LASER PULSE

Long-term Assistance and Services for Research (LASER) Partners for University-Led Solutions Engine (PULSE)

APPLICATION OF COMPREHENSIVE ISSUE ANALYSIS TO INFORM DEVELOPMENT RESEARCH IN EAST AFRICA, PART 1: BASIC EDUCATION (BE), MATERNAL/CHILD HEALTHCARE (MCH)

SUPPLEMENT TO AGREEMENT NO. AID-7200AA18CA00009

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Description of this Document
Development researchers generally want to identify, examine, and improve the most important elements of the system in which they work (e.g., maternal/child healthcare) that are not yet adequately addressed. Within any given system, however, it is quite common to observe multiple unmet conditions that limit problem resolution such that working on one (or even a few) in order to “make progress” is rarely sufficient to overcome a systemic issue. Additionally, by the time development practitioners are able to address other conditions, the state of those already dealt with may have changed. The key is to pursue solutions that address the main unmet conditions simultaneously, as a system, by thinking ahead about the connection between potential solution paths and outcomes that are most likely to lead to on-the-ground impact.

With this in mind, researchers at Purdue University have developed a method (initially referred to as Comprehensive Issue Analysis), rooted in innovation science, to assist in the identification of the most important and interrelated suite of factors that define a specific grand challenge problem. LASER PULSE employs this approach to frame and analyze the scope of issues that are related to various region-specific development priorities. For each priority area, a view of the “conditions for success” that are typically required to address the specific category that poses a challenge is developed. Gathered from an extensive literature review and a deep mining of internet resources, these conditions build upon patterns understood in innovation science. With input from advisors knowledgeable on the current state of conditions in the region of focus, as well as perspectives gained from stakeholders engaged in LASER PULSE’s R4D workshop sessions, these generalized conditions for success are shortlisted to specifically call attention to those that are required in the specific context and not adequately addressed. The results of this input gathering process then help frame development research themes and focal areas that form the basis of a Request for Applications (RFA) for funding of LASER research grants that the USAID-funded LASER PULSE consortium will subsequently award. RFAs will be generated for selected development sectors in various countries of interest to USAID; the first RFA will be for East Africa.

Note that this document represents the first iteration of this innovation science method; refinements to the process are ongoing and have already resulted in certain revisions. For example, the overall name of the approach is now referred to as “Comprehensive Success Factor Analysis” to more clearly convey its intent. The tangible artifacts of the process itself have also undergone significant revision, such that the tools for application included in this document have been superseded by newer versions (e.g., success
factor trees → success factor checklists; system template → system synthesis template). As such, this
document represents – and thus should be viewed as – an early stage in the evolution of an overall
process, and its contents should therefore be properly considered as archived. Future documents in the
present technical report series entitled LASER PULSE R4D Innovation Science Frameworks and Tools
will be more accessible and contain usable tools for those interested in applying them.

Content Type Definitions

Guide for Facilitators
A document that provides an overview of the theory that supports specific Innovation Science methods
used for a particular analysis, as well as step by step instructions to facilitate a related working session,
inclusive of activity descriptions, activity timing, a listing of required supplies and materials to run the
session, input capture templates, and responses to frequently asked questions (FAQs).

Success Factor Tree
An extensive outline of the key factors that are likely needed to achieve commonly desirable outcomes
when addressing a specific grand challenge problem.

Stakeholder Map
A visual representation of the stakeholder categories/roles that are likely to play a vital role in addressing
a specific grand challenge problem.

Template
A custom-designed printable framework intended to encourage users to consider specific questions and
record related information when performing work in support of specific Innovation Science analyses.

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Disclaimer
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conjunction with the USAID-funded LASER PULSE Program (led by Purdue University). The author’s
views in this publication do not necessarily reflect the views of USAID of the United States Government.
A. Security/Safety

Measures to ensure safety within the basic education system exist

- Equal safety, security and opportunity is provided to all residents (i.e. no discrimination based on gender, race, religion, disability, income level, age, etc.)
  - Corruption, if present, can be circumvented
  - The basic education delivered meets certain quality standards
    - Quality standards and thresholds for basic education are established
    - Quality standards are established for curriculum
    - Programs are designed and implemented based on quality standards established
    - Study materials to complement programs uphold quality standards required
    - Methods of assessing student competence are formalized
  - Quality requirements are established for workforce

- The school is accessible to those who need to use it
  - The path to school is safe and easy to traverse
  - The path to school is reliable and not regularly impacted by weather
  - Any transport system uses safety measures to protect student/teacher/staff well-being
  - The means of transport is consistent and reliable

- The school environment is safe for all participants
  - Schools provide safe work environment
  - School staff has proper ethics training
  - Safe and secure mechanisms exist to report violations
  - Schools are a safe learning environment for students
  - Acceptable disciplinary measures are in place for taking action against misconduct
Basic Education Success Factor Tree

*Acceptable disciplinary measures are in place to prevent bullying
*Acceptable disciplinary measures are in place to prevent misconduct on the part of teachers
*Acceptable disciplinary measures are in place to prevent misconduct on the part of other stakeholders involved

The ability of a school to provide a basic education is not impacted by competition from surrounding entities
Surrounding schools do not impact ability of school to provide resources to students
Surrounding entities do not harm natural resources used by school

Basic education is recognized by higher institutes of education so students can advance

B. Policy

The governing bodies of the country have established the importance of equitable access to basic education through structured policies

Policies are inclusive of all irrespective of gender, race, religion, disability, income level, age, etc.
Policy makers represent the people for whom they are making policy

Policies framed are economically operational
Policies framed are functionally operational
Policies are protected from misuse
Policies are regularly updated

Structured policies have been developed and implemented to create availability/access to basic education
Policies clearly define "basic education"
Policies establish national goals for provision of basic education
Policies on various aspects related to basic education exist
Policies on provision of basic education exist
Policies on raising awareness and sensitizing population about basic education exist
Basic Education
Success Factor Tree

14 Policies on provision of education infrastructure exist
15 Policies on teacher training and development exist
16 Policies on curriculum for basic education exist
17 Policies on education delivery system exist
18 *Policies on improvement of techniques and technology used in education exist
19 *Policies on assessment methods utilized exist
20 Policies on making education affordable exist
21 Policies on quality of education delivered exist
*Policies on education being universally available to all students exist (e.g. different socio-economic backgrounds, religions, students that have different abilities and needs, age)
22 Policies provide means to measure quality of education provided by different institutions
23 Policies allow schools to meet operational needs if they are otherwise not being met
Policies protect the rights of those involved in the education system
25 Policies protect student rights in schools
26 Policies protect staff rights in schools
28 Policies promote partnerships
29 Policies promote private sector engagement to create access to primary education
30 Policies promote delivery of education
31 Policies promote partnerships with other organizations within the country (e.g. Non-profit organizations)
32 Policies allow international partnerships (e.g. Funding agencies, schools)
33 Policies promote partnerships between schools
34 *Policies are scalable and flexible
*Policies are flexible to allow and incorporate development in the education sector
*Policies are flexible to allow regional variations in teaching mediums and techniques

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C. Government

Country has received Government commitment to support the provision of basic education to all children

- Government is committed to creating equitable access to quality education
  - Government understands and supports the need for access to basic education
- Government is committed to creating equitable access to quality education
  - Government supports development of education technology and teaching methods
  - Government and policy makers have an ambitious, hopeful, committed attitude
  - Government is open to utilizing opportunities for private sector engagement to achieve goals related to basic education
- Government has means to assess quality of basic education provided
  - Body responsible for evaluation of outcomes of increasing engagement of population in basic education exists
  - Body responsible for defining/designing curriculum for basic education exists
    - Education researchers are engaged in curriculum development
  - Entities responsible for developing study material (e.g. Textbooks, videos, activities) exist
  - Body responsible for distribution of study materials exist
  - Body responsible for regulation of national examinations exists
  - Body responsible to measure outcomes of the basic education system exists
  - Body responsible for training and assessing teachers exists

Policies and laws on basic education are adhered to across all political levels (National, Regional, Local)

- All political sectors are made aware of policies related to basic education
  - Relevant representation from all political levels are allowed to participate in the regulation and policy framing
    - Representation includes members from the education sector (e.g. education administrators, education researchers)
  - Government is supportive and influential in driving awareness and implementation of policies
Different government bodies at national, regional and local levels are in agreement with policies and work towards its implementation.

Checks are in place to make sure policies and regulations are not misused.

- Public (government) as well as private (non-government) schools are required to uphold quality.
- Local and regional education system operators are comfortable working with each other.

Local leaders have the ability to influence and promote education.

- Local leaders believe they can benefit population by facilitating awareness of education.
- Local leaders believe they can benefit population by facilitating access to education.
- Leadership believes that improving access to quality education can have a long-term impact on the community, state, and the nation.
- Local leaders are committed to supporting basic education needs of the region.
- Local leaders are cooperative with government.
- Local leaders are cooperative with body governing the school.
- Leaders are motivated to supporting education system requirements for development.

Leadership structure exists within the school.

- Leaders are committed to providing basic education based on policies and curriculum to students.
- Leaders are cooperative with school funding agencies.
- Support structure for school needs is in place.
- Organization representing student's needs is functioning.
- Organization representing staff needs is functioning.
- Government does not interfere with schools ability to meet needs.
- Leaders are cooperative with support groups within the school, community, state and nation.
D. Infrastructure

1. Infrastructure to support effective delivery of education is in place or can be developed in an equitable manner

   Effective channels of communication exist or can be developed to spread awareness among populations (e.g., mass media channels like radio, television, interpersonal channels like nutritionist, local sellers, markets, institutional channels like schools, government)

   *Acceptable and robust communication channels are identified or developed

   Existing institutions and/or private sector channels are leveraged to spread awareness among the masses (e.g., trusted private-sector entities that are popular among communities)

   *Channels to spread awareness that have high impact and are reliable are identified

   Drivers of awareness acknowledge the need for awareness among the population about basic health and nutrition

   Channel drivers formalize intent to raise awareness about nutrition and food security by setting outcome-based objectives and developing strategies

   Channels to spread awareness are secure and stable

   Channels to spread awareness are supported by sufficient resources

   Channels to spread awareness are equipped with material resources

   *Channels to spread awareness are equipped with technological resources

   Channels to spread awareness are equipped with human resources

   Channels to spread awareness are financially secure

   Channels to spread awareness operate legally in compliance with existing laws and regulations

   Channel drivers are trusted by the government and other stakeholders

   *Channel drivers and the communication channels utilized are trusted by the population

   Communication systems utilized are persistent and secure for long-term purposes

   Involved stakeholders trust communication channels used

   *Different and multiple channels of communication are used to raise awareness among different target groups
Basic Education
Success Factor Tree

20. A variety of effective channels of communication exist
21. Barriers preventing community level reach are overcome
   *Viable private sector channels are considered and employed to overcome barriers
22. Communication channels and systems are resilient to environmental and political change
23. Awareness can be spread in a socially acceptable way
24. Awareness can be raised among vulnerable/high risk target populations
   *Infrastructure exists to facilitate communication between different stakeholders
25. A curriculum for basic education is established
   Basic education curriculum forms the foundation and aligns with curriculum of higher grade levels
   Curriculum is updateable
   Curriculum is appropriate in terms of difficulty level for target student age range
   Curriculum enables individual to achieve academic, professional, and technical needs and national, social, and economic
   *Curriculum ensures the acquisition of appropriate levels of literacy
   *Curriculum ensures the acquisition of appropriate levels of numeracy and numerical manipulations
   *Curriculum ensures the acquisition of appropriate levels of communication
   *Curriculum ensures the acquisition of appropriate levels of life skills, as well as the ethical, moral and civic
   *Curriculum enables creativity, practicality, and productivity
   *Curriculum supports a culture of democracy, tolerance, social, and environmental awareness
   *Curriculum is is based on pedagogies that stimulate intellectual and practical qualities of all learners
26. Infrastructure facilities for education in a region exist or can be developed
   Private schools or institutions have required licenses to operate as per regulations
   Infrastructure (such as schools and institutions) for delivery of basic education is secure and reliable
   The infrastructural system is environmentally friendly
   The infrastructure is accommodating and promotes equality/equal access to all students (e.g. students that come from
different backgrounds, students that may need special accommodations)
   Regional community leaders are supportive of infrastructure development
   Infrastructure provides a conducive learning environment (e.g. classrooms, labs, libraries, computer centres, potable water,
electricity, toilets, furniture)
   The education delivery system is technically scalable
   Infrastructural needs properly accommodate students (no overcrowding or classroom shortage)
   Infrastructure facilities include functional sanitation facilities
   Infrastructure exists to deliver education to non-traditional groups (e.g., youth/young adults)
Basic Education
Success Factor Tree

