



**Understanding Foundational Numeracy**  
**South Asian perspectives on iCAN, a new global tool**

**ASER**  
SOUTH ASIA



August 10, 2020

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Nigeria



Tanzania



Mexico



Nepal



Pakistan

Citizen-Led Assessment (CLA) approach innovated in India in 2005  
Adopted and adapted in other Global South contexts  
People's Action for Learning (PAL) Network formalised in 2015, now  
comprising members in 14 countries across 3 continents

# CLA approach is relevant for the Global South

## Core features of CLAs:

- Conducted in **households** to include all children irrespective of schooling status
- Implemented **orally and one-on-one** as many children cannot read
- Cover **foundational learning** content taught in early primary classes
- Administer **simple-to-use tools, processes** and produce **easy-to-understand data** to ensure wider engagement
- Ensure **collaboration with local stakeholders** to create awareness and fuel local action



# Global goal for education: SDG 4

- SDG 4 focuses on ensuring “inclusive and equitable quality education and lifelong learning opportunities for all.”
- Within Target 4.1, the first indicator (SDG 4.1.1) tracks the “proportion of children and young people achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex”

(a) in Grade 2 or 3

**Critical to measure learning early so that corrective measures can be implemented**

- Robust and regular data on learning outcomes are needed over time and across countries
- Limited relevance of existing data to track progress towards SDG 4.1.1 for grades 2 or 3

# ICAN - A comparable assessment for the Global South

The minimum proficiency level descriptor for numeracy under SDG 4.1.1 for class 2 or 3 requires students to demonstrate skills in number sense and computation, shape recognition and spatial orientation.

## Overview of domains and tasks in the ICAN assessment tool

50%

### NUMBER KNOWLEDGE

- Counting, comparing number of objects
- Number recognition
- Operations (without and with carry-over, borrow and remainder)
- Real world problems

50%

### GEOMETRY

- Position and direction
- Shapes and figures

### MEASUREMENT

- Length and capacity
- Time and calendar

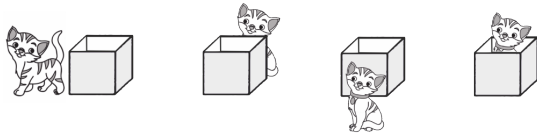
### DATA DISPLAY

- Retrieving simple information

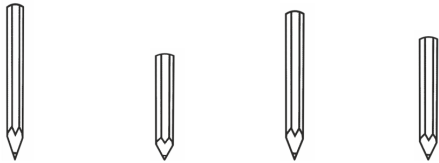
# Sample tasks from the ICAN assessment tool

## Space, shape and measurement tasks

Q1 In this picture, which cat is inside the box?



Q3 In this picture, which is the shortest pencil?

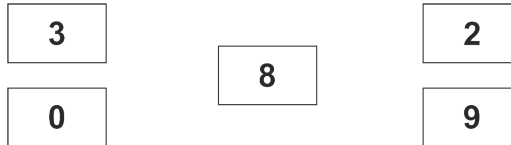


Q11 Which of these is a straight line?



## Number knowledge tasks (recognition, operation and word problems)

Q15 Recognize numbers.



At least 4 out of 5 numbers must be correct

Solve the following questions.

Q17

$$\begin{array}{r} 46 \\ - 21 \\ \hline \\ \hline \end{array}$$

Q22

$$\begin{array}{r} 78 \\ - 29 \\ \hline \\ \hline \end{array}$$

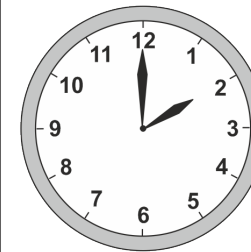
Q25 Listen to the question carefully, solve and answer.

There were 43 children in the park. Out of these, 25 of them have gone home. How many children are left in the park now?

