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Invertir en la población rural

Estrategia de Tecnología de la Información y las Comunicaciones para el Desarrollo

Nota para los representantes en la Junta Ejecutiva

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Acrónimos y siglas

COSOP	programa sobre oportunidades estratégicas nacionales
IOE	Oficina de Evaluación Independiente del FIDA
PMA	Programa Mundial de Alimentos
SyE	seguimiento y evaluación
TIC	tecnología de la información y las comunicaciones

I. Introducción

1. El concepto de tecnología de la información y las comunicaciones para el desarrollo (TIC para el desarrollo) ha ido cobrando cada vez más importancia gracias a los rápidos avances logrados en el ámbito tecnológico y a los indicios crecientes de su capacidad para entrañar repercusiones profundas. En el Fondo, el concepto de TIC para el desarrollo hace referencia a la posibilidad de emplear la TIC con el objetivo de acelerar y ampliar el desarrollo social y económico.

2. En el ámbito de la agricultura, la TIC para el desarrollo podría contribuir a aumentar la productividad y los ingresos de los productores rurales, reforzar la resiliencia al cambio climático y mejorar el acceso a los mercados, así como la participación en ellos, sobre todo para la mayoría de los grupos marginados, como los jóvenes y las mujeres[1]. No obstante, no todos los pequeños productores rurales gozan del mismo acceso a la TIC, ni la emplean adecuadamente, en especial las productoras y los jóvenes empresarios de las zonas rurales. Por ejemplo, en 2017, tan solo el 30 % de los jóvenes de los países menos adelantados utilizaban Internet, frente al 94 % en los países desarrollados[2], y apenas el 25 % de los usuarios de las soluciones digitales agrícolas en África Subsahariana eran mujeres[3]. Es preciso acelerar los esfuerzos realizados para aprovechar el potencial de la TIC para el desarrollo en el ámbito de la agricultura y el desarrollo rural.

3. La Estrategia del Secretario General de las Naciones Unidas en materia de Nuevas Tecnologías[4] orienta el enfoque relativo al empleo de las tecnologías digitales a nivel de todo el sistema de las Naciones Unidas con miras a acelerar la consecución de los Objetivos de Desarrollo Sostenible (ODS). En la estrategia se señala la seguridad alimentaria como una esfera crítica que "es probable que se vea profundamente afectada por los adelantos tecnológicos y científicos", se prevé que los jóvenes desempeñarán una función destacada a ese respecto y se recomienda la creación de medidas específicas para solucionar los obstáculos afrontados por las mujeres, los pueblos indígenas, las poblaciones rurales y los demás grupos marginados. Del mismo modo, en la Declaración formulada en 2019 por los Ministros de Agricultura del Grupo de los 20 (G20), se hizo hincapié en el potencial de la digitalización para aumentar la producción y la productividad agrícolas, al tiempo que se mejora la sostenibilidad, el uso eficiente de los recursos, las oportunidades de empleo y emprendimiento y las condiciones de vida, principalmente en las zonas rurales[5].

4. En el Marco Estratégico del FIDA (2016-2025) se reconoce el papel central de la TIC en la promoción de la seguridad alimentaria y la transformación rural inclusiva y sostenible, y se aborda la incorporación de las nuevas tecnologías en la labor del Fondo[6]. Asimismo, se destaca que el FIDA aprovechará el aumento en la posesión de teléfonos móviles y *smartphones* para facilitar el acceso a la información sobre el mercado y a los productos y servicios financieros, así como a la información meteorológica a fin de mejorar la capacidad para predecir el cambio climático y adaptarse a él. La importancia de la TIC para el desarrollo en el fomento de la transformación rural se puso de relieve en el marco de las consultas relativas a la