50 Infrastructure developers have access to resources to enable development

51 *An effective education delivery system can be designed within the constraints of available resources

52 Appropriately skilled labor can be sourced for construction, operation and maintenance of schools

53 Acceptable working conditions can be created in the system

54 Locally sourced labor can be employed

55 Facilities to maintain operation of schools exists or can be developed

56 A maintenance approach can be designed employing local talent and resources

57 Maintenance procedures can be performed via local talent

58 Effective maintenance practices can be achieved

59 Infrastructure to collect and distribute study materials (e.g. textbooks, stationery) can be identified or setup

60 Local businesses can be identified to source study supplies

61 Distribution of school supplies can be done through local traders

62 Boarding school infrastructure meets all needs of students

63 Dormitories exist and have appropriate accommodations (i.e. beds, workspace, light, sanitation facilities)

64 Clinic infrastructure is equipped with supplies to manage needs at school

65 Kitchen infrastructure is operational and meets feeding capacity

66 Religious facilities are available where appropriate

67 Water infrastructure provides safe, clean water that does not cause disease

68 Recreational infrastructure is available and maintained

69 Housing facilities with appropriate accommodations are available to staff

70 Infrastructure exists to facilitate travel to school

71 Roads connect communities to schools

72 The path to school is safe and easy to traverse

73 *Obstructions to the safe passage of commuters to school can be overcome

74 Transportation modes exist to transport students to school everyday

75 The mode of transport is safe

76 The mode of transport is trusted by families/communities

77 The mode of transport is efficient

78 The mode of transport is reliable

79 Alternative means to deliver education are sought where transportation is not feasible (e.g. online education, home school, mobile solar computer classroom)

80 Home infrastructure accommodates for school tasks that need to be completed at home

81 Infrastructure required by other supplementary systems to the education system exist or can be developed
Basic Education
Success Factor Tree

Infrastructure to educate/train workforce (e.g. extension programs) for various positions within the education system exist or can be developed
Infrastructure for water and sanitation systems exist or can be developed
Infrastructure required for power generation and distribution to education system exists or can be developed
Infrastructure to enable research and improvement of technology and techniques exists or can be developed

E. Equipment/ Supplies

1. Country has or can create access to enabling resources wherever required
   Content used to spread awareness about basic education is effective
   * Content is based on formative research and has been proven to be effective
   * Content is culturally appropriate and aligns with values of target community
   * Content motivates population to engage in available education system to avail basic education
   Content is specific to context and target audience
   * Variations in literacy are surmountable
   * Content takes is sensitive to variations in literacy
   * Majority of the target audience finds content easy to understand (e.g. Use of more pictorial representations, avoid difficult words or phrases)
   * Content can sensitize population about basic education in order that communities fully participate in their implementation

2. Physical materials for learning are available (i.e. textbooks, paper, pencils, other supplies)
   Physical materials can be protected from the environment
   Physical materials can be maintained
   Materials are equitably distributed or shared among students

3. Education infrastructure includes teaching equipment (e.g. Blackboards, chalk, projectors)
   Teaching equipment can be protected from the environment
Basic Education
Success Factor Tree

17 Teaching equipment can be maintained
18 Equipment is equitably distributed or shared among teachers
19 School has required equipment to meet nutritional needs of students while they are at school
20 Consumable resources are available for producing/cooking/consuming food
21 Non-consumable resources are available for producing/cooking/consuming food
22 Resources are available to properly clean non-consumable resources
23 Resources are available to properly maintain non-consumable resources

F. Workforce/ talent

Workforce/ talent to support effective delivery of education is in place
1 Positions in the workforce are equitably available to all who meet position requirements
2 Appropriately skilled workforce can be identified to take on different roles in the education delivery system
3 Skilled individuals are motivated to participate in education delivery system
4 *Tangible and intangible incentives offered to participants in the education delivery system is attractive (e.g. Attractive salaries, respectable job)
5 *Jobs in education sector offer good working conditions and attractive salaries/incentives to retain workforce (e.g. Teachers, administrative staff, support staff)
6 *Schools provide fulfilling work opportunity
7 *Teachers are required to have certain level of education
8 *Teachers are trained to manage students partaking in the education system in a respectful and non-discriminative manner
9 *Teachers are trained to manage young children
10 *Teachers are trained to manage young adults (youth)
Basic Education
Success Factor Tree

12  *Teachers are trained to manage a class with students from a mixed age group
13  *Teachers are trained to manage students with varying learning capacities
14  *Teachers are trained to manage students with varying abilities
15  *Teachers are trained to handle difficult or unique situations that may arise in school
Teachers are trained in appropriate communication
Teachers are aware of proper channels to handle/report difficult situations

Teachers/administration and staff are provided with clear guidelines for their positions
*Teachers are required to be regular to work
School administration and leadership are required to possess a certain qualification
School/ institutional support staff are required to be qualified for their respective positions
Mechanisms exist to enforce terms of work agreements
*Stakeholders involved are informed about feedback mechanisms to improve the existing system

G. Capital

Economic barriers in providing quality basic education and in receiving basic education can be overcome
Economic barriers with regard to creating awareness of basic education can be overcome
Sufficient resources are available for start up of communication channels
Existing communication channels are supported by sufficient resources
Channels are financially secure
A structured benefit system is in place where required
*A system to obtain return on investment is developed

Economic barriers with regard to creating availability of basic education can be overcome
Sources are available to sponsor system start-up
Basic Education
Success Factor Tree

Government allocates funds for education sector
Viable opportunities for industry engagement are utilized
Opportunities to obtain external monetary aid are utilized (e.g. USAID, JICA, GIZ)
Options are available to gain/augment government financial support
*The education delivery system is economically scalable
Possibility of corruption can be circumvented
All entities in the basic education system that utilize funds are held accountable for it
All entities that distribute funds ensure they arrive where they are allocated
Mechanisms exist to enforce proper money distribution
Opportunities to engage non-profit resources are effectively utilized
Non-profit entities that are willing to bridge any gaps to enable long term delivery of basic education are utilized (e.g. providing volunteers to teach, providing online learning materials and resources, contract teachers)
*A business model can be developed that accounts for variations in community purchasing power
The cost to employ skilled workforce for delivery of basic education can be supported by the system business
The cost of utilizing technology for education can be supported by the system business model
The cost to develop/ implement educational content and tools can be supported by the system business model
The cost to produce scholastic material for students (e.g. Notebooks, stationery, textbooks) can be supported by the business model
The cost to construct and maintain education infrastructure can be supported by the business model
Economic barriers with regard to creating accessibility to basic education can be overcome
*The education delivery system is economically sustainable
Technology is used effectively to reduce costs to deliver education
*System construction costs are self-sustained and/or reliably supported
*System operating costs are self-sustained and/or reliably supported
*System maintenance costs are self-sustained and/or reliably supported
*Incentives to maintain student involvement are provided (e.g. Food)
Incentives to maintain teacher involvement are provided (e.g. Food, healthcare benefits, contract)
*Education delivery system is free from any kind of monopolizing entity
*Opportunities of sourcing private sector capital are utilized where/when needed
Viable credit market can be developed and/or accessed
Economic barriers with regard to operation of basic education system can be overcome
Reliable funding mechanism exists to pay employees
A structured benefit system is in place where required

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Funding mechanism in place to sustain food production/purchasing

H. Practices/ Mechanisms

1. Practices/ mechanisms to support effective delivery of education is in place
   - Hiring practices are supported by factors that lead to student success (i.e. understanding of content and teaching practices, gender equality among teachers, etc)
   - School schedule accommodates children's ability to attend school
     - Schedule is consistent
     - Channels of communication are available to communicate changes
     - Schedule is conducive with parent/guardian schedule
   - Appropriate teaching techniques are employed for effective knowledge transfer
     - Knowledge is imparted using different techniques to overcome disparities in learning abilities of children
       - Teaching methods are interactive
       - Teaching is aimed at improving students' competence in reading, writing and basic mathematics
       - Teaching methods include vocational and practical methods
       - Teachers have the necessary human resources and support to effectively perform their duties
       - Teaching methods accommodate access challenges of youth/young adults
       - Systems to train and certify teachers exist or can be developed
       - Teachers are trained in inclusive education and critical disability studies
   - Teachers use prescribed curriculum to impart goals of basic education to all students equally
     - Training exists to keep teachers updated on curriculum
     - Mechanisms exist to ensure teachers are covering required material
I. Awareness

1. Country is aware of the availability of and means to access basic education
   * Awareness can be raised about opportunities and benefits of engaging in available system for basic education
   2. Awareness can be spread in a socially acceptable way
   3. *System for basic education is perceived by community as equitably accessible
   4. *Benefits of enrolling children/youth in school are appealing to parents and community
   5. Benefits of enrolling children/youth in school are appealing to youth populations that make their own decisions (e.g. street youth, street children, orphans)
   6. *Awareness can be raised among high risk target populations (e.g. rural areas, foster homes, street youth)
   7. Populations that fall in the category of "people who know about basic education but do not know how to engage in it" are
   8. Information about how to engage in basic education system can be conveyed to inform different categories of unaware
   9. *Information on application processes to admit children to schools can be relayed
   10. Information about scholastic requirements (e.g. Uniforms, books, stationery) and where to obtain them can be
   11. *Information on application processes for jobs in education sector can be relayed to potential applicants
   12. Potential applicants can be identified
   13. *Awareness can be raised among education system workforce about necessary components that constitute basic education (e.g. Policies, curriculum, workforce qualifications, teaching tools)
J. Motivation

**Country is motivated to engage with education system and obtain basic level of education**

Motivation strategies are tailored based on existing attitudes towards obtaining basic education

1. Motivation strategies are tailored based on existing attitudes towards obtaining basic education
2. Individuals/communities in the **pre-contemplation stage** can be motivated to consider basic education
   - Influencers of change are motivated to consider the need to educate population
   - Target populations are motivated to consider benefits of basic education
   - Families and households are encouraged to consider education as a priority for their children over household responsibilities
   - Families and households are exposed to convincing messages to prioritize education
   - Youth making their own decisions are motivated by benefits of obtaining basic education (e.g. street youth, street children, orphans)
3. Individuals/communities in the **contemplation stage** can be motivated to prepare themselves or their families to engage in basic education
   - Students are motivated to engage in education system
4. Individuals/communities in the **preparation stage** can be motivated to act in favor of basic education
   - Individuals and communities obtain information on basic education enrollment procedures
   - Skilled individuals are encouraged to apply for positions to be a part of the education workforce
   - Students are motivated to attend school
   - Households in communities are motivated to obtain basic education for all members of the household
     - It provides a sense of fulfillment
     - It creates a sense of self-efficacy among the people
     - It creates opportunities that were otherwise not available
   - Retention rates are increased and students are motivated to complete basic education

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Basic Education
Success Factor Tree

*Students find it beneficial to attend school (e.g. Lessons are interesting, participation in extracurricular activities, provision of free meals, having a peer group)

Parents find it beneficial to admit their children to school (e.g. Children are more competent)

*Education system workforce is motivated to continue facilitating delivery of quality education

Individuals and families care about their health

*Communities are presented with opportunities to volunteer and engage in education system

K. Enabling Resources

Enabling Resources can be utilized to overcome barriers, if they exist, to delivery of basic education