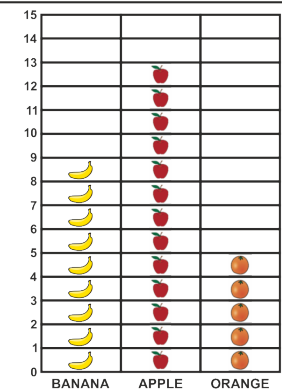
## Applied tasks

(Telling time, telling day and date from a calendar, data display)

Q7 What is the time in this clock?



Look at the chart given below carefully.



Q5 How many apples are there?

Q6 How many more bananas are there than oranges?

Look at the calendar given below.

MARCH 2019						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Q9 What is the day on 5<sup>th</sup> March?

Q10 What is the date on the second Monday of March?

ICAN assessment tool is available in 11 languages on the PAL Network website

# ICAN 2019: Large-scale household-based implementation

- Proof of concept - feasibility of using common tools across different country contexts
- ICAN 2019 retained all core features of the CLA architecture
- Translation, training, data collection procedures based on PAL Network's Data Quality Standards Framework (DQSF) in all participating countries
- Implementation by PAL member organisations in collaboration with local partners



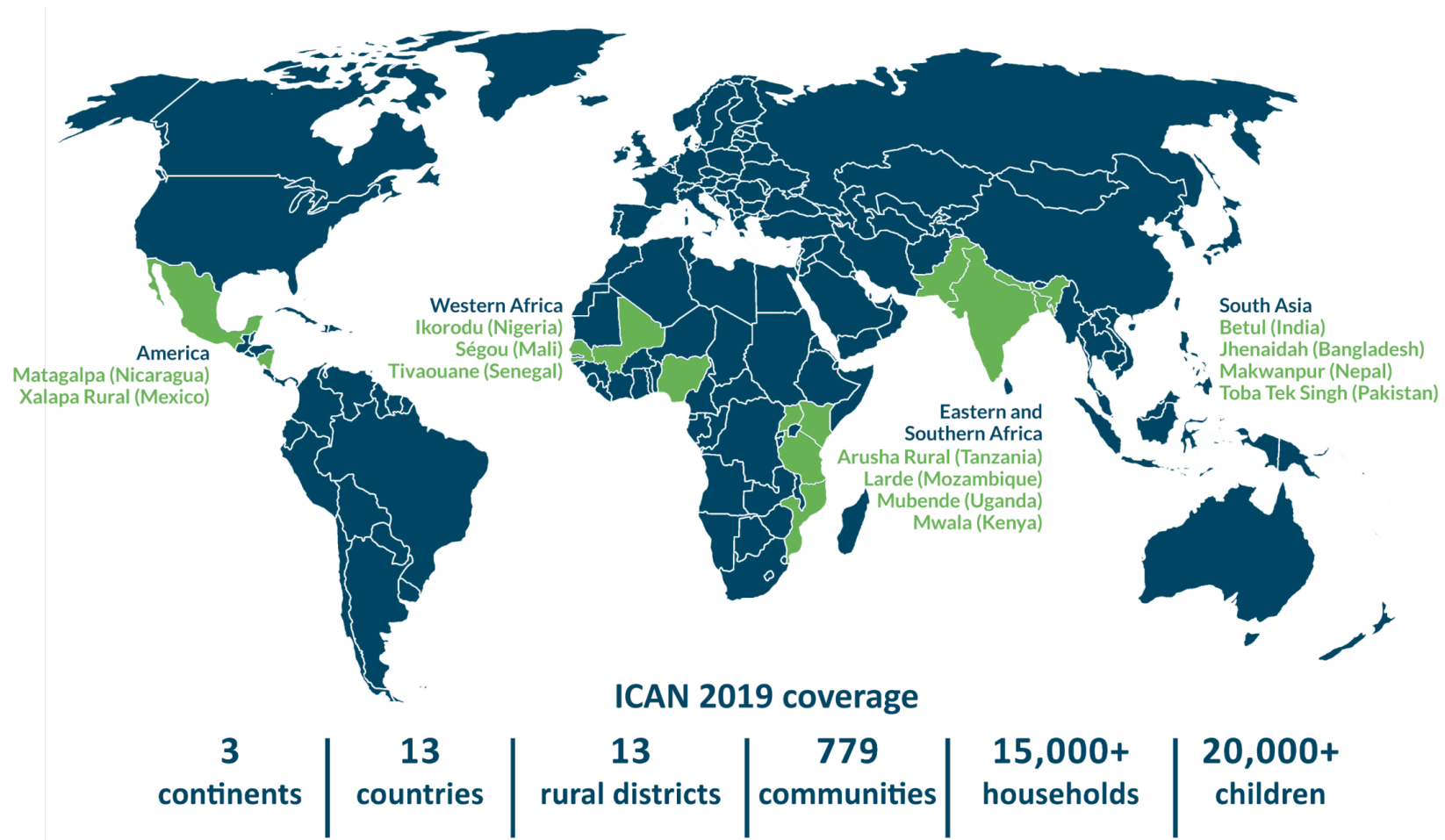
**Conducted in 13 countries**  
**60 randomly sampled rural communities in**  
**1 district per country**  
**District not an outlier in terms of learning**  
**outcomes**



