project led by Jha and Sriprakash critically examined the largest state-supported early childhood care and education (ECCE) programme in two states of India – Tamil Nadu and Bihar – from the perspective of community responsiveness. It noted that ECCE-related policy debates were largely grounded in the models and practices that were developed outside the local communities, and that these had failed to represent the needs of India's most disadvantaged communities. By drawing upon in-depth ethnographies of the knowledge and practices of childcare and education within marginalised communities, the research team argued that the interactions between state policies, formal public and private institutions of ECCE provision, and families and communities should be taken into account in ECCE programme design and financing (see Figure 1). The research demonstrated that each of these groups had its own conceptualisation of 'child', 'care', 'education' and 'development', and that the norms and practices they adopted in the provision of ECCE were rooted in their respective historic, social, economic and cultural contexts. Bringing together these intersecting relations that surrounded ECCE practices, the study suggested that policy makers should ensure that 'quality' ECCE is responsive to the practices and needs of the local communities.

Figure 1: Framework for understanding the interacting fields of childdevelopment



Source: Sriprakash et al. 2018

The project noted that, despite Tamil Nadu’s history of relatively better provision of public services, tribal communities had difficulty accessing ECCE centres because of dangerous wildlife and overflowing rivers during monsoon season. In Bihar, colonial legacies of under-development and caste hierarchy strongly affected the Scheduled Castes/Tribes who lacked food and appropriate clothing which prevented them from participating in the formal ECCE system. The quality of ECCE provision in Bihar was poor: in one village, for example, the three *anganwadi* (childcare) centres that were meant to provide free preschool education, health services and supplementary feeding programmes were largely non-functioning, had few resources and irregular staffing and student attendance. Many families considered these centres as places for children to receive midday meals and health checks, rather than spaces for school-relevant learning. Access to nutritional assistance was also affected by caste hierarchies, which reinforced the disadvantages of the lower caste. Under such circumstances, those who could afford it sent their children to private low-cost ECCE centres or arranged private English-medium tutoring. The research project noted that the values and aspirations for ECCE in Bihar were influenced by the highly competitive, stratified and increasingly privatised schooling in the country. This has three key implications for the school readiness of children from marginalised families:

- i. Young children are exposed to developmentally inappropriate forms of teaching that include long periods of concentration, rote learning, corporal punishment and lack of opportunities for play;
- ii. Institutional forms of ECCE provision are considered the only legitimate site of learning. Marginalised families appeared to be caught up in ‘structural traps’ where their indigenous rich cultural models of childcare and socialisation became irrelevant for their participation within the modern economy;
- iii. Success in school readiness is seen as assimilation with the cultural practices of the dominant castes and classes. Ideas of school readiness are linked to English language ability, and parents showed a preference for private boarding schools which protected

children from the ‘village environment’. These practices and beliefs further disadvantaged marginalised families.

By generating these insights, the project raised questions over how the introduction of formal ECE appears to create and re-inscribe caste/class distinctions in these two Indian states.

Community-responsive models of ECCE costing and financing

The project led by Jha and Sriprakash also highlighted that the financing of India’s large state-based ECCE programme remains highly centralised and homogeneous, with limited local flexibility. By combining ethnographic insights with a costing exercise, the project proposed an alternative framework that is more responsive to the local context, practices, customs and requirements.

This framework had four elements:

- i. entitlements,
- ii. accountability,
- iii. flexibility, and
- iv. sustainability.

Its guiding principles offered more flexibility locally, whilst also meeting standard norms. Taking into account all costs incurred (including non-monetary costs), a costing exercise was conducted for 17 ECCE centres in 5 different states of India. This responsive costing model has strong implications for ECCE policy and practice in low-resource settings. The project noted that despite a growing recognition of the need for locally responsive interventions, the standard norms that are adopted for the accountability and feasibility of large-scale interventions made such practices seem impossible. The new framework showed that it is possible to encourage community-specific practices while meeting global standards for entitlements and accountability.