Functional barriers do not exist or can be overcome

- Barriers preventing target populations from enrolling in basic education are minimized or overcome
  - *Barriers preventing enrollment of children can be addressed
  - *Barriers preventing enrollment of youth/young adults can be addressed
  - *Barriers preventing regular attendance of students and teachers can be addressed
  - *Barriers preventing student progress in education system leading to multiple repeating years or drop-outs can be addressed
  - *Skills related barriers are identified (e.g. Teachers do not know if the have the required qualification)
  - Wealth related barriers are identified (e.g. Financial capacity to enroll children in school is inadequate)
  - *Access related barriers are identified (e.g. School is located far from the community)
  - *Time related barriers are identified (e.g. Children/youth/young adults are required to help at home during the day, preventing them from going to school)
  - *Behavior/ Habit related barriers are identified

- *Strategies to address specific high priority and high impact barriers are executed
  - *The barriers are addressed in a socially acceptable way (e.g. Financial barriers to education have been overcome)
Basic Education
Success Factor Tree

*Barriers preventing consideration of enrolling children in school are addressed (e.g. Children/youth are required to help with household chores or income generation instead of attending school)

Strategies facilitate equitable access to basic education

Physical barriers do not exist or can be overcome

Physical obstacles to access imposed by local terrain can be overcome

Infrastructure exists to facilitate travel

Rocks connect communities to schools

The path to school is safe and easy to traverse

*Obstructions to the safe passage of commuters to school can be overcome

Transportation modes exist to transport students to school everyday

The mode of transport is safe

The mode of transport is trusted by families/communities

The mode of transport is efficient

The mode of transport is reliable

*Students are able to engage effectively in lessons

*Students have nourishment to engage in learning (are well fed and able to concentrate in class)

*Students have food security at home

*Schools provide meal plans to students to overcome barriers in learning (e.g. hunger, nutritional deficiencies)

*Schools act to overcome issues students face, such as malnutrition or lack of food security (e.g. through programs like the garden program initiative in Tanzania)

*Students are able to off-load other responsibilities to engage in learning

*Students find learning material stimulating

*Students find attending school exciting and motivating

*Study materials cater to multiple learning capacities/levels

*Students with different abilities actively engage in education

*Study materials cater to students of different ages

Social barriers do not exist or can be overcome

*Culture/religion/ tradition related barriers are identified

*Social group biases do not exist or can be overcome

*Religious barriers do not exist or can be overcome (e.g. religious group segregations/ ethnic group segregations preventing engagement in basic education)

*Language variations/barriers are surmountable

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Basic Education
Success Factor Tree

*Local community members will be comfortable with education delivery system
  *The education delivery system can be operated in a manner consistent with local values
*Conflicts, if they exist, can be resolved
  *Territorial disputes can be overcome
  *Competing demands for education can be negotiated
  *Ownership conflicts influencing access to education can be resolved
*Cultural barriers, if exist, can be overcome
  *Gender stigma, if exists, can be overcome
  *Cultural practices that prevent children from regularly attending school can be addressed
  *Cultural issues (child labor, early marriages), if exist, can be overcome
*Local community members will be comfortable with the education workforce
*Communities are willing to commit to obtaining basic education
  *Community trusts involved stakeholders
  *Community is willing to take responsibility for its well being
  *Community will relinquish present hindering behaviors in favor of desired behaviors
  *Community is optimistic about its future
  *Community values community welfare

**Economic barriers** do not exist or can be overcome
  A viable pricing/payment mechanism exists for the local population
    Payment mechanism considers economic capacity and customer perceived value of the education received
    Pricing accounts for all necessary materials and expenses in addition to school fees
    Financial obligations are clear and enforced
      *Costs to send children to school are clear, not hidden (e.g. uniforms, textbooks, note books, pencils,
        and other necessary materials)
    Mechanisms exist to support students that cannot afford fees
    The economics of the system are appropriately tailored to local income levels
L. Adoption/ Habit conversion

1. Individuals/ communities that have chosen to pursue basic education can be encouraged to maintain their engagement

2. Individuals/ communities that have taken action in favor of basic education can be encouraged to maintain progress
   a. Individuals/ communities are convinced about benefits of basic education
   b. *Individuals and communities feel empowered and believe they can create meaningful impact in their lives
   c. *Education delivery system creates a sense of fulfillment for those who engage in it

M. Measurements and Evaluation

1. *Indicators to measure effectiveness of education system exist
2. The attitudes of populations towards basic education in different regions are understood
   a. Effective channels and reliable means exist to perform a formative assessment of populations' attitudes
   b. *Channels and means are appropriate for specific context
   c. *Rigorous assessments are made to obtain comprehensive data on the knowledge and attitudes of people
Basic Education
Success Factor Tree

*Data collected from assessments are effectively analyzed
*The analysis results are utilized to drive change in populations' motivation and behavior
*The priorities of families are assessed
*The outcomes of providing basic education to the people can be measured

The economic growth in relation to growth in number of students enrolled and number of workforce employed in the education sector is measurable
*It fosters community/social equity
*It promotes wealth equity among communities

*Effective strategies to address specific barriers are developed
*The barriers that have higher impact on population are identified

The impact on population due to a skill based barrier is assessed
The impact on population due to a wealth based barrier is assessed
The impact on population due to access based barrier is assessed
The impact on population due to a time based barrier is assessed
The impact on population due to a behavior based barrier is assessed
The impact on population due to a cultural barrier is assessed

*Mechanisms exist to measure quality of delivered education to overcome disparities
*Evaluative bodies exist to carry out quality checks

Bodies responsible for inspecting education quality exist
Students are assessed to measure competencies gained through basic education
Students are assessed to verify their understanding of basic mathematical reasoning
Students are evaluated on their understanding of basic mathematical ideas and concepts
*Students are evaluated on their ability to think critically/reason rather than their ability to memorize, recall and recite

Students are assessed to evaluate their basic reading competencies
*Students are assessed to evaluate their basic writing skills

*Education systems/ institutions that do not meet required standards can be strengthened
*Education systems/ institutions that do not meet required quality standards can be identified
*Existing barriers that prevent system/ institution from attaining quality standards can be addressed
N. Sustainability

1. The basic education system in the country is sustainable
   - Country has or can develop sustainable approaches to managing education delivery system
     - *Organizations and institutions that run the basic education system are sustainable
       - *Administrative bodies responsible for components of basic education can sustain themselves
         - *Bodies responsible for policy development on basic education are sustainable
         - *Bodies responsible for basic education curriculum development are sustainable
         - *Bodies responsible for financing the basic education in the system are sustainable
         - *Bodies responsible for recruiting teachers and other education workforce that contribute to the basic education system are sustainable
         - *Bodies responsible for the assessment/examination system within the basic education system are sustainable
         - *Bodies responsible for evaluation of quality of education delivered by the basic education system are sustainable
         - *Bodies responsible for infrastructure growth and expansion with regard to basic education are sustainable
       - *Communication channels used to spread awareness among populations are sustainable
       - *Policies that govern the basic education system are sustainable and enable long term growth and development in the education sector
     - *Entities that support and facilitate delivery of basic education are sustainable
       - Transportation systems connecting communities to schools are self-sustainable
       - *Teacher training programs are self-sustainable
       - Systems in place to produce study material (e.g. textbooks, stationery) are self-sustainable
       - Systems in place to distribute study materials and tools are sustainable
Infrastructure capacities can be expanded through sustainable means
  *Enrollment and teacher projections, infrastructural needs and equipment are used for evidence based planning and budgeting for basic education
  *Technology and methods of teaching and curriculum are updateable
*Quality of education delivered by the basic education system is sustainable or can be improved
  *Quality of teachers teaching subject material can be improved/ maintained over time
  *Quality of teaching material used can be improved/ maintained over time
  *Quality of teaching methods employed can be improved/ maintained over time
  *Quality of students produced by the education system can be improved/ maintained over time
*Feedback mechanisms are in place to facilitate improvement in quality aspects
  *School leadership is evaluated and monitored for effective functioning
  *Teachers are evaluated based on their performance
  The utilization of resources within schools is monitored
*Community engagement in available basic education system can be sustainably improved/ maintained over time
  *The basic education system is able to build the trust of communities and other stakeholders
    *The basic education system has sustainable external stakeholder support (i.e. parents, community members, teachers, church, donor agencies and all levels of government)
*Community observes benefits of engaging in the basic education system over time
  *Individuals with a background in basic education can contribute more to the household and community than individuals with no education
    *Suitable job opportunities exist for individuals who can read, write and perform basic mathematical computations
    *Mechanisms to connect students to job opportunities exist or can be developed (e.g. job counselor, employment office)
  *The enrollment rate of children in the basic education system can be improved over time
*Education delivery system is economically sustainable
  *Action plans must be created, submitted on time, and followed to receive access to funding
  *Mechanisms to fund sustainable operation and maintenance of education delivery system can be identified and
    *Long-term opportunities to leverage private sector capital to fund education system can be utilized
    *Funds may be allocated by country government
    *Teachers are paid well enough to be a viable occupation
  *The economic plans for the basic education system can support future trends
    *The economic system can support employment of increasing education workforce
Basic Education
Success Factor Tree

*The economic system can support infrastructure expansion
*The economic system can support implementation of new technologies in the future
Funds are allocated for creating long-term access to educational systems

Opportunities for growth are available

*Teachers have opportunities for growth
  Teachers have opportunities to be a part of/lead teacher associations at school
  Teachers have opportunities to head team projects
  Teachers have opportunities to organize events in school
  *Teachers have opportunities to engage with external volunteers from non-profit organizations or engage in volunteering activities

*Students have opportunities for growth and learning beyond the curriculum
  *Students have opportunities to take part in extra curricular activities (e.g. art, music, sports)
  *Students have opportunities to take part in inter-school/intra-school competitions
  *Students imbibe skills like teamwork, management (e.g. through team projects or through leadership roles in class)
  *Students imbibe values (e.g. respect for each other, a sense of patriotism, respect for all cultures, concern for the environment and consciousness to protect it)
  *Students have opportunities to be a part of different student unions/groups
  *Students extend the applications of what they learn beyond the learning environment (e.g. at home or where they work)
O. Resilience

1. Events that can disrupt the education system can be overcome
   2. Mechanisms to combat various crisis scenarios exist
      3. Government policies and response to stressors are in place
      4. Infrastructure is resilient to natural disasters
      5. *Communication channels and systems are resilient to environmental change
      6. *Communication channels and systems are resilient to political change
      7. Country is prepared for population growth and demand on education resources
A. Security/Safety

The MC healthcare services delivered meets certain quality standards

1. Quality standards and thresholds for MC healthcare are established
   - Quality standards are established for dispensaries/clinics/health centers/hospitals providing different levels of care
   - Health establishments have required licenses to operate as per regulations
   - Regulatory bodies exist to evaluate and enforce license requirements
   - * Hygienic health practices (e.g., sterilization, disinfection) are enforced at all levels of health establishments (community units, dispensaries, clinics, health centers, hospitals)
   - Quality standards for various MC healthcare dimensions exist
   - Quality standards for health promotive services exist
   - Quality standards for preventive services exist
     - Effective and appropriate examination/screening techniques are implemented for maternal health
     - Effective and appropriate examination/screening techniques are implemented for child health
   - Diagnostic measures for maternal health issues are accurate
   - Diagnostic measures for child health issues are accurate
   - Quality standards for curative services exist
     - Effective treatment that is tailored to different maternal health issues are deployed
     - Effective treatment that is tailored to different child health issues are deployed
   - Quality standards for rehabilitative services exist
     - * Follow-up support and care after treatment of maternal health issue is provided (e.g., peer support program)
     - * Follow-up support and care after treatment of child health issue is provided
   - Quality requirements are established for workforce
Maternal and Child Healthcare
Success Factor Tree

Healthcare workforce are required to have certain levels of education based on assigned roles within the health system

Various roles have required qualifications attached to them
Roles are filled through structured recruitment process
Mechanisms exist to verify qualifications for specific roles
Mechanisms exist to ensure adherence to qualification requirements

Members of the healthcare workforce are trained to manage patients (from all socio-economic backgrounds, ages, religions, capacities) partaking in the healthcare system in a respectful and non-discriminative manner

Healthcare providers have a positive attitude towards customers/patients
Healthcare providers have good interpersonal skills
Healthcare providers adopt a patient-centric health delivery system
Healthcare workforce is trained for emergency preparedness
Health centers/clinics have consistent and adequate availability of healthcare providers