**Administered in randomly sampled households**  
**to children in the age-group of 5-16 years**  
**Each child assessed orally, one-on-one**



# ICAN 2019: sampled districts and reach



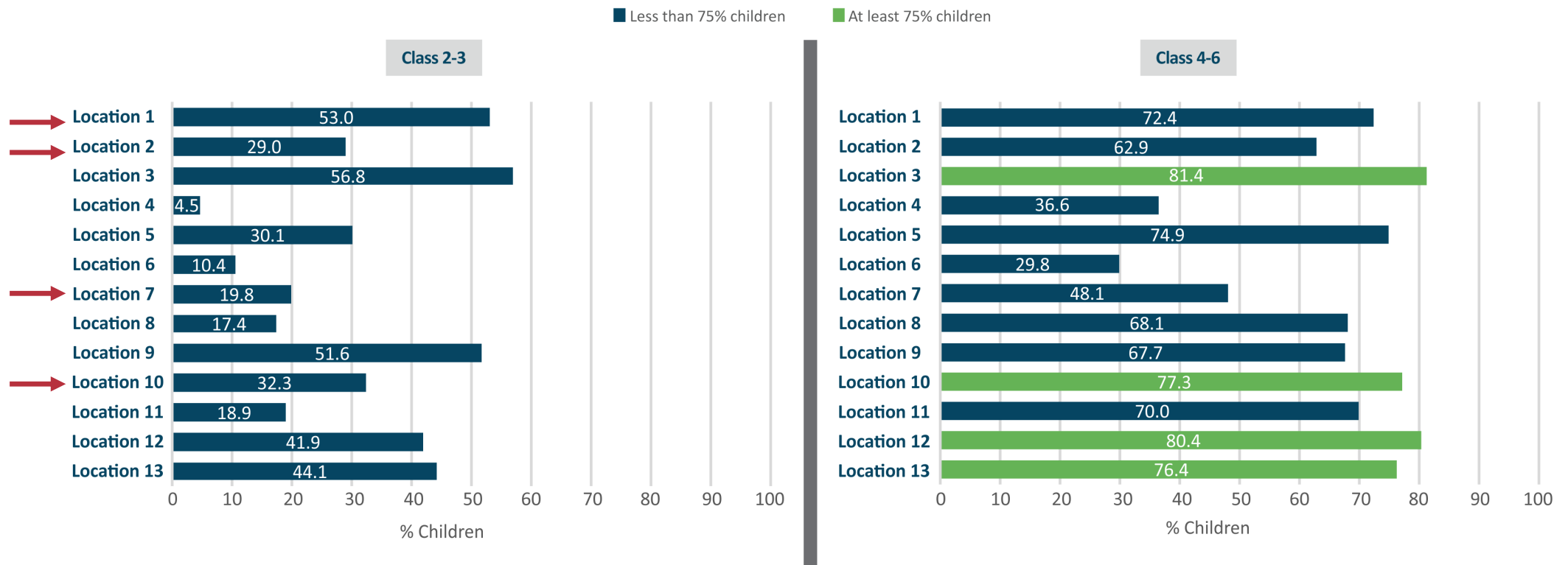
# Illustrative findings from ICAN 2019

- Purpose of this round of implementation was to test feasibility across country contexts and to **showcase the kinds of comparisons that the use of ICAN on scale facilitates**