[1] Lio, M. y Liu, M.C. (2006): ICT and agricultural productivity: evidence from cross-country data, *Agricultural Economics* 34(3), págs. 221 a 228; Banco Mundial (2017): ICT in agriculture (updated edition): Connecting smallholders to knowledge, networks, and institutions, Washington, D. C.
[2] Estadísticas de las TIC, Ginebra: https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf
[3] Digitalisation of African Agriculture Report 2018-2019, Wageningen: CTA (2019).
[4] Naciones Unidas (2018): Estrategia del Secretario General en materia de Nuevas Tecnologías.
[5] G20 (2019): Declaración de los Ministros de Agricultura (2019; proyecto preliminar); Comunicado del Global Forum for Food and Agriculture, Agriculture goes digital – smart solutions for future farming. Se puede consultar en: https://www.bmel.de/SharedDocs/Downloads/Landwirtschaft/Welternaehrung/GFFA_2019_Kommunique_EN.pdf;jsessionid=E7B6C10067566DE6321BA211342D8597.1_cid288?__blob=publicationFile.
[6] Marco Estratégico del FIDA (2016-2025): Favorecer una transformación rural inclusiva y sostenible (2016).

Undécima Reposición de los Recursos del FIDA (FIDA11)[7], en las que el Fondo se comprometió a elaborar una estrategia de TIC para el desarrollo, que luego presentaría a la Junta Ejecutiva para su aprobación. Esa estrategia resulta muy oportuna, en cuanto que el FIDA aspira a crecer de forma considerable de aquí a 2030 con miras a lograr un mayor impacto a través de la diversificación de su cartera.

5. El objetivo de la estrategia de TIC para el desarrollo radica en dotar al Fondo de un marco que aproveche la TIC a fin de aumentar el impacto en el desarrollo y mejorar las condiciones económicas y sociales de las poblaciones rurales aumentando la productividad agrícola, la participación en los mercados y la resiliencia de los hogares. Para ello, la estrategia propone cuatro esferas de actividad, a saber: i) la promoción de la incorporación, adaptable a distintas escalas, de soluciones de TIC para el desarrollo; ii) el fortalecimiento de las asociaciones en materia de TIC para el desarrollo; iii) el fomento de la gestión y el intercambio de los conocimientos sobre TIC para el desarrollo, y iv) el aumento de la sensibilización, la capacidad y el liderazgo en materia de TIC para el desarrollo a nivel interno. Si bien esas esferas de actividad pueden entrañar el perfeccionamiento de determinadas capacidades relativas a la TIC con objeto de mejorar la calidad, la eficiencia y la eficacia de la capacidad de ejecución del Fondo, el empleo de la TIC para apoyar las principales actividades del FIDA no entra dentro del ámbito de la estrategia (véase el recuadro 1).

6. La estrategia abarca el período comprendido entre 2020 y 2030, y está previsto realizar un examen de mitad de período en 2025. La creación de la estrategia se basó en i) el posible empleo de la TIC en pro del desarrollo agrícola y rural a pequeña escala, de conformidad con los objetivos de las Naciones Unidas, el G20 y los asociados para el desarrollo (véase el apéndice VI); ii) las enseñanzas extraídas de las experiencias del FIDA y los asociados para el desarrollo, y iii) las consultas celebradas con los especialistas técnicos y los directores en los países del FIDA (véase el apéndice VI), así como con actores del sector privado.

Recuadro 1
Diferencias entre las estrategias de TIC, TIC para el desarrollo e innovación

Una estrategia de TIC define la manera en que una organización utiliza la tecnología de la información y las comunicaciones para crear un valor sostenible, maximizando los beneficios obtenidos de las inversiones en TIC.

La estrategia de TIC para el desarrollo orienta a una organización en lo referente a la aplicación de la TIC para lograr resultados de desarrollo. En el presente documento, la TIC para el desarrollo hace referencia al conjunto amplio de casos de uso y herramientas digitales, que en la bibliografía conexa en ocasiones se denominan "medios digitales para el desarrollo" o "desarrollo digital".

Una estrategia de innovación tiene por objeto ayudar a una organización a desarrollar mejores soluciones adoptando, adaptando o generando nuevas ideas, enfoques, prácticas, productos, servicios o tecnologías.