Waiting time for a customer/patient to see a healthcare provider is perceived as acceptable
Absenteeism among healthcare staff is minimized
Health center/clinic operation hours are consistent and acceptable

Checks are in place to make sure policies and regulations are not misused
Corruption, if present, can be circumvented
Mechanisms are in place to take disciplinary action against corruption
Conflicts, if they exist, can be resolved
Territorial disputes can be overcome
Competing demands for healthcare can be negotiated
Ownership conflicts influencing access to healthcare can be resolved

Security during healthcare services will be consistent among both genders
Emergency Services are available to be deployed at any moment
Police are among emergency personnel
Firefighters are among emergency personnel
Emergency Medical Technicians (EMT) are among emergency personnel
Logistics Technicians (e.g., Dispatchers, Department heads) are among emergency personnel
Emergency protocols have been developed
Emergency Protocols have defined objectives
Emergency Protocols have defined roles for personnel
Emergency Protocols have defined communication methods

All personnel have effective training in emergency protocols

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B. Policy

The governing bodies of the country have established the importance of equitable access to MC healthcare facilities and services for all residents
- Structured policies have been developed and implemented to create availability/access to MC health services
- Policies clearly define what constitutes maternal and child healthcare
- Policies establish national goals for provision of MC healthcare facilities and services
- Policies on various aspects related to MC healthcare exist
  - Policies on provision of equitable MC healthcare to all residents of the nation exists (e.g., different socio-economic backgrounds, religions, Customers that have different abilities and needs)
  - Policies on privacy and patient information confidentiality exist
  - Policies on raising awareness and sensitizing population about family planning, MC health exist
  - Policies on provision of healthcare infrastructure exist
  - Policies on making MC healthcare facilities and services affordable exist
  - Policies on improvement of techniques and technology used in MC health system exist
  - Policies on assessment methods utilized exist
  - Policies on quality of MCH service delivered exist
  - Policies to guide government bodies and local leaders to help create access to healthcare exist
  - Policies on quality of medications sold/provided exist
  - Policies on healthcare workforce training and development exist

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Maternal and Child Healthcare
Success Factor Tree

Policies on specific curriculums for different roles within the healthcare workforce exist
Policies on degrees/certifications required to prove qualification for specific positions within the healthcare workforce exist

Policies to support maternal healthcare exist
  Policies on maternal healthcare exist
  Policies on maternal healthcare delivery exists
  Policies on training expectant mothers and families of expectant mothers exist
  Employment conditions and leave policies for pregnant women exist

Policies to support child healthcare exist
  Policies of child healthcare delivery exist
  Policies on vaccinations for children exist
  Policies on nutrition for children exist
  Policies on child mental health exist
  Child labor policies exist

Policies provide means to measure quality of healthcare services provided by different institutions (e.g., dispensaries, clinics, health centers, public, private healthcare institutions)

Policies are economically operational
Policies are functionally operational
Policies are protected from misuse
Acceptable disciplinary measures are in place for policy misuse
Policies are regularly updated

Policies promote partnerships
  Policies promote private sector engagement to create access to MC health services
  Policies promote delivery of MC healthcare services
  Policies promote partnerships with other organizations within the country (e.g., Civil Society Organizations(CSOs), Faith Based Organizations (FBOs), Other Non-profit organizations, medical schools)
  Policies allow international partnerships (e.g., Funding agencies, non-profit organizations)
  Policies promote partnerships between healthcare entities (e.g., healthcare centers, pharmacies, volunteer organizations, referral system)

Policies are scalable and flexible
  Policies are flexible to allow and incorporate development in the healthcare sector
  Policies are flexible to allow incorporation of traditional healthcare practices followed within the country

Policies promoted gender equality at all stage of MC Healthcare and policy making
C. Leadership/Government

1. **Government is committed to creating equitable access to quality MC healthcare services**
   - Government understands and supports the need for access to MC healthcare services
     - Funds are allocated for creating long-term access to MC healthcare facilities and positive health impact in the country
     - Adequate funds are allocated to support delivery of maternal healthcare across the country
     - Adequate funds are allocated to support delivery of child healthcare across the country
     - Funds account for various costs involved (e.g., commodities, health interventions, programs and their management costs, employment costs)
     - Cost sharing opportunities are utilized
       - Opportunities of sourcing private sector capital are utilized where/when needed
       - Opportunities of sourcing non-profit capital are utilized where/when needed
       - Opportunities of sourcing non-traditional capital are utilized

2. **Government supports development of healthcare technology**
3. **Government and policy makers have an ambitious, hopeful, committed attitude**
4. **Government is open to utilizing opportunities for private sector engagement to achieve goals related to health delivery**
5. **Government has means to assess quality of MC healthcare provided**
   - Operational bodies responsible to enforce various healthcare policies exit
   - Operational body responsible for evaluation of outcomes of increasing engagement of population in MC healthcare services exists
   - Operational body responsible for development of MC healthcare strategies for delivery/implementation exist
   - Operational body responsible for development of healthcare investment plans exist
   - Entities responsible for developing medicines and technology to support MC healthcare exist and operate in region
   - Operational body responsible to spread MC healthcare information exists
Maternal and Child Healthcare
Success Factor Tree

21 Operational body responsible for distribution of MC healthcare products exists
22 Operational body responsible for distribution of MC healthcare services exists
23 Operational body responsible for regulation of national MC healthcare systems exists
24 Operational body responsible to measure outcomes of the MC healthcare system exists
25 Operational body responsible for training and assessing healthcare workforce exists
26 Operational body responsible to monitor and take action against drug abuse exists (studies indicate a prevalence of drug abuse among teenagers)
27 Policies and laws on MC healthcare services are adhered to across all political levels (National, Regional, Local)
28 All political sectors are made aware of policies related to MC healthcare services
29 Relevant representation from all political levels are allowed to participate in the regulation and policy framing process
30 Representation includes members from the healthcare sector (e.g., experts in the field of child and maternal health in the country)
31 Government is supportive and influential in driving awareness and implementation of policies
32 Different government bodies at national, regional and local levels are in agreement with policies and work towards its implementation

D. Infrastructure

- **Infrastructure to support the MC healthcare system is in place**
  - Medical institutions continue to produce high quality health professionals for the country
  - Medical institutions continue to provide quality education that is accessible
Maternal and Child Healthcare
Success Factor Tree

4. Medical institutions continue to attract motivated students
5. Medical institutions continue to graduate qualified healthcare professionals
6. Infrastructure facilities to support access to MC healthcare services in a region exist or can be developed
   - Infrastructure facilities accommodate various requirements to effectively deliver MC healthcare services
     - Infrastructure includes provision of distributed network for health across the country to enable equitable access to MC health services
     - Infrastructure facilitates capacity building in the country
   - Infrastructure provision of laboratory space to conduct medical research on MC healthcare exists or can be developed
   - Infrastructure to distribute medications, medical supplies and equipment exists or can be developed
7. Infrastructure (such as health centers/clinics/dispensaries) for delivery/distribution of MC healthcare is secure and reliable
8. Health dispensaries/clinics/health centers/hospitals are equipped with electricity supply
9. Health dispensaries/clinics/health centers/hospitals are equipped with clean water supply
10. * Infrastructure to source and distribute medical support devices/equipment for MC health centers (e.g., life sustaining devices, ultrasound devices) can be identified or setup
11. Infrastructure to develop and distribute medical products and medications to support MC health for communities (e.g., medication) can be identified or setup
12. A robust supply-chain system is developed for distribution of MC healthcare support devices
   - Reliable entities to take on different roles within the supply-chain are identified
   - The supply-chain system is implemented
   - Measures exist to prevent corruption within supply chain
13. Appropriately skilled labor is sourced for construction, operation and maintenance of healthcare centers/clinics
   - Acceptable working conditions can be created in the system
   - Locally sourced labor can be employed
14. Mechanisms to maintain operation of health establishments exists or can be developed
   - A maintenance approach can be designed employing local talent and resources
   - Maintenance procedures can be performed via local talent
   - * Effective maintenance practices can be achieved (e.g., good medical practices like decontamination, disinfection)
15. The infrastructural system is environmentally friendly
16. The infrastructure is accommodating and promotes equality/equal access to all (e.g., individuals that come from different backgrounds, individuals that may need special accommodations)
17. Regional community leaders are supportive of infrastructure development
18. The MC healthcare delivery system is technically scaleable

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Maternal and Child Healthcare
Success Factor Tree

32 Infrastructure accommodates regional population demands
33 Infrastructure facilities include functional sanitation facilities
34 Infrastructure allows creation of a hierarchical network of healthcare providers to cater to various population needs in the MC healthcare domain
   35 Specific healthcare providers/centers provide primary healthcare facilities for MC healthcare
   36 Specific healthcare centers provide specialist MC healthcare for more unique requirements
   37 Reference systems exist to foster a network between primary community units, dispensaries or clinics and specialist health centers/hospitals
38 Healthcare infrastructure based on level (primary, surgical, specialist) of healthcare provided is equipped with technical equipment required to deliver MC healthcare services
   39 Health centers have facilities and equipment for medical examination and diagnosis
   40 Health centers have facilities and equipment for emergency preparedness
   41 * Health centers have facilities and equipment for labor, delivery and recovery
   42 * Health centers have facilities and include equipment for surgery and anaesthesia (e.g., cesarean section)
   43 Health centers have facilities and include equipment for mother and newborn care (e.g., Baby specific hospitals)
   44 * Health centers have facilities and include equipment for pregnancy trainings and counselling services
   45 Health centers have facilities and include provision and equipment for intensive care
   46 Health centers have facilities and equipment to support child mental health analysis and treatment (e.g., diagnosis equipment, counselling facilities)
47 Infrastructure developers have access to resources to enable development
48 An effective MC healthcare delivery system can be designed within the constraints of available resources (e.g., setup of health camps in remote villages, mobile clinics, telephonic/online health service delivery)
49 Infrastructure systems that support good health are developed in conjunction with healthcare delivery infrastructure systems
   50 Infrastructure systems to create access to water and sanitation facilities for all are developed
   51 Infrastructure systems to create food security for all are developed
   52 Infrastructure for education is developed (statistics show higher involvement of educated populations in healthcare systems when compared to less educated populations)
   53 Transportation infrastructure systems are developed
   54 Communication infrastructure systems are developed
Maternal and Child Healthcare
Success Factor Tree

E. Equipment/Supplies

1. Equipment and technology used at health centers/clinics support quality standards of MC healthcare delivery
2. Equipment and technology used at health centers/clinics support quality standards of MC healthcare delivery
   - Health centers/clinics are equipped to address maternal health concerns
      - Treatments for diseases that children in the region are most vulnerable to are provided (e.g., Oral Rehydration Salts for Diarrhea, treatment for pneumonia, treated mosquito nets to avoid malaria)
      - Maternal health concerns related to portpartum care are addressed (e.g., support after childbirth)
      - Maternal health concerns related to safe delivery are addressed (e.g., Presence of skilled healthcare workforce during delivery)
      - Maternal health concerns related to STDs are addressed (e.g., screening for HIV, Syphilis and treatment for the same)
   - Emergency maternal health concerns are addressed through effective obstetric care
     - Emergency maternal health concerns are addressed through effective obstetric care
6. Health centers/clinics are equipped to address child health concerns
   - Effective neonatal care is provided (e.g., immediate attention to breathing and warmth, hygienic cord and skin care, and early initiation of exclusive breastfeeding)
   - Infant healthcare concerns are addressed
   - Child health concerns related to preventive measures are addressed (e.g., vaccinations)
   - Child health concerns related to injuries and emergencies are addressed
   - Child health concerns related to physical development of child are addressed (e.g., counselling on growth and feeding)
   - Child mental healthcare concerns are addressed (e.g., provision of diagnostic and treatment measures)
   - Child nutritional intake requirements for healthy growth and development are addressed
   - Treatments for diseases that children in the region are most vulnerable to are provided (e.g., Oral Rehydration Salts for Diarrhea, treatment for pneumonia, treated mosquito nets to avoid malaria)
   - Treatments for diseases that children in the region are most vulnerable to are provided (e.g., Oral Rehydration Salts for Diarrhea, treatment for pneumonia, treated mosquito nets to avoid malaria)
8. Child health concerns related to unhygienic living practices

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Supplies and commodities used at health centers/clinics support quality standards of MC healthcare delivery

- Health centers/clinics are equipped to address child health concerns
- Access to commodities for basic child health is available (e.g., bandages, medication)
- Vaccinations are available onsite for children and/or newborns
- Health centers/clinics are equipped to address surgeries for all levels of care
- Workforce has proper supplies for safe delivery (e.g., clippers, forceps, wipes etc.)
- Workforce has proper supplies for life saving surgery (e.g., scalpel, syringe, stitches, suture etc.)