Improving ECE quality through classroom transformation

Quality ECE, whether delivered formally in classrooms or informally in the community, is central to achieving young children’s learning goals. Ensuring that ECE is of high quality, however, is a multifaceted challenge. A longitudinal study in Ghana led by Wolf through the ECD programme built on a school-randomised experiment, *Quality Preschool for Ghana (QP4G)*, to assess the impact of an affordable and potentially scalable in-service training and coaching programme for kindergarten teachers (for 4-6-year-old children in Kindergarten 1 and Kindergarten 2) in private and public schools in the Greater Accra Region. This one-year teacher training and coaching programme was delivered by the Ministry of Education and focused on transforming teaching practices from rote learning and strict discipline to activity-based child-centred learning, emotional support and positive behaviour management.

Wolf’s project explored whether the positive effects of the intervention on children’s academic skills and non-academic skills such as executive function (the cognitive processes that allow for planning, reasoning ability and the integration of thought and action) were sustained after two years when children transitioned into primary school. The research found that the training and coaching of teachers in the intervention year was effective and that the children were still outperforming their peers in executive function and literacy/numeracy skills two years later. In addition, the gains were found to be much higher if the children had found themselves in a classroom with higher quality teaching measured by better emotional support. The evaluation indicated that improving activity-based instructions and positive behaviour management in ECE improved children’s trajectories of learning executive function skills. This, in turn, enables children to adapt to school more successfully, and makes them more likely to achieve

both academically and personally. The study also recommends that aligning activity-based, child-centered strategies in ECE with the pedagogies used in early primary school can lead to better outcomes and sustained gains for children.

The project also found unexpected long-term negative effects of adding a parental awareness programme to the teacher training and coaching programme. As part of the intervention, the study held parental awareness meetings, in which parents watched a video with content on the importance of play-based learning and parents' role in child learning, and discussed that content with a trained district government ECE coordinator. However, these meetings were found to *reduce* the rate of growth in children's school readiness skills, specifically academic outcomes in literacy and numeracy. This indicated that parents in Ghana may have a specific vision of teaching practices which contradict the new pedagogies being used. The project team suggested that parents may have interpreted new teaching practices as unfavourable to their children's development thus invoking support for traditional teacher-directed learning as opposed to play-based, student-focused learning. Teachers reported that some parents asked for strict, traditional disciplinary practices which caused frustration amongst teachers who were trying to use new methods. The team recommended that future interventions put greater emphasis on the cultural context and integrating parental values and aspirations into programme content. Furthermore, the negative impact of the parental awareness programme on literacy and numeracy was higher for boys than for girls, suggesting greater emphasis placed by parents on sons' preschooling despite equal enrolment rates for boys and girls. This points towards potential gender inequality in parental educational values even when ECE is generally considered to equalise access for young boys and girls.

Intergenerational gains of education

The ECD programme has also made a major contribution to existing understanding of the intergenerational gains of parental education on ECD. The research led by Duflo examined the extent to which free secondary education in one generation led to improved ECD outcomes for the next. The project tracked the men and women (part of a prior randomised control trial) who, in 2008, were provided with a four-year scholarship to attend senior high school in Ghana. Without this financial assistance, the beneficiaries of the intervention would not ordinarily have attended secondary school. The project sought to determine whether the children of these men and women in the treatment group (at ages 14-18 months, 3 years and 5 years) had different cognitive development across several domains (literacy, numeracy, language, social relationships and executive function) compared to the children of those in the control group (whose parents did not attend secondary school).

Preliminary analysis indicated that the secondary school scholarship had improved the next generation's cognition scores and that these effects were found to be stronger for the children of women who received the scholarship. The study suggested that supporting secondary schooling for adolescents, and particularly girls, may be one of the most effective interventions for fostering the successful early development of their (future) children. By sharing the results of the study with the Ministry of Education, the research team strengthened the case for making all secondary education free in Ghana.^{xviii}

The research supported through the ECD programme has generated insights into the potential dangers of deepening structural inequalities through embedding formal ECE in a standardised way regardless of context. A strong case has been made for ECE provision to be responsive to the historical, social, cultural, economic and political contexts of communities with a view to valuing and including the most marginalised families. The projects have also indicated that student-centred learning, which addresses the distinct needs of students and moves away from a focus on the teacher, is effective in these early years but that parental beliefs can negatively impact on the effectiveness of new teaching methods. The programme has furthermore demonstrated that providing access to secondary schooling can improve the ECD of the recipients' future children.

