



## Executive Summary

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# Impact Evaluation of the SADA Millennium Villages Project in Northern Ghana



The Millennium Villages Project (MVP) aims to demonstrate how the Millennium Development Goals (MDGs) could be achieved locally through an integrated approach to development.

While the MDGs have now been superseded by the Sustainable Development Goals (SDGs, 2016–30), there remains a consistent thread to the MDGs around issues such as eradicating poverty, preventing avoidable deaths and improving education.

Furthermore, the interconnected nature of the SDGs means the MVP model also has relevance for those seeking to address extreme poverty by taking an integrated approach to sustainable development.

**This report summarises the findings from what we believe to be the first independent impact evaluation of the MVP approach.**

It is hoped that the evidence and analysis will be of relevance to a wide range of actors in international development.



# Background to the Millennium Villages project

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At a UN Summit in September 2000, world leaders adopted the Millennium Declaration, which committed nations to a new global partnership to reduce extreme poverty and address pressing challenges of hunger, gender inequality, illiteracy and disease.

The MVP aimed to showcase, *'...how effective an integrated strategy for health care, education, agriculture, and small business can be'* Former UN Secretary-General Ban Ki-Moon.

After a decade, around half a million people in 14 different sites across 10 African countries have been part of the global Millennium Villages initiative – an investment totalling in excess of US\$300 million.

The MVP can be viewed as an experimental application of the poverty trap theory – where extremely poor countries are 'trapped' in poverty and attempts to increase incomes have very little success. The central thesis of the MVP approach is that undertaking simultaneous investments ('a big push') would lead to a sustained development pathway out of poverty, rather than the more typical approach of smaller investments that are specific to each sector.

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Former UN Secretary-General Ban Ki-Moon.

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## Typical MVP interventions include:

- > Food production
- > Nutrition
- > Education
- > Health services
- > Roads
- > Energy
- > Sanitation
- > Enterprise diversification
- > Environmental management
- > Business development
- > Communications
- > Water supply

# Background to the Millennium Villages project

The MVP was first piloted in Kenya and Ethiopia, and in 2006 was launched at scale. In 2012, the UK Department for International Development (DFID) funded US\$11 million into an MVP in Northern Ghana that ran until December 2016.

**The project targeted a cluster of communities of up to 26,500 people in the West Mamprusi, Mamprugu Moagduri and Builsa South districts of northern Ghana – an extremely poor area with 80% and 90% of the population living below the national poverty line.**

The project was spearheaded by the Earth Institute (Columbia University), with operations overseen by the Millennium Promise and the semi-autonomous Government of Ghana (GoG) agency, Savannah Accelerated Development Authority (SADA).

## The project

### Timeline

2012 - 2016

### Funding

US\$11 million

26,500 people

in a cluster of villages

80-90% of people living below the poverty line

### Area of evaluation

Northern Ghana

### Northern Region

- > West Mamprusi District
- > Mamprugu Moagduri District

### Upper East Region

- > Builsa South District



# Rigorous impact evaluation

There have been previous evaluations of MVPs by other researchers. Some have conducted evaluations using data on project and control villages collected by the Earth Institute, although some questions have been raised about the validity of these estimates (Bump et al. 2012). Other studies have exploited data from demographic and health surveys to assess the impact of the MVP (Clemens and Demombynes 2012), or a combination of project data and matched survey data (Wanjala and Muradian 2013).

**We believe to date, our evaluation is the most statistically valid, comprehensive and qualitatively informed assessment of impact of the MVP.**

## Specifically, our evaluation differs from previous ones in four main ways:

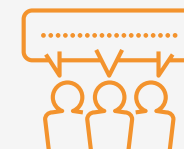
- > Data is collected from a sizeable project and matched control groups before and after project implementation.
- > Data is collected from repeated interviews with the same households and individuals (panel data).
- > Data is collected on a wide range of welfare indicators covering all the MDGs.
- > The evaluation is complemented and validated by a concurrent qualitative assessment of the MVP's impact.

**At the core of this study, a difference-in-difference (DiD) methodology has been used to estimate impact, based on the difference in the change over time in the average outcomes between the project and in the comparison groups.**

The study also investigates possible diffusion or displacement effects that may affect the validity of the control groups – that is, where in real world social settings non-governmental organisation or government interventions significantly reduce in the project areas or significantly increase or decrease in control areas. The analysis shows no perverse effects of the MVP on other projects operating in the control areas, and any possible such bias (either way) is likely to be small.