Workforce/talent to support MC healthcare system are in place

- Healthcare system workforce is motivated to continue facilitating delivery of quality healthcare services for MC health
- Partners continue to engage in healthcare system delivery
  - Private sector partners continue to aid in MC healthcare service delivery
  - Non-profit organizations continue to aid in MC healthcare service delivery
  - Communities are presented with opportunities to volunteer and engage in the healthcare system
- Country has adequate healthcare workforce to support MC healthcare system needs of the country
  - Country has adequate workforce to deliver child and maternal healthcare
    - Country has adequate, distributed health workforce for MC health promotive services
    - Country has adequate health communication workforce
    - Country has adequate health information officers
    - Country has adequate public health officers
Maternal and Child Healthcare
Success Factor Tree

13 Country has adequate, distributed health workforce for preventive MC healthcare services
    Country has adequate workforce to administer vaccinations
    Country has adequate primary healthcare providers/physicians for check-ups and screening patients for various issues (e.g., for developmental screening in children)
    Country has adequate counselors (e.g., for child healthcare, diet counseling)
14 Country has adequate, distributed health workforce for curative MC healthcare services
    Country has adequate specialist doctors (e.g., pediatricians)
    Country has adequate specialists to treat acute conditions (e.g., emergency doctors, surgeons)
    Country has adequate specialists to treat chronic conditions (e.g., cancer, Tuberculosis)
15 Country has adequate, distributed health workforce for rehabilitative services
    Country has adequate therapists (e.g., counselors for depressions, physical therapists)
16 Country has adequate, distributed support staff
    Country has adequate nurses
    Country has adequate clinical officers
    Country has adequate health administrative officers
    Country has adequate medical technologists
    Country has adequate pharmaceutical technologists
    Country has adequate nutritionists
17 Country has adequate, development of MC health development workforce
    Country has adequate researchers
    Country has adequate field experts
    Country has adequate workforce trainers (e.g., teachers, examiners)
18 Incentives to maintain patient and healthcare workforce involvement are provided
    Healthcare delivery system creates a sense of fulfillment for those who engage in it
19 MC healthcare customers are cognizant about health, good healthcare practices and services available through health education
    Individuals feel responsible for their own health
    Individuals identify MC health as an important concept and are willing to seek knowledge on healthcare
20 Referral systems within the MC healthcare system enable easy appointments with specialists when need arises
    There exists cooperation between facilities involved
    There exist means for patient/customer to access facility referred to
21 Individuals tend to practice good MC healthcare practices, utilize available services and work towards overall community health development
    Individuals and households have access to clean drinking water

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Success Factor Tree

Individuals and households have food security
Individuals have access to education
Mechanisms exist to provide health education on MC health concerns to the community
Individuals can access knowledge on available measures to treat issues associated with MC health
Mechanisms consider varying health literacy of the population
Mechanisms consider varying literacy levels of the population
Mechanisms are culturally appropriate

Individuals feel a sense of self-efficacy by engaging in the healthcare system
MC health providers have a sense of job fulfillment
Healthcare jobs are considered respectable
Jobs in the healthcare domain offer attractive salaries and benefits
Doctors are paid well enough to be a viable occupation
Healthcare jobs offer appealing working conditions
Individuals are trained to practice healthy habits, hence benefiting them and their families
Healthcare jobs for medical practitioners allow for promotion
Healthcare jobs allow participation in associations/ unions (e.g., Peer support group, labor union)

Healthcare professionals are trained in proper communication skills for patients
Healthcare jobs require qualifications of communication expertise obtained at a credible source
Healthcare professionals actively engage in communication with patients
Healthcare professionals actively look for understanding from the patient
Possible communication barriers can be overcome
Healthcare professionals can communicate in multiple ways (i.e. languages, dialects)
AND/OR Healthcare system provides different channels of communication

Healthcare communication training is open to people regardless of gender or otherwise (i.e. ethnicity, age, religious belief etc.)
G. Capital/Finances

1. Capital/finances to support MC healthcare system can be accessed
2. Economic barriers with regard to creating accessibility to MC healthcare can be overcome
   - A viable regional support system/healthcare insurance coverage mechanism exists for the local population
     - Regional support/insurance is equitably available to all populations
       - Payment mechanism considers economic disparities in income of rural and urban populations
       - Payment mechanism considers economic disparities within a region (e.g., within a rural region, within an urban region)
     - Payment mechanism considers economic capacity and customer perceived value of the healthcare service received
   - Relevant and target populations are made aware of available health support/insurance coverage (e.g., rural populations, populations with low literacy)
   - Regional support/insurance scheme is appealing to attract participation
     - Benefits of insurance/regional support scheme in comparison to existing system are conveyed to target populations
       - Insurance/regional support benefits are based on household expectations
       - Insurance/regional support benefits are based on household/individual's ability to pay
       - Insurance/regional support benefits are based on household/individual's willingness to pay
3. Costs of MC healthcare facilities are controlled to local economic capacity
   - The economics of the system are appropriately tailored to local income levels
     - Cost sharing mechanisms are adopted by the government and other funding sources
H. Practices/Mechanisms

1. Practices/mechanisms to support MC healthcare system are in place
2. Equipment and technology used at health centers/clinics support quality standards of MC healthcare delivery
3. Health centers/clinics are equipped to address maternal health concerns
   - Maternal health concerns related to prenatal care are addressed
     - Regular health check-ups are administered to women during their pregnancy
       * Appropriate diagnostic tests and treatments are administered in the first trimester (e.g., screening for HIV/Syphilis, blood count tests, pap smear, antibody screening)
       * Appropriate diagnostic tests and treatments are administered in the second trimester (e.g., ultrasound tests, blood tests)
     - Appropriate diagnostic tests and treatments are administered in the third trimester (e.g., fetal development assessments, Streptococcus screen, glucose loading test, hematocrit test)
   - Counselling on nutrition intake during pregnancy is provided
   - Pregnancy trainings are provided with information on dos, don'ts and symptoms that require pregnant women to see a healthcare professional
     * Life-threatening issues such as development of eclampsia are recognized early and treated
     * Risks associated with contracting diseases (like malaria or AIDS) while pregnant are reduced through appropriate treatment
4. Maternal health concerns related to postpartum care are addressed (e.g., support after childbirth, peer support groups for new mothers)
   - Treatment to prevent excessive bleeding (i.e hemorrhage) of mother after birth are administered (e.g., injecting oxytocin)
   - Early infections after birth are recognized and treated
5. Health check-ups and care for mother post birth are provided (e.g., check for vital signs, dehydration, bowel movements)
6. Safe healing environments for mothers post birth are provided (e.g., specific maternal health area)
7. Maternal health concerns related to safe delivery are addressed (e.g., Presence of skilled healthcare workforce during delivery)
Skilled birth attendant is present during delivery
Progress of labour and fetus during delivery are monitored
Caesarean section, if required, is performed
* Birth complications (e.g., ectopic pregnancy, pre-eclampsia, placental abruption, fetal distress) are handled effectively
Health centers/clinics are equipped to address child health concerns
* Effective neonatal/infant health care is provided (e.g., first 1000 days of care, Baby Friendly Hospital)
  * Care is taken to ensure breathing of the baby (e.g., intrapartum asphyxia)
Resuscitation mechanisms for newborns are implemented when required
* Hygienic provisions are made in clinics/health centers for new born babies
Medical care is provided to sick new borns
* Medical care is provided to low birth-weight newborns (e.g., heating and drying, incubator)
Medical care is provided to premature babies
Early initiation of exclusive breastfeeding is encouraged
Milestone care system for infants is used (e.g., first 10, 100, 1000 days of care)
Child health concerns related to preventive measures are addressed (e.g., Herd Immunity)
  Basic vaccinations are required for all children and administered
  Information on hygiene and health risks are provided
  Dental and oral hygiene and treatment are provided
  Screening programmes for disease prevention are provided (e.g., screening for congenital malformations)
  Nutritional and food supplement information is provided
Child health concerns related to injuries and emergencies are addressed
Child health concerns related to physical development of child are addressed
  Diagnostic measures are in place to recognize and assess developmental health concerns
  Physical therapy is provided
  Nutrition supplements and diet counselling is provided
Child mental healthcare concerns are addressed (e.g., provision of diagnostic and treatment measures)
  Diagnostic measures are in place to recognize and assess mental health conditions
  Treatment mechanisms are in place for specific conditions
Treatments for diseases that children in the region are most vulnerable to are provided
  Children with diarrhea can be treated (e.g., with Oral Rehydration Salts (ORS))
  Children with pneumonia can be treated
  * Preventive measures and treatment for malaria is available (e.g., availability of treated mosquito nets)
Health centers/clinics are equipped to provide consistent case management (i.e. same provider throughout healthcare process)
Maternal and Child Healthcare
Success Factor Tree

Effective scheduling and communication between healthcare workforce is utilized
Health centers utilize proper communication technologies available
Health center workers are trained in proper communication techniques

I. Awareness

1. Country is aware of importance and means to access MC healthcare system
2. Country is aware of the benefits and means to access available healthcare system
   * Effective channels exist to spread awareness of benefits and means to access healthcare among populations (e.g., mass media channels like national news, local radio shows; interpersonal channels like schools, clinics, healthcare providers)
3. Acceptable and robust communication channels are identified or developed
   - Existing institutions and/or private sector channels are leveraged to spread awareness among the masses (e.g., trusted companies/brands that are popular among communities)
4. Channels to spread awareness that have high impact and are reliable can be identified
5. Drivers of awareness acknowledge the need for awareness among the population about healthcare systems
6. Channel drivers formalize intent to raise awareness about healthcare systems by setting goals, objectives and developing strategies
7. Channels to spread awareness are secure and stable
   - Channels to spread awareness are supported by sufficient resources
     - Channels to spread awareness are equipped with material resources
     - Channels to spread awareness are equipped with technological resources
     - Channels to spread awareness are equipped with human resources
     - Channels to spread awareness are financially secure
   - Channels to spread awareness operate legally in compliance with existing laws and regulations
Channel drivers are trusted by the government and other healthcare stakeholders
Communication systems utilized are persistent and secure for long-term purposes
Involved stakeholders trust communication channels used
Different and multiple channels of communication are utilized to raise awareness among different target populations
A variety of effective channels of communication exist
Communication channels and systems are resilient to environmental and political change
Awareness can be spread in a socially acceptable way (e.g., messages are aligned with the traditional belief that health is a balance between physical, spiritual, moral and social aspects of life)
Awareness can be raised among vulnerable/high risk target populations (e.g., rural areas, foster homes, adolescents)
Content used to spread awareness about the healthcare system is effective
Content is based on formative research and has been proven to be effective (e.g., If formative research proves mothers do not believe in the effectiveness of vaccines, content is designed to effectively overcome that notion)
Content is culturally appropriate and aligns with values of target community
Content motivates population to engage in available healthcare system
Content is specific to context and target audience (e.g., interpersonal interactions with a healthcare professional is a channel used to assist with family planning)
Variations in literacy are surmountable
Content is sensitive to variations in literacy
Majority of the target audience finds content easy to understand (e.g., Use of more pictorial representations, avoidance of difficult words or phrases)
Content can sensitize population about MC healthcare in order that communities fully participate in it
Awareness can be raised where people have little knowledge about MC healthcare system
Awareness can be raised among local leaders
Awareness can be raised among local leaders about the need for better healthcare system in the region
Awareness can be raised about specific requirements to strengthen MC health delivery in the region
Awareness can be raised on the particular healthcare service delivery (maternal or child) that is immediately required in the region to allow prioritization (e.g., increasing number of deaths caused by child diseases or lack of vaccines prioritizes child health over maternal)
Target populations/communities are made aware about MC health