Key findings:

- Downward extension of the formal education system for providing ECCE through models that overlook local historic, social, economic and cultural contexts are not only developmentally inappropriate, but could also perpetuate existing structural inequalities;
- Community-responsive (rather than centralised) models of costing and financing ECCE could improve outreach, enhance accountability and provide local flexibility whilst also meeting global standards;
- Training teachers to promote activity-based instruction and positive behaviour management improves children's learning trajectories. However, parental preference for traditional approaches can negatively impact on the effectiveness of new methods. Moreover, greater alignment between ECE and primary schooling could further improve outcomes and sustainability;
- Supporting secondary schooling particularly for girls and children in poverty improves the ECD outcomes of their (future) children.

(iii) Social Protection: Strengthening economic conditions through poverty reduction programmes for better ECD outcomes

An estimated 385 million children lived in extreme poverty in 2016.^{xix} Poverty can shape childhood experiences and development outcomes, particularly if children experience challenges such as malnourishment, violence or stress. Research indicates that children in poverty are not only exposed to higher risks, but that the consequences of those risks are more severe than those experienced by children not living in poverty.^{xx} There are known long-term educational and economic implications of growing up in deprivation. Poorer neighbourhoods are often characterised by weak service delivery and lack of opportunities necessary for the development of children.

The profound impact of poverty on child development points to the opportunities that poverty reduction programmes offer for improving young children's developmental outcomes, and the ECD Programme has generated important insights into the ways in which this can be achieved. In rural Bangladesh and Haiti, comprehensive interventions for poverty reduction that are commonly known as *graduation programmes* were evaluated. Targeting the extremely poor, such programmes aim to provide a 'big push' to families to begin a positive cycle of economic advantage and improved livelihoods which helps them 'graduate' out of poverty.^{xxi}

Designed by the NGO Bangladesh Rural Advancement Committee (BRAC), the Targeting the Ultra Poor (TUP) programme was initiated in 2002 to address extreme poverty and, by 2016, had already helped 1.77 million poor households in the country. This two-year graduation programme combines the components of livelihoods, social safety nets, financial inclusion and social integration.^{xxii} A combination of assets (including a high-value asset for long-term income generation, such as a cow, and a small asset, such as poultry, to generate cash flow in the short-term) are transferred to extremely poor women to support them out of poverty in a sustainable way. Beneficiaries are taught a wide range of technical skills suitable for their selected enterprise and are provided with cash grants and loans for their new livelihoods. They also receive small weekly stipends that act as social safety nets, improving their food security

and keeping them focused on their enterprise. The success of the graduation programme has inspired a number of interventions in several other LMICs including the Chemen Lavi Miyò (CLM) programme that has been implemented by the NGO Fonkoze in rural Haiti. The ECD Programme supported research by Bandiera and her team into the long-term ECD impact of the TUP in Bangladesh and a qualitative in-depth impact assessment of the CLM in Haiti by Roelen.

The CLM graduation programme was found to increase women's income in rural Haiti. The programme integrated messaging around parenting practices into the regular training on skills provided by the graduation programming. Beneficiary women reported an increase in their sense of purpose and found new confidence in their ability to improve their children's wellbeing. Children in the beneficiary families had better health and nutrition, and improved food intake, sanitation and housing. Caregivers also learned about the importance of communicating with their babies by singing to them and soothing them when distressed.

“CLM has brought changes to the community. It has helped people build houses and latrines. People have been given animals, and the programme has taught us how to manage the things that we have. It has taught us how to write our names. It has given us a small amount of money to enable us to have a small sòl [savings] so we can send our children to school. They have given us training and shown us how we should take care of the children and how we should look after our homes.”

24-year-old female CLM participant and mother of 3 children, La Chappelle

“CLM has made others see us as human beings.”