- In the ICAN 2019 Report, district names are anonymised as Location 1, Location 2, and so on while showing comparative analysis



# No location has at least 75% children in class 2-3 who can do numeracy tasks mapped to SDG 4.1.1 (a) criteria

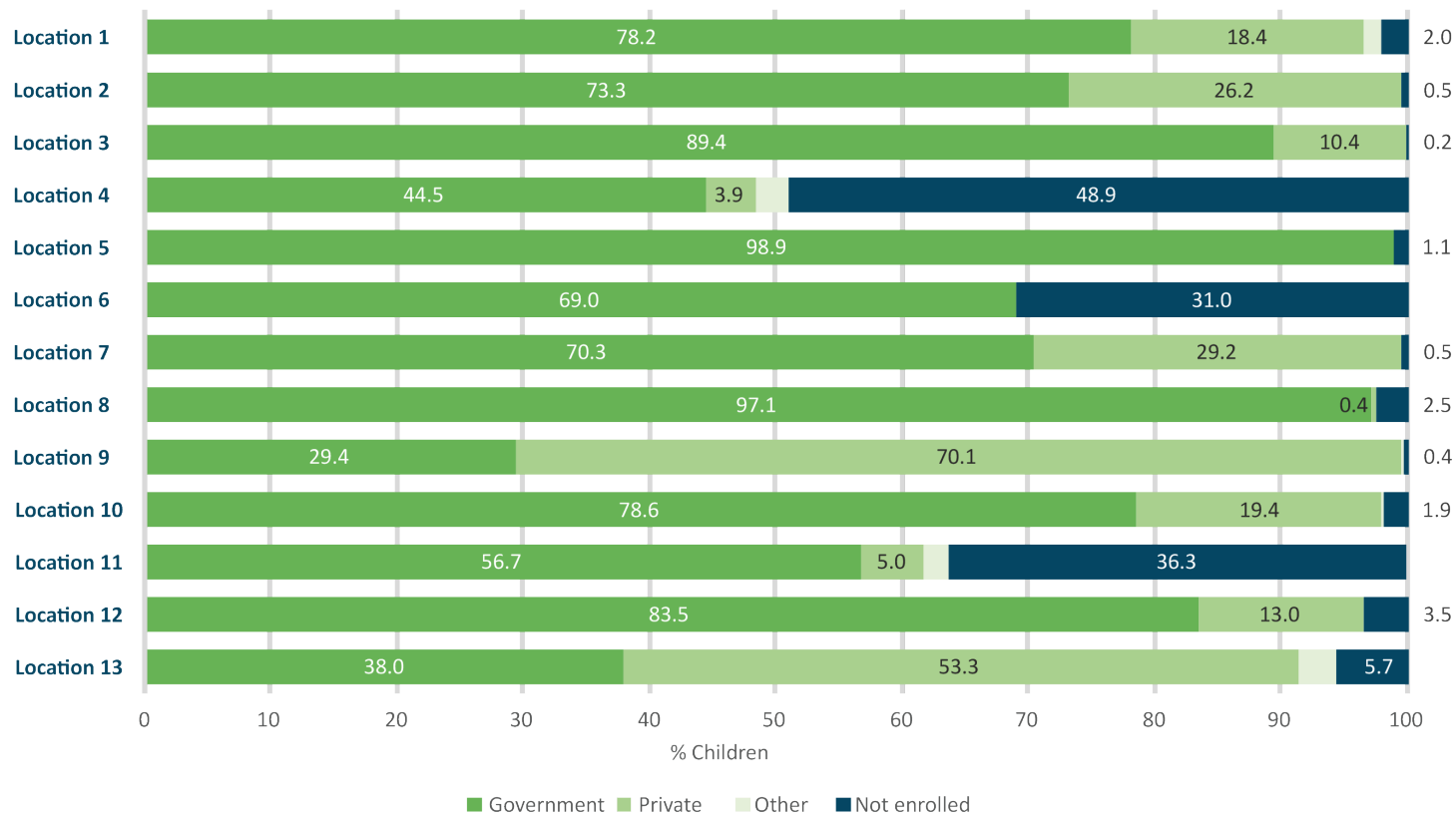
% Children who can do a set of foundational numeracy tasks aligned to SDG 4.1.1 (a)