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Populations are made aware of existing MC health rights
Target populations (e.g., expectant mothers, new mothers, families of expectant mothers) are made aware of maternal healthcare
  Target populations are informed about the stages of pregnancy
  Target populations are informed about the what to expect at different stages of pregnancy and during childbirth
* Target populations are informed about the best practices and what to avoid during pregnancy (e.g., nutrition intake, exercise, avoid heavy lifting)
  Target populations are informed about nutritional requirements for an expectant mother
  Target populations are informed about pre and post natal care
Target populations/communities (e.g., families with children below the age of 18, foster homes, schools) are made aware of child healthcare
  Target populations are informed about care to be taken with new born children
  Target populations are informed about vaccinations available for children and the benefits of administering them
  Target populations are informed about nutritional requirements to enable healthy development of children
  Target populations are made aware of child mental health and services available in association with it
All populations are made aware of existence of unqualified healthcare professionals and how to identify them
Individuals can access knowledge on preventive measures that reduce risk of ill health with respect to MC health
Awareness can be raised among potential healthcare workforce about job opportunities in the healthcare sector and required qualifications (e.g., doctors, nurses, pharmacists, pharmacologists, healthcare specialists, health communicators)
  Awareness can be raised about available training/degrees for different positions available within the healthcare workforce
  Job opportunities in the MC healthcare domain are appealing
Possible partners can be approached to contribute to the healthcare system
  Awareness can be raised among non-profit groups about healthcare system opportunities for engagement
Possible private sector partners can be made aware of healthcare system opportunities for engagement

Awareness can be raised among healthcare system workforce about necessary components that constitute MC healthcare to strengthen services provided

Awareness can be raised among healthcare system workforce about necessary components that constitute maternal healthcare

Awareness can be raised among healthcare system workforce about necessary components that constitute child healthcare

Awareness can be raised where people know about requirements to maintain MC health but do not know how to avail it

Information about how to engage in the healthcare system can be conveyed to inform different categories of populations

Local leaders can be made aware of means to strengthen existing local healthcare systems

Local leaders and influencers of change can be informed about new healthcare technology/medicines to support MC health

Local leaders and influencers of change can be informed about means to avail MC healthcare facilities for their region

Populations are informed about available healthcare services to support MC health

* Target populations are informed about services available to support a safe pregnancy and safe delivery (e.g., pregnancy training, benefits of having a healthcare professional oversee

Target populations are informed about child physical, mental and developmental health facilities available

Populations are informed about when (e.g., at what stage they need to see a doctor) and where to avail healthcare services to support MC health

Populations are informed about available certified healthcare centers

Populations are made aware of when the healthcare centers operate

Populations are informed about medications and the process to obtain them

Information on application processes for jobs in healthcare sector can be relayed to potential applicants

Potential applicants are identified from institutions offering degrees/training for various healthcare positions within MC domain

Healthcare workforce can be made aware of means to improve existing systems

Feedback mechanisms and means to improve existing MC health service systems in a region exist

Awareness can be raised among possible partners on how they can contribute to the healthcare system
Maternal and Child Healthcare
Success Factor Tree

Awareness can be raised where people are aware of MC healthcare and how to access it but do not know how to overcome specific barriers

Existing barriers are identified
Skills related barriers are identified (e.g., Insufficient qualified healthcare workforce)
Wealth related barriers are identified (e.g., Financial capacity to engage in healthcare system is inadequate)
Access related barriers are identified (e.g., Healthcare center is located far from the community)
Time related barriers are identified (e.g., Healthcare center is operational only for limited hours)
Behavior/Habit related barriers are identified (e.g., pursuit of traditional medicine beyond its effectiveness)
Culture/religion/tradition related barriers are identified (e.g., Stigma against going to see a professional doctor)
Knowledge barriers are identified (e.g., myths about MC health)

Effective strategies to address specific barriers are developed
The barriers to be addressed are identified and prioritized
The impact on population due to a skill based barrier is assessed
The impact on population due to a wealth based barrier is assessed
The impact on population due to access based barrier is assessed
The impact on population due to a time based barrier is assessed
The impact on population due to a behavior based barrier is assessed
The impact on population due to a cultural barrier is assessed

Strategies to address specific high priority and high impact barriers are implemented based on prioritization

Possible private sector partners can be made aware of means to engage in the healthcare system
Awareness can be raised among non-profit groups about means to engage in healthcare system
J. Motivation/Acknowledgement of Needs

1. Country is motivated to engage in available healthcare system
   a. The beliefs, attitudes and perceptions of populations towards MC healthcare in different regions are understood
   b. Effective channels and reliable means exist to perform a formative assessment of populations’ beliefs, attitudes and perceptions
   c. Mechanisms used to perform formative assessment are appropriate for specific context
   d. Rigorous assessments are made to obtain comprehensive data on the knowledge and attitudes of people towards MC healthcare
   e. Data collected from assessments are effectively analyzed
   f. The analysis results are utilized to drive change in populations’ motivation and behavior
2. Evidence-based intervention strategies are employed to motivate populations at different stages of change
   a. Individuals/communities in the pre-contemplation stage (when they are not considering engaging in available healthcare services) can be motivated to consider availing MC healthcare services
   b. Influencers of change are motivated to consider the need to provide access to MC healthcare
   c. Target populations are motivated to consider benefits of healthcare
   d. Barriers preventing consideration of engaging in healthcare system are addressed (e.g., lack of finances to cover costs)
   e. Strategies to facilitate equitable access to MC healthcare services are implemented
   f. Viable private sector channels are considered and employed to overcome barriers
3. Communities are conscious about existing living conditions and possible healthier lives after obtaining healthcare services (e.g., healthy mothers can foster healthy families)
   a. * Individuals, families and communities feel empowered and believe they can create meaningful impact in their lives
   b. Individuals and families care about their health

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Communities are aware of channels they can use to influence change in their lives

Individuals/communities in the contemplation stage can be motivated to engage in the healthcare system

Local leaders and influencers of change believe they can benefit population by facilitating awareness and access to healthcare

Leaders care for the greater good of the communities, regions and the nation

Leadership is convinced that improving access to quality MC healthcare facilities can have a long-term impact on the health of communities, states, and the nation

Individuals, families and communities are convinced about benefits of MC healthcare

Barriers preventing target populations from engaging in MC healthcare are minimized or overcome

Available healthcare facilities are made a comparatively more appealing alternative to existing practices in terms of skills, wealth, access and time

Families and households are encouraged to adopt the practice of consulting healthcare professionals

The priorities of families are assessed

Families and households are exposed to convincing messages to prioritize healthcare (e.g., risks associated with unattended birth)

Individuals are motivated to consider building a career in the MC healthcare domain

Individuals are motivated to enroll in and complete degrees/trainings offered by medical institutions

Medical institutions exist to impart education/training for medical degrees/certifications

Medical institutions provide quality education

Medical institutions are accessible

Degrees/trainings/certifications provided by medical institutions are affordable

Degrees/trainings/certifications qualify individuals for specific jobs within the MC health domain

Skilled individuals are motivated to participate in their national healthcare delivery system

Tangible and intangible incentives offered to participants in the healthcare delivery system are attractive (e.g., Attractive salaries, respectable job, good standards of living)

Working conditions promote interest in job opportunities

Healthcare centers provide safe work environment

Healthcare centers provide fulfilling work opportunity

Jobs in healthcare system are perceived as respectable

Equal opportunities are offered to all qualified applicants

Opportunities to volunteer are provided

Households in communities are motivated to avail healthcare facilities for all members of the household

Engaging in available healthcare facilities creates a sense of self-efficacy among the people

Households and communities can observe improvements in health of families who avail healthcare
K. Enabling Resources

1. Country has or can create access to enabling resources wherever required
   - Possible entities (organizations, institutions, companies) or resources (material, human capacity/know-how) can be identified to overcome existing challenges to enable equitable access/availability of MC healthcare

2. Economic barriers in providing quality MC healthcare services and in receiving MC healthcare services can be overcome
   - Economic barriers with regard to creating availability of MC healthcare can be overcome
     - Sources are available to sponsor system start-up or to gain/augment government financial support

   - Government allocates funds for healthcare sector with emphasis on providing equitable coverage to all
   - Viable opportunities for industry engagement are utilized
   - Opportunities to obtain external monetary aid are utilized (e.g., USAID, JICA, GIZ)
     - Monetary transaction costs at country level are kept in check (to avoid paying high exchange rates)
   - Fragmentation of monetary resources are minimized
   - Other possible partnership opportunities between healthcare system and entities within the country are tapped

3. The MC healthcare service delivery system is economically scaleable
4. Possibility of corruption can be circumvented
   - All entities in the MC healthcare system that utilize funds are held accountable for it
   - Financial distribution within the healthcare system is done based on past results from performances of various sub-sectors

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Opportunities to engage non-profit resources are effectively utilized
A business model can be developed that accounts for variations in community purchasing power
The cost to employ skilled workforce for delivery of MC healthcare services can be supported by the system business model
Employment salaries match salaries offered by competing healthcare recruitment channels (e.g., preventing skilled professionals from going abroad due to attractive salaries)
The cost of utilizing technology for healthcare can be supported by the system business model
The cost to develop/implement healthcare products and services can be supported by the system business model
The cost to produce/implement development and distribution of healthcare products (e.g., vaccines, contraceptives) for MC health can be supported by the business model
The cost to construct and maintain healthcare infrastructure can be supported by the business model
Business model accommodates integration of healthcare services to avoid duplication and wastage

Physical barriers do not exist or can be overcome
Physical obstacles to access to healthcare providers imposed by local terrain can be overcome
Infrastructure exists to facilitate travel
Operational transportation modes exist and connect communities to health facilities
The mode of transport is safe
The mode of transport is trusted by families/communities
The mode of transport is efficient
The mode of transport is reliable
Transportation cost is affordable
The route from community establishment to healthcare facility is safe and easy to traverse
Obstructions to the safe passage of commuters to healthcare facility can be overcome
Alternative means to deliver MC health services are sought where transportation is not feasible (e.g., telephonic services, mobile health dispensaries)

Social barriers do not exist or can be overcome
Social group biases do not exist or can be overcome
Religious barriers do not exist or can be overcome (e.g., religious group segregations/ethnic group segregations)
Religious Organizations can help facilitate progress if barriers do exist
Language variations/barriers are surmountable
Local community members will be comfortable with healthcare delivery system
The healthcare delivery system can be operated in a manner consistent with local values

Infrastructure exists to facilitate communication between different stakeholders

Cultural barriers, if exist, can be overcome

Stigma associated with diseases or conditions can be alleviated

* Stigma/misconceptions associated with engaging with a healthcare provider/obtaining health check-up can be overcome (e.g., parental consent deters youth in Kenya from getting checked for HIV)

Apprehension associated with health information being leaked can be resolved

MC healthcare services provided are aligned with cultural preferences

MC healthcare provided instigates positive cultural norms towards healthcare services

L. Adoption/Habit Conversion

1. **Individuals/communities maintain engagement with the healthcare system**
2. Return rates are increased and individuals, families and communities are encouraged to consult trusted medical practitioners for MC health related matters
3. Patients find it beneficial to consult trusted medical practitioners (e.g., Level of comfort offered, services provided result in better health)
4. Families of patient trust qualified medical practitioners for health related advice
5. Local community members is comfortable with the healthcare workforce
6. Local community trusts healthcare workforce
7. Local and regional healthcare system operators are comfortable working with each other
8. Healthcare delivery system is free from any kind of monopolizing entity
9. Acceptable disciplinary measures are in place for taking action against misconduct within the healthcare system
10. Acceptable disciplinary measures are in place to prevent misconduct on the part of healthcare staff (physicians, nurses, volunteers)
11. Acceptable disciplinary measures are in place to prevent misconduct on the part of healthcare administrative staff
12 Acceptable disciplinary measures are in place to prevent misconduct on the part of other stakeholders involved in the healthcare system
13 Communities are willing to avail healthcare facilities delivered
   14 Community trusts healthcare workforce
   15 Community trusts involved stakeholders
   16 Community is willing to take responsibility for its well being
   17 Community will relinquish present impeding behaviors in favor of desired behaviors
   18 Community is optimistic about its future
   19 Community values community welfare