## Evaluation key facts

**Data collected from sizeable project and control groups**

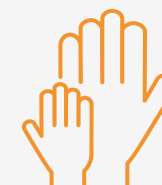


**5 survey rounds of households and repeated interviews**

**Confirmatory and exploratory analysis**



**5 years duration**



**Data collection on a wide range of welfare indicators**



**Household surveys in 35 villages within the site and 68 control villages**

**3 qualitative impact assessments**



# Rigorous impact evaluation

As per the Analysis Plan, the primary aim of the evaluation is to undertake a **confirmatory analysis**: to test whether the project goals and hypotheses are supported by the data, including the achievement of target outcomes (the MDGs), as well as impact heterogeneity, multiple outcomes testing, programme participation and econometric methods.

In addition, the evaluation has undertaken an **exploratory analysis**: testing the theories, enablers and constraints that explain programme success and formulating new hypotheses about how the programme works. This includes analysis of spillover effects, programme impact on non-MDGs outcomes, contributing factors and breaking the poverty trap.

In addition to the DiD analysis of impact, the evaluation deploys a mix of methods. The aim of the qualitative analysis is to help better understand how changes have occurred (or why they have not), unintended effects and how the project affects those who are poorest and most marginalised in the area.

## There are three qualitative modules

- 1 An **institutional assessment** that captures institutional change, particularly at the district and community levels.
- 2 A **reality check approach** that uses a condensed immersion approach to better understand the realities of households and unintended consequences for them.
- 3 An '**interpretational lens**' that uses an adapted form of participatory rural appraisal to obtain feedback and insights to help interpret the initial statistical findings, using different well-being groups.



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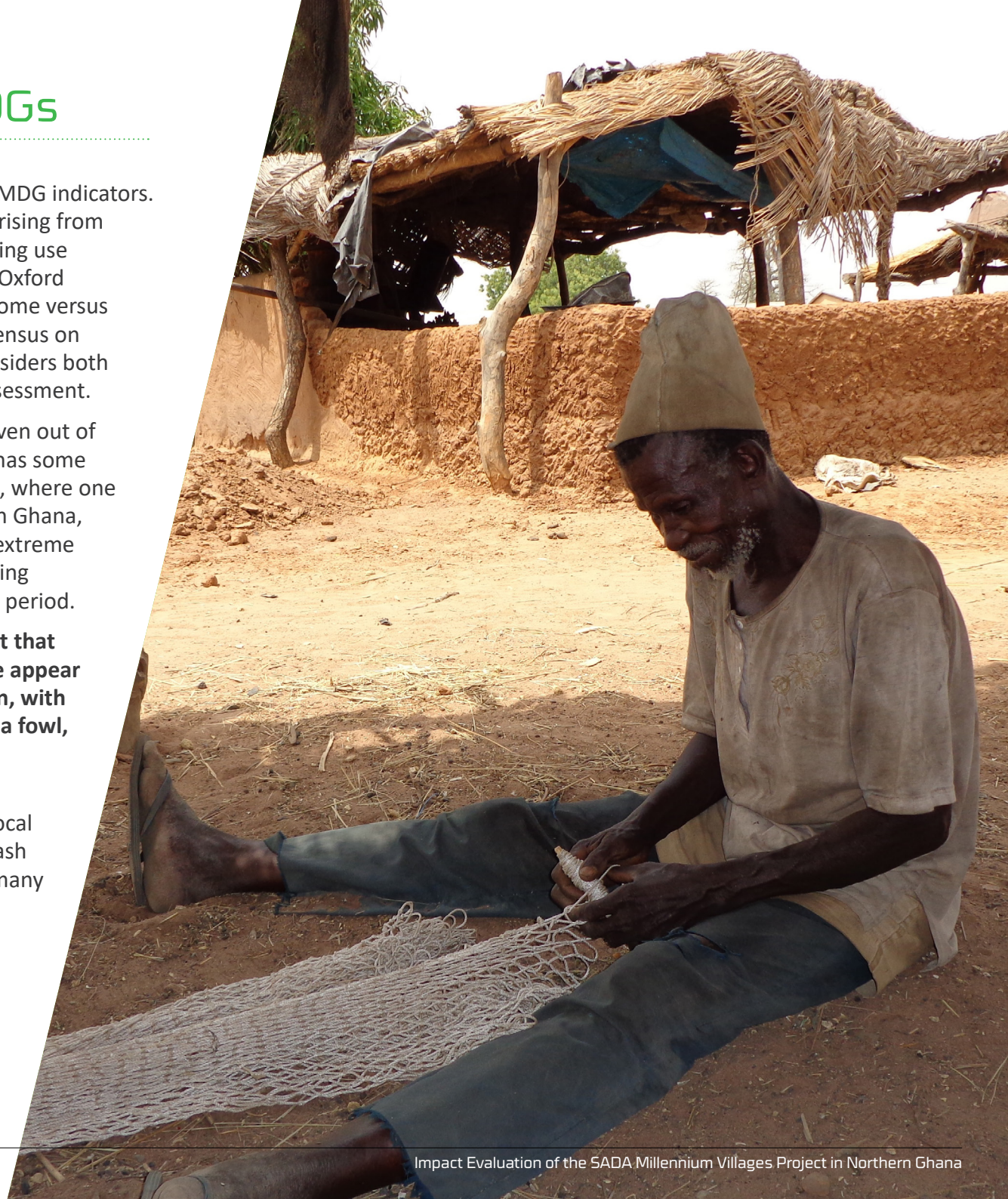
## Impact on poverty and the MDGs