II. La experiencia del FIDA hasta la fecha en materia de TIC para el desarrollo

7. La experiencia del FIDA en materia de TIC para el desarrollo se basa en las conclusiones extraídas de i) un ejercicio de examen interno realizado en 2018 con objeto de analizar el uso de la TIC en el diseño, la ejecución, el seguimiento y la evaluación (SyE) del programa de préstamos y donaciones del Fondo; ii) un estudio teórico de los documentos de los proyectos del Fondo, y iii) las consultas celebradas con el personal del Fondo en la Sede y las oficinas en los países. A continuación se exponen algunos de los aspectos destacables de la experiencia del FIDA hasta la fecha:

[7] FIDA (2018): Informe de la Consulta sobre la Undécima Reposición de los Recursos del FIDA: Que nadie se quede atrás: la función del FIDA en la Agenda 2030.

- En la mayoría de las estrategias y los documentos de orientación del FIDA elaborados durante el anterior decenio (incluidas la Estrategia para la Colaboración con el Sector Privado, la Estrategia y Plan de Acción sobre el Medio Ambiente y el Cambio Climático, la Política en materia de Financiación Rural y el Plan de Acción para los Jóvenes del Medio Rural) se recomienda aumentar el uso

  de la TIC a favor del desarrollo agrícola y la transformación rural. No obstante, esas recomendaciones no se han traducido en un aumento notable del número de proyectos del FIDA que emplean la TIC para el desarrollo (véase el apéndice IV).

- A pesar de los resultados positivos logrados en algunos proyectos (véanse el recuadro 2 y el apéndice II), la mayor parte de las iniciativas de TIC para el desarrollo se han financiado con donaciones destinadas a intervenciones independientes que no estaban ligadas al programa de préstamos y donaciones, y no se han repetido ni reproducido a mayor escala.

- Si bien la incorporación de la TIC para el desarrollo en las operaciones del FIDA ha sido limitada y *ad hoc*, hay excepciones notables en las esferas de la inclusión financiera digital, las remesas y la tecnología geoespacial (véase el apéndice II).

- Si bien en el FIDA cada vez se emplea más la TIC para facilitar las actividades de SyE (véase el apéndice II) y fundamentar las fases de diseño de los proyectos, no existe ningún marco para que las intervenciones basadas en datos amplíen el impacto del FIDA en materia de desarrollo. Entre los obstáculos que dificultan el uso sistemático de esas herramientas se encuentran el uso de herramientas independientes para las actividades de SyE de los programas y la naturaleza aislada de los datos generados por los sistemas a nivel institucional. Además, la evaluación del impacto no abarca la divulgación de los resultados y las enseñanzas extraídas, ni tampoco hay funcionarios encargados de incluir soluciones de TIC para el desarrollo en las fases de diseño, seguimiento, valoración y evaluación del impacto de los proyectos.

- De las diez propuestas ganadoras de la iniciativa del FIDA para la promoción de la innovación de 2019, siete aprovechaban de forma directa la TIC para el desarrollo (véase el apéndice II). Esas cifras sugieren una mayor voluntad del Fondo de incorporar, probar y desarrollar soluciones de TIC.

Recuadro 2
Aprovechamiento de la TIC para el desarrollo en la promoción del empoderamiento de las mujeres y los jóvenes y la agricultura climáticamente inteligente

Entre 2015 y 2018, el Fondo se asoció con Farm Radio International en la República Unida de Tanzanía, en el marco de un proyecto destinado a la ampliación de escala de la tecnología en la agricultura a través de la difusión de conocimientos (UPTAKE), para utilizar la radio rural y los teléfonos móviles con el objetivo de promover la incorporación de las tecnologías agrícolas entre los pequeños productores rurales. Se enviaron más de 6 millones de mensajes de texto a pequeños agricultores acerca de cuestiones relacionadas con los frijoles, el maíz, las papas irlandesas y la yuca. Aproximadamente 760 000 agricultoras recibieron información, a través de la radio o por mensajes de texto, acerca de las tecnologías específicas para esos cultivos. Unas 55 000 agricultoras, procedentes de ocho regiones cubiertas por las transmisiones de radio y los servicios de telefonía móvil, informaron de haber aumentado el uso de una o más de las tecnologías en cuestión. Además, el proyecto estableció canales de transmisión específicos para garantizar que las mujeres pudieran expresar su opinión sobre las cuestiones que les afectaban. Por ejemplo, se creó un programa de radio llamado "Her Farm Radio" con el fin de recabar comentarios de los grupos de agricultoras.