Female CLM participants in focus group discussion, La Chappelle

“Since joining CLM, I learned to sing with the children and they learned how to play with other children (of CLM members).”

25-year-old female CLM participant and mother of 5 children, La Chappelle

Bandiera's research examined the long-term intergenerational health, nutritional, educational and economic outcomes of the TUP programme (2007-14) for children from the beneficiary families in rural Bangladesh. The project found that graduation programmes can help women escape the poverty trap and reduce malnutrition and stunting of their children. The sample consisted of approximately 6,000 children aged 5-25 whose parents lived in extreme poverty. The sons of the beneficiary mothers had a 5 percentage points higher probability of completing primary schooling and a 6 percentage points higher probability of completing junior secondary schooling, compared to those in the control group. Both sons and daughters from the beneficiary group were more likely to attain some level of secondary schooling compared to the control group. Occupational gains over generations were also observed, with a greater number of the sons of beneficiary mothers found to be in skilled work rather than casual agriculture jobs. Prior to the intervention, wealthier participants were mostly engaged in land cultivation with poorer participants providing casual labour. After the intervention, the share of the poor undertaking casual labour dropped by 10 percentage points with a proportionally increased engagement in land cultivation and livestock rearing. The occupational effects (transition from casual labour to cultivation/livestock rearing) were greater for those whose family took part in the programme when they were young, thus pointing towards the higher longer-term impact of graduation programmes on younger children. Occupational effects of

the intervention on daughters were, however, muted: girls from both the treatment and control groups were engaged in household chores.

Research conducted by Roelen on the impact of graduation programmes in other LMICs confirms that these programmes are likely to have positive ECD outcomes by reducing levels of poverty. In addition, as training and coaching are central to the graduation programmes, they also offer an opportunity for including messaging to change parenting practices. Roelen's studies have also indicated some of the potential risks of women's increased economic participation on ECD as this tends to conflict with their traditional caring roles. The expectation that women would undertake the bulk of childcare responsibilities often remains unchanged, despite their new economic responsibilities. Combined with a lack of support networks, women's extra duties mean that young children are often left to be looked after by older siblings or elderly relatives since private or public childcare is often very hard to access and, in many cases, community expectations mean that it is assumed that children would be cared for by the family. The success of graduation programmes in improving ECD outcomes depends on addressing gender norms with greater inclusion of men in care roles, and the availability of affordable quality childcare locally.

The projects supported through the ECD programme have generated important insights into the extent to and the ways in which comprehensive poverty reduction and economic strengthening programmes could affect ECD as well as later educational and economic outcomes for children. They have also highlighted the persisting burden of care on women despite their increased economic participation, which affects both women's wellbeing and the quality of care received by young children.

Key findings:

- Comprehensive graduation programmes for poverty reduction targeting families in extreme poverty can improve long-term educational and economic outcomes of children, and have greater impact on those who benefit from these programmes at a younger age;
- Increased economic participation of women resulting from poverty reduction programmes could negatively affect their ability to provide responsive care to young children;
- Graduation programmes need to explicitly address prevailing gender norms by encouraging men to share care duties as women increasingly share economic responsibilities.

(iv) Improved Health: Diagnosing and treating infections

Various infections that children contract in the first 24 months of their life can cause malnutrition and affect brain development.^{xxiii} There could be severe consequences from exposure to infectious diseases if these are not diagnosed or treated in time. Schistosomiasis, for example, is the second most prevalent parasitic disease in sub-Saharan Africa. Causing bladder and kidney disorders with serious implications for childhood development, an estimated 50 million preschool-age children affected by schistosomiasis remain outside the national control programmes that cover the adult population. Children often contract the infection within the first five years of life and carry it during their school-age years. The impact of schistosomiasis on ECD outcomes, previously unresearched, was examined through the ECD programme.

The project led by Mutapi assessed the impact of schistosomiasis and its treatment on child development across five culturally appropriate ECD measures in South Africa and Zimbabwe:

- i. foundations of learning;
- ii. language and communication;
- iii. eye and hand coordination;
- iv. personal-social-emotional functions; and
- v. gross motor function.