Our approach to assessing poverty is grounded in the official MDG indicators. However, acknowledging the potential measurement issues arising from this approach, we carried out complementary analysis, including use of recognised indicators of income and consumption and the Oxford Multidimensional Poverty Index. Debate on the validity of income versus consumption indicators of poverty highlights the lack of consensus on the superiority of either approach. Our analysis therefore considers both approaches with supporting evidence from the qualitative assessment.

Overall, the project had a statistically significant impact on seven out of the 28 MDG outcome indicators – which, at a headline level, has some consistency with the retrospective evaluation of 10 MVP sites, where one third of its targets were met (Mitchell et al. 2018). In Northern Ghana, the MVP did not however achieve the MDG target to reduce extreme poverty and hunger at the local level (Goal 1), although reducing poverty on this scale is very hard to achieve within a five-year period.

Our exploratory analysis shows that **incomes did increase, but that this did not result in increased consumption. Instead, people appear to have viewed any income rise as a temporary phenomenon, with some saving in the form of liquid assets (e.g. chickens, guinea fowl, goats).**

The qualitative studies further highlight the complexity of the income-expenditure-savings dynamic, particularly given the local context and deeply entrenched behaviours (such as surplus cash earmarked for a backlog of funerals that may be delayed for many years and unlikely to be captured in survey data).



Overall, there is no evidence that people living in the MVP areas have escaped the poverty trap. Incomes have grown at the same rate for all households, leaving inequality unchanged. Income growth has been neither pro-poor nor pro-rich and has increased in a similar fashion for all households. This is supported by qualitative studies, which similarly found little discernible difference, although this was largely because – apart from only very small percentages of inhabitants being classed as ‘better off’ – there was so little to separate different well-being groups anyway.

In terms of the other MDGs, there was some attributable progress against three other goals. Namely, the project did increase primary enrolment rates (Goal 2); it increased the proportion of births attended by professionals and the number of women said to be using contraceptive methods, although it is not possible to assess the effect on maternal health (Goal 5); and, lastly, it increased access to and use of improved toilets (a target under Goal 7), although there is qualitative evidence that this is unsustainable.

The study also considers spillover effects, and whether project benefits extend to control areas by distance, using a stratification of near and far-away control groups. The overall findings do not, however, support the hypothesis of geographic spillover effects whereby the benefits may have spread from the project to the control areas.



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## Exploratory findings

**Beyond monetary-based measures of poverty, there is evidence that well-being may have improved.**

We have considered this in two main ways.

First, an analysis of the Multidimensional Poverty Index (MPI) (multiple deprivations in living standards, health and education) shows that the MVP produced an attributable reduction in multidimensional poverty. We tested the sensitivity of this finding and no single indicator is driving the MPI result, but two indicators together may be (improvements in school attendance and sanitation).

Second, the MPI is generally corroborated by people's own perceptions of improvements in well-being; with life in the MV areas seeming to have got better across a range of dimensions.

As the qualitative studies demonstrate, there has been a noticeable change in the MV areas over the period, with road and electricity improvements, greater access to public provision of services (especially health, but also items such as tractor hire) and growing cash needs (where they could be met). Indeed, people's welfare is likely to be linked to perceptions around access to public health, education and so forth – which have been significant (and tangible) MVP investments in the locality.