En Guatemala, la Asociación Nacional del Café (Anacafé) puso en marcha un proyecto financiado con una donación del FIDA que concluyó en 2018. Dicho proyecto amplió el abanico de servicios prestados para facilitar una producción de café climáticamente inteligente. Se adoptaron diversas medidas de TIC con objeto de aumentar la eficacia y la precisión en la recogida de datos en las explotaciones de café. Los aviones y satélites tradicionales, que tomaban imágenes aéreas costosas y de baja resolución, fueron sustituidos por drones. Se instalaron registradores de datos a fin de generar alertas en tiempo real y aumentar la resiliencia de los pequeños agricultores al cambio climático. Además, se creó un sistema virtual de información a nivel nacional, que centralizó la información generada por Anacafé y amplió la cobertura de sus servicios, en especial los prestados a los pequeños agricultores. El proyecto permitió que 124 954 pequeños productores de café hicieran frente a los efectos del cambio climático, como las plagas de roya y la sequía. De ese modo, el uso de esa herramienta se amplió en el plano nacional.

A través del Fondo de Financiación para Remesas, en 2017 el FIDA se asoció con la plataforma de microfinanciación Babyloan a fin de crear un espacio específico, a través del cual los ciudadanos malienses residentes en Francia podían invertir en proyectos puestos en marcha por jóvenes de las zonas rurales de Malí. En enero de 2019, 167 jóvenes empresarios habían reunido más de EUR 100 000 de inversores particulares. La segunda fase del proyecto tiene por objeto ampliar esas actividades tanto en Malí como en otros países donde residen inmigrantes malienses.

III. Enseñanzas extraídas de las experiencias del FIDA y los asociados para el desarrollo

8. De la experiencia del FIDA en materia de TIC para el desarrollo, incluida la labor de la Oficina de Evaluación Independiente del FIDA (IOE)[8], se pueden extraer enseñanzas valiosas, al igual que de la experiencia de los asociados para el desarrollo, los Gobiernos y el sector privado. Se han puesto de relieve las siguientes enseñanzas:

- **Para respaldar la incorporación de la TIC para el desarrollo en la labor de todo el FIDA se precisan sistemas, herramientas y liderazgo a nivel interno**. La falta de herramientas y de una estrategia de TIC para el desarrollo a nivel institucional ha conllevado que el personal carezca de instrumentos y orientaciones claras para el empleo sistemático de la TIC en todo el programa de préstamos y donaciones a fin de aumentar su impacto. Las experiencias de otros asociados para el desarrollo[9] también sugieren que el liderazgo es uno de los factores más importantes del apoyo a la transformación digital de las organizaciones humanitarias y de desarrollo. Un liderazgo firme en materia de TIC para el desarrollo también contribuye a acabar con la compartimentación institucional al conectar las distintas capacidades digitales que están repartidas por toda la organización. Por último, permite reconocer y premiar a los promotores de la TIC para el desarrollo.

[8] IOE (2017): Conferencia Internacional sobre Tecnologías de la Información y las Comunicaciones aplicadas a la Evaluación (ICT4Eval): Uso de enfoques innovadores para la evaluación en materia de desarrollo. 6 y 7 de junio de 2017. Roma.
[9] Catholic Relief Services, Health Communication Capacity Collaborative, Microsoft, NetHope, Organizational guide to ICT4D: Leveraging technology for international development, NetHope (2017).