M. Measurements and Evaluations

Indicators to measure effectiveness of healthcare system exist
2 Mechanisms exist to measure quality of care delivered by healthcare facilities
   3 Evaluative bodies exist to carry out quality checks
   4 Dispensaries, clinics, health centers and hospitals (public and private) are required to uphold quality standards
   5 Key quality indicators for MC healthcare delivery system are measured
      Maternal health indicators show positive impact of health services delivered
         Maternal mortality rate is decreased
         Percentage of women who received antenatal care is increased
         Number of births that took place with a skilled healthcare worker in attendance is increased
         Percentage of women who received postnatal care (PNC) is increased
         Low birth weight prevalence is decreased
      Child health indicators show positive impact of health services delivered

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Maternal and Child Healthcare
Success Factor Tree

13. Infant mortality rate/ratio is decreased
14. Under five mortality rate/ratio is decreased
15. Number of births that took place in a healthcare facility is increased
16. Nutritional status of children under five shows positive results (e.g., measured through BMI, degree of stunting)

* Percentage of children who have received all basic vaccines is increased (e.g., for measles, pneumococcal vaccines)
18. Prevalance of breast-feeding among children under 6 months is increased
19. Neonatal mortality rate/ratio is reduced

20. Individuals/communities that have chosen to engage in available healthcare services can be encouraged to maintain their engagement
21. Government and local leaders are motivated to continue supporting healthcare system requirements for MC health
22. The outcomes of providing healthcare facilities to the people can be measured (more outcomes listed in lines 397-414)
23. Existing solutions are driving a year over year improvement in maternal health (e.g., more safe deliveries, more deliveries in presence of healthcare professional, decrease in maternal mortality rates)
24. Existing solutions are driving a year over year improvement in child health (e.g., decrease in infant mortality rate, decrease in mortality rates of children under the age of five)
25. Access to MC healthcare services fosters community/social equity
26. Provision of access to healthcare facilities promotes health equity among communities

N. Sustainability

The healthcare system in the country is sustainable
2. Country has or can develop sustainable approaches to managing healthcare delivery system
3. Organizations and institutions that run the MC healthcare system are sustainable
4. Administrative bodies responsible for components of MC healthcare system can sustain themselves

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Bodies responsible for policy development on MC healthcare are sustainable
Bodies responsible for healthcare workforce training curriculum development are sustainable
Bodies responsible for financing the MC healthcare delivery in the system are sustainable
Bodies responsible for recruiting healthcare workforce that contribute to the MC healthcare system are sustainable
Bodies responsible for evaluation of quality of MC healthcare service delivered are sustainable
Bodies responsible for infrastructure growth and expansion with regard to MC healthcare are sustainable

Communication channels used to spread awareness among populations are sustainable
Policies that govern the MC healthcare system are sustainable and enable long term growth and development in the health sector

Entities that support and facilitate delivery of MC healthcare services are sustainable
Transportation systems connecting communities to health centers/healthcare providers are self-sustainable
Healthcare workforce training programs are self-sustainable
Systems in place to source and distribute medical devices are sustainable
Systems in place to source and distribute medical equipment are sustainable
Systems in place to source and distribute medications are sustainable
Systems in place to deliver healthcare services are sustainable
Infrastructure capacities can be expanded through sustainable means

Infrastructural needs and equipment are used for evidence based planning and budgeting for MC healthcare systems
Technology used in the MC healthcare domain is relevant and updateable

Quality of MC healthcare services delivered by the healthcare system is sustainable or can be improved
Quality and standards of health centers can be improved over time
Quality and capabilities of health workforce can be improved over time
Quality and standards of medication and other medical products offered can be improved over time
Quality of service delivery and patient/customer interaction can be improved over time
Feedback mechanisms are in place to facilitate improvement in quality aspects
Healthcare administration is evaluated and monitored for effective functioning
Physicians, nurses and other health workforce are evaluated based on their performance
The utilization of resources within healthcare centers is monitored for efficiency

Community engagement in available MC healthcare system can be sustainably improved/maintained over time
The MC healthcare system is able to build the trust of communities and other stakeholders
Maternal and Child Healthcare
Success Factor Tree

The MC healthcare system has sustainable external stakeholder support (e.g., households, community members, teachers, churches, donor agencies and all levels of government)

Community observes benefits of engaging in the MC healthcare system over time
- Communities are better informed about MC healthcare, MC healthcare resources and healthy practices
- The results of key quality measurement factors for the MC healthcare system show improvement with increased engagement in the healthcare
  - Children and youth grow strong and healthy
  - Couples/single mothers are better able to plan families and provide for them
  - Expectant mothers are able to maintain good health through pregnancy
  - Increasing number of safe childbirths with healthy mothers and newborn in the presence of healthcare professional are observed

MC healthcare delivery system is economically sustainable
- Mechanisms to fund sustainable operation and maintenance of MC healthcare delivery system can be identified and engaged
  - Funds may be allocated by country government
  - External/Internal aid to augment/support government funding can be identified and leveraged when required
  - Long-term opportunities to leverage private sector capital to fund healthcare system can be utilized when required
  - Opportunities to engage non-profit organizations can be leveraged
  - Action plans are created, submitted on time, and followed to receive access to funding
- The economic plans for the MC healthcare system can support future trends
  - The economic system can support employment of increasing healthcare workforce
  - The economic system can support infrastructure expansion
  - The economic system can support development and implementation of new technologies in the future

The healthcare delivery system is economically sustainable
- Technology is used effectively to reduce costs to deliver MC health services
- System construction costs are self-sustained and/or reliably supported
- System operating costs are self-sustained and/or reliably supported
- System maintenance costs are self-sustained and/or reliably supported
O. Resilience

The MC healthcare system is resilient

1. MC Health centers/clinics that do not meet required standards can be strengthened
2. Health systems that do not meet required quality standards can be identified
3. Existing barriers that prevent system/center from attaining quality standards can be addressed
   - Financial barriers are addressed
   - Lack of availability of skilled/qualified workforce is addressed
4. Lack of access to medical supplies and stocks is addressed
5. Issues associated with quality standards are identified and addressed
6. Financial barriers are addressed
7. Lack of availability of skilled/qualified workforce is addressed
8. Lack of access to medical supplies and stocks is addressed
9. Health systems can perform risk analyses for their patient demographic
10. Health systems collect anonymous data from patients
11. Health centers collaborate with nearby centers
12. Health centers have capability to interpret data collected
13. Health systems utilize pre-identification techniques to determine future trends
   - Health systems utilize national census data where available
   - Health systems develop and utilize trend models
   - Health systems are accurate when determining future trends
14. Health systems are trained to accommodate certain events (i.e. epidemic, outbreak)
15. Health centers/clinics have surplus supplies
16. Health providers are trained in protocol to deal with large risk events (i.e. epidemic)
17. Health centers/clinics can accommodate a sudden influx of patients for the short term

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# SYSTEM TEMPLATE

<table>
<thead>
<tr>
<th>SYSTEM ELEMENTS</th>
<th>SYSTEM LINKAGES</th>
<th>RATIONALE</th>
<th>STAKEHOLDERS TO INVOLVE</th>
<th>GAP</th>
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**SYNTHESIS OF PRIORITY**

**SCOPE**

- Individual
- Regional
- Household
- National
- Community

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FACILITATOR’S GUIDE

RFA DESIGN INPUT SESSION

INTRODUCTION
After completing the Comprehensive Issue Analysis working session, teams focusing on each sector will have identified and ranked up to three priority success factors that they believe could advance progress on the session sector if supported through research. Pursuing research on the priorities, however, will require development of a Request for Applications (RFA) to formally solicit proposals from researchers to address those aspects of the success factor that are viewed as non-existent or operating at a less than adequate level. To this end, the RFA Design Input session is intended to gather key inputs that will facilitate the design of an RFA to specifically address each priority.
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REQUEST FOR APPLICATIONS DESIGN INPUT SESSION

Overview
Development of an effective RFA requires clear definition of the scope of the priority to be addressed, the desired objectives of the effort and related outcomes, the timing of the impact required, and a range of details that form the technical foundation of the request, while ensuring that it is not redundant with prior/existing efforts and is instead focused on closing gaps in our understanding of the topic under investigation. Additional insight into the contacts, collaborators, and partners that may help address the priority are also valuable, as well as thoughts on potential research pursuits that could inform means to address the priority. Ultimately, these are all inputs that participants in the R4D are likely to be able to inform from their knowledge and experience, and gathering this input is the focus of the RFA Design Input Session.

PREPARING FOR THE RFA DESIGN INPUT WORKSHOP – FACILITATOR

Request for Applications Workshop Activity

The success factors that were deemed priorities in the CIA working session should meet the following three criteria:

1. The success factor is **significant** to overall efforts to realize sector-specific outcomes
2. The success factor is **not currently realized** in the existing system in the region of interest today
3. There is great likelihood that **research** on that success factor **can help realize a desired state**

Each of the prioritized success factors was cast in the context of a system during the CIA session, and each priority’s System Template now serves as a focus for the RFA Design Input activity.

**With this as context, facilitation guidance for the RFA Design Input session is as follows:**

**Logistics**

**Location**
Participants should return to the breakout rooms they utilized for the Comprehensive Issue Analysis activity to engage in the RFA Design Input session. The breakout rooms include the Royal Palm Room (which will be split into two sections), as well as the Acacia and Ebony Rooms.
Timing

May 8th, 09:40 – 13:00 (Session timing shaded on overall agenda below)

<table>
<thead>
<tr>
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<th>Activity</th>
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<tr>
<td>08:30 – 09:30</td>
<td>Plenary: Comprehensive Issue Analysis</td>
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<tr>
<td>09:40 – 13:00</td>
<td>Issue Analysis Breakout Sessions (4 concurrent 3-hour sessions, by sector)</td>
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<td>[Tea Break at 11:00 am for 15 minutes]</td>
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<tr>
<td>13:00 – 14:00</td>
<td>Lunch</td>
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<tr>
<td>14:00 – 16:00</td>
<td>RFA Design Input Session</td>
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</tbody>
</table>

Objective

The objective of this session is for participants in each team to:

1. Contribute their experience and knowledge to record important information that will help shape RFAs to specifically address each priority success factor that they believe could advance progress on the session sector if supported through research.

Facilitator’s Pre-workshop Preparation

Your role as the facilitator is to guide participants through the following activity and support productive discussion among participants. We hope to encourage participants to provide added context on the nature of the gap to be addressed at the core of the priority success factors identified in the CIA working session. To prepare for your role, please –

1. Read this guide completely
2. Review the System Template [Figure 1] and RFA Design Input Template [Figure 2] and be familiar with its content and organization
3. Participate in training provided for facilitators
4. Ensure that all the items required at your session, as provided in the checklist in this document, are available before you start your session

Team Formation

For Part 1 of this session, participants should remain in the same teams formed during the CIA session.
Session Materials
Each breakout room should have the following materials and supplies:

- Completed System Templates for each priority success factor (up to 3 per table) [see Figure 1 for illustration]
- RFA Design Input Template (at least 3 per table) [see Figure 2 for illustration]
- Flip charts (1 per table)
- Flip chart markers
- Pens/pencils
- Highlighters
- Sticky notes
- Pins or tape (depending upon room wall materials)

Room Preparation
The room should be set up with individual tables arranged to accommodate 5 to 6 people. Each table should be near a wall on which the previously developed System Templates are posted. A flip chart should also be arranged near each table. Each table should then be provided with 3 RFA Design Input Templates, as noted above, as well as markers, pens/pencils, sticky notes, and pins or tape.

Facilitating the RFA Design Input Session
As participants in this session should already be acquainted from prior activities, the working session should start off quickly with a brief introduction period and then progress in two phases. Attempt to adhere to recommended activity timing as much as possible.

Activity Introduction (10 minutes)
1. Introduction – You should initiate the session by gaining the attention of attendees.
2. Instructions - You will be giving participants at your session instructions on what will take place during the session and introducing the concepts and logic presented in this document. This presentation will be provided to you prior to the session for convenience and consistency.