The project challenged caregivers' perceptions by demonstrating the prevalence of schistosomiasis in preschool children. This ground-breaking research was the first to establish a relationship between schistosomiasis and children's learning ability. As many as 40 out of 133 children assessed in Zimbabwe showed lower than appropriate levels of child development. Whilst the children with schistosomiasis performed well on the development sub-scales that required physical skills, such as hand-eye coordination and gross motor functions, they scored poorly on learning-related sub-scales. Schistosomiasis also affected preschool-age children's mental health. In South Africa, schistosomiasis appeared to compromise language development and learning ability, as well as physical performance.^{xxiv} For an early diagnosis and treatment of schistosomiasis, Mutapi's study recommended appropriate training and active involvement of local community members, including village health workers, village heads and teachers. It also suggested that a significant proportion of young children can be reached, assessed and treated for schistosomiasis at ECD centres.

Key findings:

- Schistosomiasis infection negatively affects children's learning abilities, language development and physical performance;
- ECD centres offer the opportunity to screen children with infection and provide them with treatment;
- Appropriate training and involvement of local community members can help in the diagnosis of schistosomiasis, thus ensuring early treatment for infected children.

IMPACT AND RELEVANCE

Projects funded under the ECD Programme worked closely with relevant government ministries and other stakeholders in the Global South, and pathways for policy impact were built into the research designs from the outset. As indicated in the preceding sections, there are already early signs of the impact of these projects on national policies and practices, including indications of future uptake.

Developing and testing cost-effective models to deliver successful ECD interventions at scale was one of the core objectives of the ECD programme. Baker-Henningham's research project successfully developed a low-cost model to integrate home stimulation into existing health services in Bangladesh, implementing it in close collaboration with the Ministry of Health and Family Welfare and the Ministry of Women and Child Affairs. The success of the model has led the Government of Bangladesh (with support from Grand Challenges Canada) to fund the scale-up of the integrated programmes to a national level. In the first stages, this is being scaled up to 550 clinics (training over 2,000 government staff and reaching 22,000 families by end of 2020). The model will achieve national scale-up by 2024, by which time all 13,000 clinics will be implementing the sessions, 40,000 government staff will have been trained and

the intervention will be benefiting 520,000 families every year. The intervention is also being adapted for use in the Middle East and Colombia.

The ECD programme has also generated insights to inform the design, content and delivery of large-scale poverty reduction programmes to make them more responsive to ECD. The findings on the impact of poverty reduction on ECD, generated from Bandiera's longer-term evaluation of BRAC's Targeting the Ultra-Poor programme, are now feeding into the advocacy messages of BRAC and are informing the design and delivery of its upcoming programmes. The findings of a similar research project in rural Haiti, led by Roelen, have been instrumental in the adaptation of the poverty reduction programme CLM, which has committed to incorporating messages around responsive caregiving and early learning in programming, and also to addressing prevalent gender norms around caregiving responsibilities, for example by providing childcare when female programme participants take part in programme training events. In addition, the Haiti Government's Working Group on Child Development is actively reviewing the findings of this research project and has indicated that the findings will be used to inform the development of the national social protection strategy.

Aspects of the ECD programme focusing on the diagnosis of paediatric schistosomiasis, identification of its consequences for ECD outcomes, and the effectiveness of treatment in South Africa and Zimbabwe, have informed national and local policies and practices. The project led by Mutapi has maintained a close collaboration with the Ministry of Health in Zimbabwe and the National Institute for Communicable Diseases in South Africa to incorporate the findings into the National Strategy for Control and Elimination of Neglected Tropical Diseases. At the local level, over 1,000 children were screened for the condition and over 100 successfully treated. This project has inspired researchers at the College of Psychiatrists in Zimbabwe to work with the project team to refine context-specific measurement tools as well as explore local solutions to the mental health challenges identified as part of the research project.

Wolf and Duflo's projects were implemented in partnership with Innovations for Poverty Action Ghana which maintains an extensive engagement with government and other stakeholders to disseminate the research findings and ensure their uptake in policy. The team led by Duflo has identified pathways through which the secondary schooling of parents from poor backgrounds, when supported by a scholarship programme, positively impacts the early childhood development outcomes of their children. The project, by demonstrating the intergenerational gains in the context of ongoing policy debates, is reinforcing the case for expanding secondary schooling in Ghana.