- **Las asociaciones bien diseñadas son eficaces para ampliar y mejorar los resultados**[10]. La búsqueda de complementariedades en la capacidad de los distintos asociados, así como en sus experiencias en materia de TIC para el desarrollo, es fundamental para multiplicar el impacto de la labor del FIDA de una forma eficaz en cuanto a los costos. Por ejemplo, una asociación con Intel en Camboya permitió el diseño, la puesta a prueba y la aplicación de servicios de asesoramiento integrados y basados en la TIC para los pequeños productores. Para que esas asociaciones den resultados, la experiencia[11] ha demostrado la importancia de i) contar con el interés y el compromiso de una cantidad considerable de funcionarios; ii) incluir de forma explícita la sostenibilidad y la escalabilidad de las iniciativas de TIC para el desarrollo en los acuerdos de asociación, y iii) garantizar el apoyo en el plano nacional, también en lo referente a la infraestructura y las capacidades de los asociados.
- **El intercambio de conocimientos en materia de TIC para el desarrollo fomenta su incorporación**. Cuando se cuenta con recursos limitados, la capacidad interna puede desarrollarse a través de promotores internos que fomenten el intercambio de información. El grupo geoespacial del FIDA y su Día Geoespacial conexo ejemplifican la manera en que el intercambio de conocimientos puede aumentar el impacto y los beneficios de las asociaciones del FIDA (por ejemplo, con organizaciones como la Agencia Espacial Europea y el Programa Mundial de Alimentos (PMA)).
- **Para que las iniciativas en materia de TIC para el desarrollo logren resultados positivos, deben estar centradas en las personas**[12]. La experiencia demuestra que las iniciativas exitosas en materia de TIC para el desarrollo tienen en cuenta las necesidades personales, sociales y económicas de los beneficiarios, así como sus aptitudes y solicitudes de capacitación[13]. Además, las organizaciones de desarrollo son responsables de la incorporación sistemática de cuestiones como la privacidad, la ética y la inclusividad en las intervenciones de TIC para el desarrollo, en particular cuando trabajan con grupos vulnerables y marginados.

IV. Marco estratégico del FIDA en materia de TIC para el desarrollo

4.1. Visión y teoría del cambio

9. Para 2030, la visión del FIDA radica en crear sociedades rurales en las que las personas gocen de un acceso inclusivo a servicios y soluciones basados en la TIC para lograr la seguridad alimentaria y la prosperidad sin dejar a nadie atrás. En el gráfico 1 figura la teoría del cambio subyacente.

[10] En el apéndice III figuran los resultados de tres asociaciones establecidas por el FIDA en materia de TIC para el desarrollo, que continúan a día de hoy.
[11] Unwin, T, Multistakeholder partnerships, *International Encyclopedia of Digital Communication and Society* (2015): págs. 1 a 10.
[12] IOE, "Proceedings of the ICT4Eval International Conference: Using innovative approaches to development evaluation". Roma: FIDA (2017).
[13] Mathison, S., ICT for poverty reduction: Myths, realities and development implications. En: Weigel, G. y Waldburger, D., ICT4D-connecting people for a better world: Lessons, innovations and perspectives of information and communication technologies in development (2004).

Gráfico 1

Teoría del cambio de la estrategia del FIDA en materia de TIC para el desarrollo

4.2. Enfoque y esferas de actividad propuestos

10. La estrategia se ajusta al Marco Estratégico del FIDA (2016-2025), ya que la TIC para el desarrollo sirve para apoyar la consecución de los Objetivos Estratégicos y los resultados de desarrollo. La estrategia de TIC para el desarrollo tiene por objeto contribuir al impacto del FIDA a través de lo siguiente:

- el incremento de las capacidades productivas de la población rural pobre;
- el aumento los beneficios que obtiene la población rural pobre al participar en los mercados, y
- el fortalecimiento de la sostenibilidad ambiental y la resiliencia al cambio climático de las actividades económicas de la población rural pobre.