Once general instructions are provided, the workshop activity can commence. The workshop is divided into two main parts and a description of each is provided in detail below. Importantly, teams should complete activity Part 1 for each of their top priorities (up to three) in the 60-minutes allotted for the exercise to ensure that there is time for the final activity.

Activity Details: Part 1: Team Completion of RFA Design Input Template (60 min)
In the first part of the activity, participants should develop one RFA Design Input template for each of their priority success factors (up to three), using insights from their system level work to shape the inputs recorded on the RFA Design Input template.
The RFA Design Input Template requests 8 categories of information that will help inform RFA design. See Figure 2.
1 – Problem Definition
2 – Scope
3 – Technical Foundations
4 – Work-to-date Information
5 – Cross-cutting Issues
6 – Potential Contacts, Collaborators and Partners
7 – Impact Potential
8 - Potential Research Initiatives

The following information should be recorded in each of these sections:
1 **Problem Definition**: Here participants should record a concise statement of the specific challenge related to their priority that they believe can be addressed through research, the motivation for this focus, and the objectives and/or outcomes sought from a related research effort.
2 **Scope**: The scope definition should include details on the intended beneficiaries of the effort, their geographic location, and any quantification of the scale of the problem to be addressed
3 **Technical Foundations**: The section should specify any technical fields or domains that participants believe should lead the research to address the outlined problem statement or could otherwise contribute a valuable perspective on the problem.
4 **Work-to-date Information**: In this section participants should record knowledge of any past or on-going efforts that are related to or directly address the stated problem, any known gaps in this work, and any funding sources that may be support related work
5 **Cross-cutting Issues**: Here participants can capture any dependencies of the stated problem on issues of gender, conflict, or government.
6 **Potential Contacts, Collaborators, and Partners**: Here participants can outline any specific individuals, groups, or organizations that they believe could play a valuable role in accelerating or enhancing the impact of research intended to address the stated problem
7 **Impact Potential**: Here, participants should outline expectations on the nature of the effort likely required to address the priority and the time likely required to achieve outcomes. Categorization of the anticipated effort as fundamental research, development using established knowledge, or ready implementation of existing knowledge/solutions would be helpful.
8 **Potential Research Initiatives**: In this section, participants are encouraged to record specific project ideas or initiatives that they believe would help illustrate the kind of work that could advance efforts to address the stated priority.

Teams should be encouraged to record any knowledge or experience they have that would improve and/or focus the development of an RFA to address the priority success factor under discussion.
Once an RFA Design Input Template is completed for one success factor, teams should move on to their next priority success factor.

In the last 5 minutes of the activity, the team should post their RFA Design Input templates on the walls around the room at a legible height and spacing. This will create a showcase of the RFA Design Input Templates that will be reviewed and enhanced by session participants in the second part of the session.

**Activity Details: Part 2: Group Improvement of RFA Design Input Templates (50 minutes)**

In the second part of the session, all breakout session participants should be encouraged to walk the room, examining each RFA Design Input Template. For any success factor on which they have experience, they should be encouraged to annotate the template either directly or through the attachment of a sticky note that could enhance the information already provided.

This should be a very dynamic activity and participants should be encouraged to move around the room, scanning all RFA Design Input templates.

At the end of the session, the facilitator should gather the participants, thank the group for their hard work and energy, and call out some measure of the success of the session (e.g., “We have identified xx priorities today from more than yy hundred at the start of the day – an achievement enabled only by your dedication to this process. Thank you for your engagement!”)

**End Products**

By the end of the session, each team should have completed up to three RFA Design Input Templates – one for each of the topics prioritized by the teams – and gathered input from the collective set of participants in the session. All templates should be collected by the facilitator and delivered to the Purdue team for further analysis and review.
### Figure 1. System Template

<table>
<thead>
<tr>
<th>SYSTEM ELEMENT</th>
<th>SYSTEM LINKAGES</th>
<th>RATIONALE</th>
<th>STAKEHOLDERS TO INVOLVE</th>
<th>GAP</th>
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<td>EQUIPMENT/ SUPPLIES</td>
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<td>WORKFORCE/ TALENT</td>
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<td>CAPITAL/ FINANCES</td>
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<td>PRACTICES</td>
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<td>AWARENESS</td>
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<td>ENABLING RESOURCES</td>
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<td>ADOPTION/HABIT CONVERSION</td>
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<td>MEASUREMENTS AND EVALUATIONS</td>
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<td>SUSTAINABILITY</td>
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<td>RESILIENCE</td>
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</table>
Tips for Facilitators:
- Encourage participants to take ownership of the work products and activity deliverables. The facilitator should refrain from being a scribe.
- Encourage participants to use the templates to guide their work
- Encourage participants to convey their knowledge and experience – this is a key input for our collective success
- Encourage capture of both positive and negative case inputs that may help focus an RFA

Contacts for more information:
During the session three members of the Purdue Innovation Studies Program will be on-site to help in guiding the teams and/or answer questions: Prof. Joe Sinfield, Romika Roshan Kotian, and Maggie Busse.

In the interim, if you have any questions related to the CIA process or facilitation of the session feel free to contact the Innovation Science team at innovation@purdue.edu

Figure 2. RFA Design Input Template
GLOSSARY

**RFA Design Input Template**: A large-format printed document used to record the participant inputs on 8 key areas of information that can inform the design of a robust and focused Request for Applications to address the priority success factors identified in the CIA working session.

**System Template**: A large-format printed document used to record the success factor priorities and related dependencies that a team believes warrant research based effort.

**Success Factor**: Any of literally hundreds of resources, relationships, roles, or actions that likely must be in place to enable a functioning system capable of achieving desirable outcomes related to a sector.
FREQUENTLY ASKED QUESTIONS

General Facilitation Questions

1. What must I do as a Facilitator?
   Ans. Facilitation is the process of enabling teams of people to collaborate in a cooperative manner to help them achieve their goal. You should move around the room and interact with participants to make sure all the teams are collaboratively progressing on the assigned task according to the provided timeline. Additionally, you will help any teams that are uncertain about how to execute certain steps of the activities.

   Below are some tips to help you with this process.

   Dos:
   - Do come prepared for the session by completing all required pre-work.
   - Do encourage participants to take turns voicing their opinions and comments along with listening to other participants’ thoughts and views.
   - Do encourage participants to use the provided templates to guide their work.

   Don’ts:
   - Don’t participate in or contribute to a team’s brainstorming process for the activity.
   - Don’t get side-tracked into long conversations with individuals or teams.

2. How should I (facilitator) prepare myself for the RFA Design Input session?
   Ans. Read this guide in its entirety and complete all tasks listed in the ‘Facilitator’s Pre-workshop Preparation’ section of the Facilitator’s Guide. Contact innovation@purdue.edu with questions you have about the facilitation before the session.

3. What should I (facilitator) do if there are participants who are not actively involved in discussion?
   Ans. These participants may be identified as the ones sitting quietly, on their phones or working alone. Ease these individuals into the process. Give them an opportunity to share their thoughts and ideas with their team by asking them what they think.

4. How do I (facilitator) help a table that is finding it difficult to follow the process?
   Ans. Start by asking the participants at the table to describe the step that they find difficult. Next ask them to describe what they think a solution might be. If what they describe aligns with the process they are required to follow, encourage them to implement their ideas. If not, guide them to their pre-read documents and explain what they need to do.

5. What should I (facilitator) do if a table finishes early?
   Ans. Request that the table summarize their work to you so you can assess if they have performed the required tasks as per instructions.
• If not, request that they iterate on the parts that they can improve.
• If they are indeed done with required deliverables encourage them to help other teams.

6. How should I (facilitator) manage conflict of opinion? / How should I (facilitator) help a team that is finding difficulty in reaching consensus?
   Ans. Discussions and debates on differences of opinion are an integral part of this session. Participants are required to reason with each other to complete the activity. If the debates go beyond appropriate limits, contact one of the managing facilitators (from the Purdue team) so that they can address the situation.

RFA Template Questions
1. What should be written in the RFA Design Input Template?
   Ans. The section on Activity Details, Part 2 of your Facilitator’s Guide provides detailed information on completing the system template.

2. Can participants brainstorm/ use a different method to fill the RFA Design Input Template than recommended?
   Ans. Participants should be encouraged to utilize the proposed approach to ensure that all needed RFA Design Input details are captured. The procedure and template for the activity is designed to allow participants to understand the full scope of success factors that shape an RFA.

3. Can a participant draw from their experience to inform inputs to inform the RFA Design Input Template?
   Ans. Yes, and this should be encouraged, although input that is anecdotal should be noted as such.

4. Can people send in more thoughts to shape RFAs after the working session?
   Ans. Additions to the RFA Design Input process are always welcome. However, participants should recognize that only inputs gathered at the session will have timely influence on the request for applications (RFAs) that will result from the workshop, so providing inputs during this session is ideal.

General Session Related Queries
1. What expectations should facilitators and participants have for the session?
   Ans. The RFA Design Input session will be an active working session which involves collaboration between people from various backgrounds and disciplines.

2. How will session outputs be used?
   Ans. Completed RFA Design Input Templates will be used as guides to inform the Requests For Applications that will be developed and launched following the R4D event.
3. **What if a team is running out of time?**
   Ans. Monitor the teams to make sure they follow the provided timeline to prevent this from taking place. If at the end of any part of the session, you find teams that have not made sufficient progress, request the teams break up work to ensure capture of as many inputs to the RFA Design Input Template as possible in the time available.

4. **Will participants remain in the same teams as in the CIA session?**
   Ans. Yes, for the first two parts of the RFA Design Input session.

5. **On what basis are the teams formed?**
   Ans. Teams are pre-assigned to participants to ensure that perspectives from different disciplines are present at each table.

6. **What if participants would like to consult local stakeholders to obtain input from them?**
   Ans. Encourage them to do so if someone with relevant background is present at the session. Note also that each participant in a given breakout session will have a chance to comment on all RFA Design Input Templates during the third part of the activity.

7. **What materials will be provided to participants?**
   Ans. All materials listed in the attached checklist will be provided.

8. **How will funds be allocated toward priorities after the session?**
   Ans. Funds will be allocated through rigorous review of applications to the Request for Application (RFA) process that is being deployed by the LASER PULSE consortium.

9. **Can participants leave the room and work elsewhere?**
   Ans. No. The working session is designed to be a collaborative and interactive session that requires in-person engagement.
<table>
<thead>
<tr>
<th><strong>1 - PROBLEM DEFINITION</strong></th>
<th><strong>3 - TECHNICAL FOUNDATIONS</strong></th>
<th><strong>5 - CROSS-CUTTING ISSUES</strong></th>
<th><strong>7 - IMPACT POTENTIAL</strong></th>
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<tr>
<td>PRIORITY TO BE SOLVED WITH RESEARCH</td>
<td>TECHNICAL FIELDS/DOMAINS TO LEAD RESEARCH</td>
<td>E.G., GENDER EQUALITY, CONFLICT RESOLUTION</td>
<td>TIME TO IMPACT</td>
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<td>MOTIVATION</td>
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<td>NATURE OF REQUIRED EFFORT</td>
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<th><strong>2 - SCOPE</strong></th>
<th><strong>4 - WORK-TO-DATE</strong></th>
<th><strong>6 - POTENTIAL CONTACTS/ COLLABORATORS/PARTNERS</strong></th>
<th><strong>8 - POTENTIAL RESEARCH INITIATIVES</strong></th>
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<td>TARGET POPULATION</td>
<td>PAST/ONGOING EFFORTS/RESEARCH</td>
<td>SPECIFIC ENTITIES THAT CAN ENHANCE IMPACT</td>
<td>E.G., DEVELOPMENT OR APPLICATION INITIATIVES, DATA COLLECTION &amp; ANALYSIS, LITERATURE REVIEW, CASE STUDIES</td>
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<td>GEOGRAPHIC LOCATION</td>
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*Developed by Joseph V. Sinfield, Romika R. Koster, Margaret M. Buser, Purdue University, Innovation and Leadership Studies Program; © 2019*