As well as improving the evidence base on multisectoral ECD interventions, under the ECD programme scholars based in the UK and the United States have also strengthened their collaborations with research institutions from the Global South, as well as the government departments and ministries that were implementing partners for a number of interventions. Critically, the ECD programme has strengthened interdisciplinary research capacity in the nine countries in which research took place. The programme has offered support for this by bringing together researchers from the UK and the participating countries to hone their data analysis skills and writing, and to establish critical networks for research on ECD. The programme helped researchers who were already established in other fields to gain new skills and to extend their research agenda towards ECD.

CONCLUSION

This report offers a synthesis of the key findings generated under the British Academy ECD programme. The ECD programme was a response to the increasing realisation that, despite high economic returns to investments in ECD and pre-primary schooling, an overwhelming

proportion of children across LMICs continue to receive insufficient and inadequate care and opportunities for their development and learning, with detrimental effects on their physical, emotional and cognitive development. The programme has made several valuable contributions to the field through formative interdisciplinary studies in diverse contexts. It has highlighted that the early years are the best time to invest to promote positive individual and societal benefits, but that they also present the greatest risk to under investment.

The findings of the programme documented in this report extend the frontiers of academic research and provide valuable evidence for local, regional, national and international stakeholders for their policies and programmes to improve ECD in LMICs. By finding that parental values, self-beliefs and knowledge may negatively impact the optimal development of their children, the programme has identified the most effective ways to engage with parental norms and values for the efficient and effective design of ECD interventions. Such insights could be particularly valuable for integrating ECD packages into pre-existing comprehensive healthcare and nutrition programmes for universal coverage in low-resource settings. Furthermore, given the ongoing expansion of early childhood education across LMICs, the programme has highlighted the fact that, under normative models of international development, structural inequalities could be perpetuated as a result of the downward extension of the stratified, competitive and commercialised formal schooling to early years. Expansion of ECE and greater alignment of pre-primary and primary schooling needs to consider, and be responsive to, the historical, social, cultural, economic and political contexts in communities characterised by caste and other forms of hierarchy. This report has also presented insights into the pathways through which increasing access to secondary schooling in one generation leads to the improvement of ECD outcomes in the next. It has also offered a fresh understanding of the ways in which social protection programmes could be improved to enhance the early childhood development of children in the beneficiary families and to reduce the negative effects of women's increased participation in paid work on their own wellbeing and that of their children. Moreover, the programme has offered groundbreaking insights into the ECD consequences of infectious diseases such as schistosomiasis amongst young children.

The British Academy ECD programme has demonstrated the value of supporting interdisciplinary and north-south collaborations by advocating for further investments in research on cost-effective, sustainable and scalable ways to improve early childhood development in LMICs. However, as the tools for ECD measurement inherently reflect the cultural beliefs, values and practices of child-rearing in their particular social and cultural contexts, there is a significant risk of cultural imposition in expanding the ECD research agenda in LMIC contexts. It is crucial for gaining a culturally informed understanding of ECD in LMICs to develop context-specific measures or at least to carefully adapt existing measures to minimise a wide range of biases. To this end, the ECD programme has contributed towards the development of new measurement tools and their testing for relevance and efficacy in diverse cultural contexts. These new approaches, enabled by the programme, are transposable and researchers are planning to use these in other contexts, and to research projects beyond ECD.

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ⁱⁱ United Nations Children's Fund, *A World Ready to Learn: Prioritizing quality early childhood education*, UNICEF, New York, April 2019.

ⁱⁱⁱ See, for example: Baker-Henningham, H, López Bóo, F. Early childhood stimulation interventions in developing countries: a comprehensive literature review. Rochester (NY): Social Science Research Network, 2010. Britto, P., Engle, P & Alderman, H. Early intervention and caregiving: evidence from the Uganda nutrition and early child development program child and health education. *Child Health Educ*. 1: 112-133, 2007; Engle, PL, Black, MM, Behrman, JR, et al. Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world. *Lancet*, 369:229-42, 2007; Nores, Milagros, and Steven Barnett, W., 'Benefits of Early Childhood Interventions Across the World: (Under) Investing in the very young', *Economics of Education Review*, vol. 29, no. 2, 2010, pp. 271-282.

