BEHAVIORAL INCENTIVES, PROCESS INNOVATION, AND TRACK & TRACE IN BOOK DISTRIBUTION

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CIES
Environmental impact can be mitigated by reducing loss of books in the supply chain, and preparing for climate change
Agenda

• Where is there book loss and damage?
  ▪ Contextual Studies
  ▪ Digital Track & Trace

• Solutions
  ▪ Better logistics management
  ▪ Accountability & Transparency
  ▪ Behavior Change/Incentives
Afghan Children Read

• USAID Afghan Children Read project
• In 2016, workshops with the Ministry of Education helped understand some of the book chain issues
• In 2017-2018, deployed a Track & Trace system used for ~500,000 books
• In 2018-2020, deployed an inventory system used for >1 million books, and transitioning to Ministry
Solution: Track & Trace Systems

- Tracking systems (aka Track & Trace) are a solution to provide real-time data to understand book distribution patterns.
- Creative partnered with GraphLI, to customize a digital asset tracking product for development needs – Creative Track & Trace.

Blends mobile-app based and SMS-interaction technologies to facilitate data collection that provides confirmed book deliveries, and specific, actionable, and automatic report and alerts in real time.
Creative Track & Trace

Blends mobile-app based and SMS-interaction technologies to facilitate data collection that provides confirmed book deliveries, and specific, actionable, and automatic report and alerts in real time.

- Online dashboard
- Mobile Application with record look up and offline functionality
- Barcode scanner, signature pad, image storage
- SMS-enabled conversational multi-lingual data collection
- SMS notifications to schools
- Actionable Email alerts to staff
- Daily Summary reports to staff
- Blockchain enabled, smart contract ready
Solution: Inventory System (OTIMS)

MoE Reports:
- By Vender
- By Province
- By District
- By School
  (Grade & title Cross-cutting)

PED Reports:
- By District
- By School
  (Grade & title Cross-cutting)

DED Reports:
- By School
  (Grade & title Cross-cutting)

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Books in Mozambique

Heavy rains normally damage books and delay book availability.

Climate Change is exacerbating this.

Cyclone Idai (March 2019)
Cyclone Kenneth (April 2019)
Livros a Tempo

- World Bank REACH Grant
- Study book distribution from districts down to schools in Northern Mozambique in 2019
- Focused on 12 districts in Nampula and Zambezia
- Surveys at the district directorate of education, ZIP, and school levels; and qualitative interviews at the district offices of those responsible for managing the delivery system.
Livros a Tempo study results

### Books from District to ZIPS

- **Nampula**
  - District Delivers
  - ZIP Fetched with Car
  - ZIP Fetched with Motorcycle
  - ZIP Fetched with Truck
  - ZIP Fetched with students

- **Zambezia**

### Books from ZIPS to Schools

- **Nampula**
  - ZIP Delivers
  - District Delivers Directly
  - School Fetched with Bicycle
  - School Fetched with Motorcycle
  - School Fetched with Truck
  - School Fetched with Chapa

- **Zambezia**

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Livros a Tempo study results
# Livros a Tempo study results

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<th>No.</th>
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<td>1</td>
<td>Book delivery is based on vague guidelines and not official policies. Many people in the book delivery chain are not clear on what the precise responsibilities of each entity in the book delivery chain are.</td>
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<td>2</td>
<td>MINEDH believes that the districts have book delivery budgets, but the districts do not think so. Some districts believe that book delivery budgets have been eliminated in the past 5 years. Also, the budgeting system does not allow districts to budget for book delivery explicitly.</td>
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<td>3</td>
<td>Effective and cost-effective transportation for textbooks is difficult to arrange. Book delivery needs many vehicles over a very short period. Besides shortage of fuel and transportation payment budget, there is not enough capacity for book delivery logistics.</td>
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<td>4</td>
<td>Communication between levels of the book delivery chain can break down with negative consequences. Books can be delayed, and the ZIP does not feel like they were given adequate notice.</td>
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<tr>
<td>5</td>
<td>Waterproof book storage is often insufficient at the ZIP level, which slows the entire process. Book storage at the district level is often ad hoc.</td>
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<td>6</td>
<td>Receipts are all on paper, so changed quantities don’t make it up the chain. Also, receipts sometimes are not required.</td>
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<td>7</td>
<td>Remote districts and remote schools within districts are underserved, likely receiving insufficient books or books late.</td>
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<td>8</td>
<td>Regular inventories are supposed to be done at the schools but in practice are not carried out.</td>
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<tr>
<td>9</td>
<td>Enrollment projections and expected book demand are perceived not to make it up to the province planning. There is no clear timeline on requisitions.</td>
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<tr>
<td>10</td>
<td>Books degrade faster at schools than the replenishment rate.</td>
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Solution co-design

Contextual Study Inputs
- Insight Statements
- Design Statements, How Might We

Prioritizing Problems
- Card Sort of Insight Statements
- Group Brainstorm

Solutions Design
- RBF Training, RBF Template
- Group Brainstorm, Gallery Walk

Refining Solutions
- Voting
- Group Refinement
Solution: Incentives for storage

Awards to ZIP coordinators that build new waterproof storage for books or make significant repairs to a damaged book warehouse by before the rainy season begins.
Solution: Incentives for distribution

Awards to district directors of districts that have the greatest number of ZIPs constructing or repairing storage and are able to timely deliver books to ZIPs and schools.
THANK YOU

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