Even in class 4-6, many children are still unable to do numeracy tasks expected in class 2 or 3

# Even 20 years after the MDGs, many primary school-age children are out of school

% Children age 6-10 enrolled in different types of schools and children not enrolled

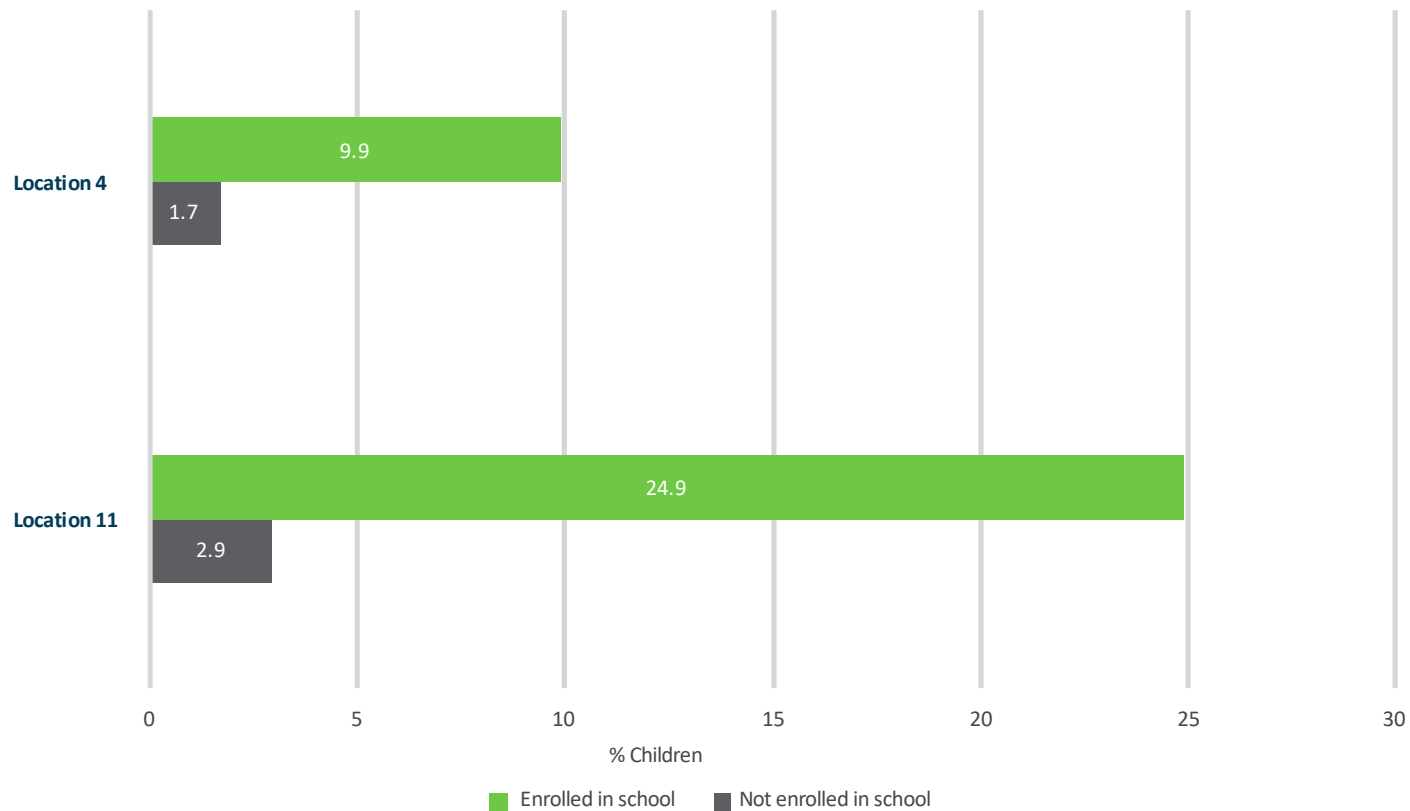


Because ICAN 2019 was a household survey, it generated information on enrolment patterns for children age 5-16

- In 3/13 locations, more than 3 in every 10 children age 6-10 are out of school
- There is enormous variation in the types of schools enrolled children attend

# Out of school children must be included in discussions on learning

% Children age 8-10 years who can do a set of foundational numeracy tasks aligned to SDG 4.1.1 (a), by enrolment status



SDG 4 is targeted to ALL children.

Because ICAN 2019 was administered in households, it assessed all children in the target age group of 5-16 years, irrespective of enrolment status.

Children age 8-10 years are usually enrolled in classes 3 to 5. There are large disparities among performance of children enrolled in school and those not enrolled.

# As the clock ticks to 2030 . . .


We need less top-down and more granular measurements of foundational learning that can lead to rapid corrective action

## ICAN is:

- Open source
- Most tasks are aligned to grade 3 level or lower of the UNESCO Global Proficiency Framework
- Suitable for use in both household and school settings