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- ^x Whitebread, David, Kuvalja, Martina, & O'Connor, Aileen. "Quality in Early Childhood Education: An International Review and Guide for Policy Makers." With contributions from Qatar Academy, WISE 20, World Innovation Summit for Education, Qatar Foundation, Doha, 2015.
- ^{xi} See for details: Hincks-Dellcrest Centre, The Learning Through Play Calendar: Training Manual. Toronto: The Hincks-Dellcrest Centre, 2002; Milteer R.M., Ginsburg K.R. Maintaining Strong Parent-Child Bond: Focus On Children In Poverty, The Importance Of Play In Promoting Healthy Child Development, *Pediatrics*, 129, DOI:10.1542/peds.2011-2953.
- ^{xii} Cognitive skills: a mean difference in ASQ3[®] problem solving scores of 3.73 units was observed between the intervention and control group); Fine motor skills: a mean difference in ASQ3 fine motor scores of 4.0 units was observed between the intervention and control group; and Gross motor skills: a mean difference in ASQ3 gross motor scores of 5.58 units was observed between the intervention and control group.
- ^{xiii} United Nations Children's Fund, A World Ready to Learn.
- ^{xiv} See for example: United Nations Children's Fund, Reimagining Life Skills and Citizenship Education in the Middle East and North Africa: A four dimensional and systems approach to 21st century skills, UNICEF Middle East and North Africa Regional Office, Amman, 2017, http://education2030-arab-states.org/PDF/d816129f-5d08-40d1-9984-d587631e1b14_report1.pdf; Naudeau, Sophie, et al. Investing in Young Children: An early childhood development guide for policy dialogue and project preparation, World Bank, Washington, D.C., 2011.
- ^{xv} United Nations Children's Fund, A World Ready to Learn.
- ^{xvi} See for details: Rose, Pauline, and Alcott, Benjamin, 'How Can Education Systems Become Equitable by 2030?', DFID Think Pieces – Learning and Equity, United Kingdom Department for International Development, London, August 2015, pp.12-14, <http://uis.unesco.org/sites/default/files/documents/how-can-education-systems-become-equitable-by-2030-learning-and-equity-pauline-rose-benjamin-alcott-heart-2015-en.pdf>, accessed 27 February 2019; Computations by UNICEF, based on the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS) global database, 2018. Estimation based on UIS pre-primary-age population and gross enrolment ratio (GER) of pre-primary education in the most recent year available (2011–2017); United Nations Children's Fund, 'Early Childhood Education', UNICEF, New York, December 2017, <https://data.unicef.org/topic/early-childhood-development/early-childhood-education>, accessed 28 February 2019.
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- ^{xxi} See for details: Carter, M. R., & Barrett, C. B. Asset threshold and social protection: a 'think-piece', *IDS Bulletin* 38(3), pp. 34-38. 2007; Hashemi, S. M., & Umaira, W. New pathways for the poorest: the graduation model from BRAC. CSP Research Report No. 10. Institute of Development Studies; Devereux, Stephen, & Sabates-Wheeler, Rachel. Graduating from Social Protection?, *IDS Bulletin*, Volume 46, Issue 2, pp. 1-12, March 2015.
- ^{xxii} It combined productive assets with cash transfer and long-term investments including life skills, technical and vocational training, enterprise development, behavioural change and financial planning.
- ^{xxiii} About, F. E., & Yusufzai, A. K. Global health and development in early childhood. *Annual Review of Psychology*, vol. 66, 2015, pp. 433-57.
- ^{xxiv} These different effects are caused by different schistosome species in each country: Zimbabwe predominantly has the urogenital species *Schistosoma haematobium* while South Africa has predominantly the intestinal species *S. mansoni*. These may result in different disease impacts.