As the qualitative studies demonstrate, there has been a noticeable change in the MV areas over the period, with road and electricity improvements.



*Greater access to public provision of services (especially health, but also items such as tractor hire)*



# Health

In terms of health, the MVP has contributed to improvements in health facilities (with increased numbers of patients visiting), plus an increase in home visits by community health workers – though the quality of the latter is not fully understood, with concerns that it was driven more by the project requirements to distribute items. For health outcomes, the most significant impact of the MVP has been the reduction in the prevalence rates of stunting, with mothers consciously increasing the protein content of their children’s diets, and children eating more meals overall (as confirmed by our assessment of the dietary indices). This positive impact of the project on stunting is encouraging, as stunting is an indicator of long-term undernutrition and an improvement in height generally lasts longer than improvements in weight.

There has also been an impact in terms of reducing severe malaria, plus increased vaccination of tuberculosis, diphtheria, pertussis (whooping cough), tetanus and measles. The project does not seem to have reduced the most common symptoms of diseases (fever, coughs and diarrhoea) affecting children.



# Education

In the education sector, MVP interventions have led to improvements in school facilities, staffing and student/teacher ratios and school attendance. Despite this, there has not been much improvement in the learning outcomes of school children in the MV areas, which suggests a significant gap in the education system between children attending and the quality of their learning.

The qualitative studies highlight several contributory factors to this gap, including poor quality and maintenance of school buildings; perceptions by teachers that their posting to these remote areas is short-term; anecdotal evidence of poor-quality teaching and attendance; and little change in children’s motivations to attend school (and motivations to learn).



# Agriculture

In terms of agriculture, there has been an impact on agricultural production and reducing food insecurity. This can be explained through input increases (fertilisers, seeds, land, tractor rental and other animals/machinery for hire), as well as the land area dedicated to maize and beans increasing considerably in the MV areas.

As the qualitative studies show, some of this impact has been the result of prior and complementary initiatives in the area, such as the Presbyterian Agricultural Services, the Ministry of Food and Agriculture, Technoserve and the Association of Church Development Programmes. In particular is the shift from millet to maize production (which the MVP was able to build upon and intensify), where the shorter cultivation period for maize has allowed many farmers to grow a second winter crop for the first time (e.g. cowpeas).

# Cost-effectiveness of the Millennium Villages Project

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The ambition of the MVP was that, by doing everything together, there would be a synergistic effect that would provide greater value for money than would be possible through individual sector-based interventions. The unique nature of the MVP (in terms of the scope of its ambition and the complexity of the interventions) meant that no direct comparison for the overall project was available in the literature. Nevertheless, disaggregating costs and benefits by sector provides a good alternative – that is, if the synergistic effects of the project are significant, then we should expect higher value for money from such sector-based cost-effectiveness analyses (CEAs) compared with more typical single-sector interventions (in health, education, etc.).

The total expenditure on the MVP in Northern Ghana between 2012 and 2016 amounts to US\$15.3 million, when discounted to the year 2012 and accounting for the time when goods are used (not just purchased). Health and infrastructure were the largest sectors in terms of project spend, with management and overheads accounting for around a third of the total. The cost per capita was US\$360 in 2012 present value terms, or US\$88 per capita per annum.

Across the key impact areas of income, health and education, the MVP compares unfavourably with other projects in terms of the cost-effectiveness of service delivery. The returns to investment in education appear to be highest, although it is believed that similar results could have been achieved at significantly lower cost. For health outcomes, these could have been achieved at a much lower cost; and income gains through agricultural productivity are significant, while the contribution that will infrastructure made towards this rise in income is unclear. Nonetheless, it is possible that benefits will continue to arise in the future, and the lack of precise comparators means the difficulties of delivering such a project in Northern Ghana may be underestimated.



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Health and infrastructure were the largest sectors in terms of project spend, with management and overheads accounting for around a third of the total. The cost per capita was US\$360 in 2012 present value terms, or US\$80 per capita per annum.