- Simple and quick to administer and understand, therefore easy to scale




# ICAN tools currently available in 4 South Asia languages

 **PAL NETWORK**  
People's Action for Learning


**ICAN**  
International Common  
Assessment of Numeracy

**আইক্যান**  
মৌলিক গাণিতিক-সংখ্যার  
আন্তর্জাতিক সর্বজনীন মূল্যায়ন

টেকসই উন্নয়ন লক্ষ্য ৪.১.১ (ক)- এর সাথে সামঞ্জস্য রেখে  
এক উন্নয়নশীল দেশের অর্থনৈতিক উন্নয়নকে ত্বরিত করে  
অংশগ্রহণের মূল্যায়ন পদ্ধতি




Bangla

 **PAL NETWORK**  
People's Action for Learning


**ICAN**  
International Common  
Assessment of Numeracy

इन्टरनेशनल कॉमन  
असेसमेंट ऑफ न्यूमेरेसी  
(आईकैन)

An open-source assessment developed through  
a south-south collaboration and aligned to  
SDG 4.1.1 (a)




Hindi

 **PAL NETWORK**  
People's Action for Learning


**ICAN**  
International Common  
Assessment of Numeracy

इन्टरनेशनल कॉमन  
असेसमेंट ऑफ न्यूमेरेसी  
(आईकैन)

An open-source assessment developed through  
a south-south collaboration and aligned to  
SDG 4.1.1 (a)




Nepali

 **PAL NETWORK**  
People's Action for Learning

**ICAN**  
INTERNATIONAL COMMON  
ASSESSMENT OF NUMERACY

آئی-سی-ای-این  
مشترکہ بین الاقوامی حساب دانی کا جائزہ  
ایک اوپن سورس جائزہ جو خوب-خوب تعاون سے تیار کیا گیا  
اور پائیدار ترقیاتی ہدف 4.1.1 الف کے ساتھ منسلک ہے۔



Urdu

ICAN tools are currently available in Bangla, Hindi, Nepali and Urdu.

# Building a South Asia regional assessment







**PAL NETWORK**  
People's Action for Learning

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