11. Para ello, la estrategia propone cuatro esferas de actividad, a saber:

12. **Esfera de actividad 1. Incorporación, adaptable a distintas escalas, de las soluciones de TIC para el desarrollo**. Esta esfera tiene el objetivo de aumentar el uso y la incorporación de la TIC para el desarrollo en las operaciones del FIDA. Al seleccionar las tecnologías, es preciso adoptar un enfoque flexible debido a la rapidez con que se producen los cambios tecnológicos. Aun así, las intervenciones de los programas del FIDA en materia de TIC para el desarrollo deben promover mejoras en el acceso a la información (sobre todo la meteorológica y la referente a los mercados), los servicios y la inclusión financiera. Esas tres esferas temáticas se seleccionaron sobre la base de i) la armonización con el Marco Estratégico del FIDA y su visión de crecimiento; ii) la ventaja comparativa del FIDA y las prioridades intersectoriales (relativas a las mujeres, el clima, la nutrición y los jóvenes), y iii) la labor realizada anteriormente por el FIDA y los asociados para el desarrollo empleando la TIC para el desarrollo.

13. Las actividades previstas en esta esfera de actividad son las siguientes:

- evaluar los posibles puntos de entrada de la TIC para el desarrollo durante la fase de diseño de los proyectos y programas sobre oportunidades estratégicas nacionales (COSOP), haciendo especial hincapié en la búsqueda de soluciones que promuevan las prioridades intersectoriales del FIDA relativas a los jóvenes, las mujeres, el clima y la nutrición;
- ayudar a los países a determinar los obstáculos que impiden a los pequeños productores y a los hogares de las zonas rurales usar las soluciones facilitadas por la TIC para aumentar la productividad, la resiliencia al cambio climático, los beneficios comerciales y la inclusión financiera y diseñar estrategias adecuadas para superarlos;
- aprovechar el uso de las tecnologías geoespaciales y de otro tipo ya existentes (véase el recuadro 3) para mejorar la focalización geográfica y de los beneficiarios en el diseño de los COSOP y los proyectos, brindar información útil para la focalización de las inversiones del FIDA y hacer un seguimiento del impacto, y
- una vez que se hayan creado capacidad y experiencia suficientes en materia de TIC para el desarrollo, participar en diálogos sobre políticas con los Gobiernos y establecer asociaciones encaminadas a promover la TIC para el desarrollo en pro de la transformación rural sostenible.

Recuadro 3
Potencial para reproducir a mayor escala el uso de datos geoespaciales en las operaciones del FIDA

La focalización espacial es fundamental para la labor del FIDA, incluidas las evaluaciones de la vulnerabilidad, la seguridad alimentaria y el acceso a los mercados. No obstante, la calidad de la información varía de un país a otro. Para superar ese desafío, se pueden adoptar las siguientes medidas: i) crear un conjunto mínimo de datos esenciales para cada esfera; ii) agrupar los datos sobre distintas cuestiones de forma que resulte útil para los equipos encargados de diseñar los COSOP, y iii) divulgar los datos a las oficinas en los países a fin de entablar debates con otros colegas del FIDA o con los Gobiernos.

Las nuevas directrices para los COSOP y las plantillas de los Procedimientos del FIDA para la Evaluación Social, Ambiental y Climática presentan datos desglosados espacialmente. El nuevo formato electrónico de los COSOP y los informes sobre el diseño de los proyectos permite incluir enlaces integrados a mapas, gráficos, estadísticas asociadas y cuadros de texto de GeoNode. Asimismo, algunos conjuntos de datos se pueden actualizar automáticamente.

El análisis geoespacial puede servir para fundamentar las inversiones del FIDA, en especial si se combina con una teoría del cambio sólida y adaptada al contexto. Esta debería de ser una de las aplicaciones prioritarias para el Fondo.

14. **Esfera de actividad 2. Fortalecimiento de las asociaciones en materia de TIC para el desarrollo**. Las asociaciones son esenciales para que el FIDA y los Gobiernos amplíen la escala, el alcance, el impacto y la financiación de las iniciativas de desarrollo rural (véase el apéndice III). El enfoque del FIDA para las asociaciones debe ser lo suficientemente flexible para abarcar diferentes tipos de colaboración, como asociaciones dirigidas por los Gobiernos y asociaciones entre los sectores público y privado, inversiones conjuntas e iniciativas respaldadas por las comunidades. Asimismo, debería abarcar una gran variedad de asociaciones con i) proveedores de TIC de todo el mundo; ii) proveedores nacionales y regionales, incluidos actores especializados de los ámbitos relativos a la tecnología financiera y la agricultura digital, y iii) asociados para el desarrollo que aborden activamente las deficiencias relativas a la infraestructura de TIC, una condición necesaria para lograr resultados positivos en cualquier intervención de TIC para el desarrollo.