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We have therefore undertaken further analysis and discussed at length the interpretation of the CEA. The management and overhead costs of MVP amount to 31% of all costs, and, if the project were to be replicated, it is possible that these costs could be significantly reduced (e.g. fewer international staff, greater use of local systems of delivery, etc.). Our sensitivity analysis shows that this would improve overall value for money but, even with a 50% cost saving on management costs, the achieved income-generating impact would only just be cost-effective, while health and education would not. While comparing costs to other projects or the GoG per capita spending, while MVP spending is not excessive, we show MVP fell far short of being cost-effective.

## Sustainability of the Millennium Villages Project

In the longer run, the MVP may of course produce welfare gains, and ultimately be viewed as cost-effective, yet early indications show that the MVP approach will be difficult to sustain by district institutions and at the community level. Also, there are signs that any gains made under the project are already being undermined (a few months after project closure).

District assemblies in Ghana are often cash-strapped because they are unable to generate revenue of their own and the funds they receive from central level are often three quarters in arrears. Yet the project has created (in effect) a resource-intensive, parallel structure (e.g. with funds not making use of district tender boards, payments directed to the accounts of individual district staff, etc.). District officials also cite the inadequacies of long-term strategic thinking, such as how to sustain the many 'free service' interventions of the MVP (e.g. free ambulance services, the supply of medicines, subsidised tractors, monthly allowances to district officials or top-up salaries to community health workers and community education workers). Undoubtedly, other programmes may pick up some of these, but much is uncertain at the time of project closure.

Early indications show that the MVP approach will be difficult to sustain by district institutions and at the community level.

*Some villagers found alternative uses for the mosquito nets provided*

## Conclusions and lessons

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The evaluation findings highlight broader challenges around the ability to achieve sustainable change through large-scale, multi-sectoral programmes - with lessons also for the current vogue of complex programmes aiming to achieve the SDGs.

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The CEA suggests that the project has not (so far) yielded sufficiently positive results; it seems to have fallen short of producing a synergistic effect, and what has been achieved could have been attained at a lower cost.

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While the high ambitions of the project are admirable, reducing poverty on this scale is very hard to achieve within the lifespan of a programme. It is perhaps unsurprising that the MVP has made such less-than-expected progress against the MDGs, as projects are rarely assessed against impact (or final outcome) indicators such as the MDGs.

Yet there have been some important gains that will benefit people in the area, with improvements in income and people's welfare and reductions in the prevalence of stunting and severe malaria, plus vaccinations against major diseases. In addition, there have been improvements in health and school facilities, with rising school attendance, agricultural production and food security.

The CEA suggests that the project has not (so far) yielded sufficiently positive results; it seems to have fallen short of producing a synergistic effect, and what has been achieved could have been attained at a lower cost. Of course, in the long run, the MVP may produce welfare gains. For example, health care service improvements during the MVP period may improve health later on; or other considerable investments in infrastructure (roads, health and school facilities) may have an impact on future outcomes.

## Conclusions and lessons (continued)

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Finally, there are a number of lessons for such interventions in the future.

1

While the MVP model recognises the need to address many interrelated challenges, attempting to address all at once appears not to have delivered significant results, nor synergistic effects. Instead, addressing specific sector-based problems (but taking account of the interconnections within the broader system) may still yield better and more cost-effective results.

2

Although many individual interventions and particularly the ‘quick wins’ have been scientifically tested (e.g. vaccinations, bed nets, fertiliser, etc.), there is a need for considerable experimentation and testing in context – i.e. working with the current political economy of what is possible by district and community institutions, as well as the local cultures and behaviours that change and adapt technologies and know-how.

3

Sustainability is a challenge, and there is a need for early strategic thinking beyond the project lifecycle, particularly for approaches like top-up allowances, community education workers and new health facilities (‘super-CHPS’), given their implications for government funding and delivery in the long term. In particular, expenditure in MVP has focused primarily on building infrastructure, supplies and staffing, with insufficient attention to the role of behaviour change in producing a long-lasting impact (such through better agricultural practices, approaches to nutrition, etc).

4

However laudable the aims to assist the poorest, the evaluation comes too late to inform a decade of MVP investments across 10 African countries. Given the significance of the policy and programming decisions around the MDGs, having rigorous evidence programmed in earlier would have helped to better inform investments in the MVP approach.



We want the resources invested in international development to have the greatest possible impact on people's lives.  
We provide the insight and ideas to ensure that they do.

This Executive Summary has been extracted from the Impact Evaluation of the SADA Millennium Villages Project in Northern Ghana Endline Report.  
The full report, including full references is available from  
<http://itad.com/knowledge-and-resources/MVEval>

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