15. Las actividades previstas en esta esfera de actividad son las siguientes:

- promover las asociaciones (y reforzar las existentes) con miras a i) fomentar la provisión de soluciones de TIC para el desarrollo a los Gobiernos y los beneficiarios, y ii) consolidar la propia capacidad del FIDA, intensificando los esfuerzos para promover asociaciones que contribuyan a la inclusión de los jóvenes y las mujeres;
- utilizar los conocimientos especializados del FIDA y su poder de convocatoria para alentar diálogos y colaboraciones más sólidos entre las partes interesadas del ámbito de la agricultura digital, desempeñando un papel activo en el diseño de iniciativas de TIC para el desarrollo a nivel mundial y regional, como el Consejo Digital Internacional para la Alimentación y a Agricultura;
- establecer asociaciones que respalden la actualización y ampliación de la capacidad del FIDA para recopilar, tramitar y analizar los datos a fin de brindar información y mejorar la eficiencia en el diseño de las intervenciones;
- estrechar la colaboración con los demás organismos con sede en Roma en lo que respecta a la TIC para el desarrollo, sobre la base de su complementariedad (por ejemplo, en el diseño de estrategias y proyectos nacionales, los procesos de seguimiento y evaluación y las evaluaciones del impacto a través del uso de tecnologías geoespaciales), y ampliar el intercambio de datos, productos, servicios, capacidades analíticas y enseñanzas extraídas, y

- basarse en asociaciones como la establecida con los Centros para el Aprendizaje en Evaluación y Resultados a fin de crear el Programa de Seguimiento y Evaluación Rurales, encaminado a capacitar y certificar a los funcionarios gubernamentales que colaboran con el FIDA, y reforzar las capacidades de TIC para el desarrollo de los programas del FIDA en los países para la medición, el SyE de los resultados de desarrollo[14].

16. **Esfera de actividad 3. Fomento de la gestión y el intercambio de conocimientos en materia de TIC para el desarrollo**. Esta esfera de actividad tiene el objetivo de ayudar al personal del FIDA que trabaja en el diseño y la ejecución del programa de préstamos y donaciones para lograr mejores resultados mediante i) la promoción de una mayor precisión y puntualidad en la recopilación y el análisis de los datos relacionados con el programa de préstamos y donaciones a fin de fundamentar las sucesivas fases de diseño y ejecución, y ii) el aprovechamiento de los conocimientos en materia de TIC para el desarrollo facilitados por las partes interesadas. Para alcanzar ese objetivo, es preciso integrar la TIC para el desarrollo en los sistemas existentes de gestión de los conocimientos del FIDA. En el proceso, esta esfera de actividad aumentará la disponibilidad de los productos de conocimiento y los datos relativos a la TIC para el desarrollo en la agricultura y promoverá el intercambio de conocimientos entre pares.

17. Las actividades previstas en esta esfera de actividad son las siguientes:

- promover la gestión sistemática e integrada de los datos y los resultados de los proyectos a fin de fundamentar el diseño y la ejecución de las sucesivas intervenciones;
- aumentar el uso de la tecnología en las fases de SyE y evaluación del impacto mediante i) el aumento y la mejora de los conjuntos de datos utilizados en la actualidad para esas actividades; ii) la mayor difusión de esos datos (la inteligencia artificial y las ciencias relativas a los datos son fundamentales para determinar las tendencias e impulsar los análisis predictivos);
- elaborar estudios de caso, enseñanzas extraídas, juegos de herramientas y plantillas relacionados con el uso de la TIC para el desarrollo en las operaciones del FIDA, y recopilarlos, junto con otros recursos externos, en un repositorio de TIC para el desarrollo a nivel de todo el FIDA;
- promover los conocimientos y suplir las carencias de datos relativos al empleo de la TIC en la agricultura y las zonas rurales, entre otros medios, creando productos de conocimiento;
- organizar eventos de intercambio de conocimientos que promuevan los intercambios entre pares de las enseñanzas extraídas en el marco de los proyectos de TIC para el desarrollo;
- promover una comunidad de práctica específica sobre la TIC para el desarrollo que incluya a la sede del FIDA, los centros subregionales, los centros de excelencia para la cooperación Sur-Sur y la cooperación triangular y el intercambio de conocimientos y a expertos externos, y
- aprovechar la labor en curso de la IOE y la División de Investigación y Evaluación del Impacto del FIDA para ampliar el empleo de herramientas basadas en la TIC para las fases de SyE y evaluación del impacto, y crear un conjunto de herramientas comunes que recopilen datos sobre los resultados iniciales, de mitad de período, finales y anuales.

[14] Bangladesh: Proyecto de Promoción de la Comercialización y las Empresas Agropecuarias. Informe de supervisión del proyecto: informe principal y apéndices, Roma: FIDA (2017a).

18. **Esfera de actividad 4. Aumento de la sensibilización, la capacidad y el liderazgo en materia de TIC para el desarrollo a nivel interno**. La sensibilización y la creación de capacidad son fundamentales para acelerar la incorporación de la TIC para el desarrollo en la labor del FIDA. A fin de aumentar la sensibilización del personal que aplica el programa de préstamos y donaciones, es esencial brindar capacitación y orientaciones sobre el empleo y el potencial de las soluciones de TIC para el desarrollo. Asimismo, es igualmente importante garantizar la coordinación entre las distintas divisiones del Fondo a través de un liderazgo claro, a fin de evitar la duplicación de esfuerzos y maximizar las sinergias. Las actividades previstas en esta esferas de actividad son las siguientes:

- diseñar y ejecutar un programa de capacitación para desarrollar los conocimientos especializados y las competencias del personal del FIDA en materia de TIC para el desarrollo[15];
- contratar a expertos y crear una lista de consultores para que contribuyan al diseño de las intervenciones de TIC para el desarrollo en el marco del programa de préstamos y donaciones del FIDA;
- organizar presentaciones y actividades de creación de capacidad durante las sesiones de planificación regionales y a nivel de los centros, así como talleres regionales de ejecución en los que se destaquen ejemplos satisfactorios y oportunidades para emprender intervenciones tecnológicas en cada región;
- aumentar la sensibilización a nivel interno a través de iniciativas de comunicación interna sobre el potencial de la TIC para el desarrollo para ampliar el impacto, mejorar la eficacia y aumentar el compromiso del personal a ese respecto mediante actividades internas como *hackathons*, *bootcamps*, almuerzos de trabajo y comunicaciones de otro tipo;
- diseñar incentivos para que el personal del FIDA promueva la TIC para el desarrollo en el programa de préstamos y donaciones del Fondo a través de indicadores del desempeño, recursos destinados específicamente a la TIC para el desarrollo o premios de reconocimiento interno;
- establecer un mecanismo de coordinación interna de las iniciativas de TIC para el desarrollo a fin de optimizar el uso de los recursos a disposición del personal del FIDA, y
- establecer funcionarios de contacto en las divisiones, que se encarguen de aplicar las estrategias y políticas del FIDA (como la Estrategia para la Colaboración con el Sector Privado, la Estrategia de Gestión de los Conocimientos y la Estrategia y Plan de Acción sobre el Medio Ambiente y el Cambio Climático), a fin de determinar y establecer los puntos de entrada para implantar la agenda relativa a la TIC para el desarrollo (véase el apéndice IV para un examen de los puntos de entrada).

4.3. Modalidades de ejecución propuestas

19. Habida cuenta del carácter multidisciplinario de la TIC para el desarrollo, se formará un equipo de tareas interdepartamental para i) asegurar la ejecución y la coordinación interna de las actividades relativas a la TIC para el desarrollo, y ii) maximizar las sinergias a través de los esfuerzos en curso. El equipo de tareas estará compuesto por personal de la División de Tecnología de la Información y las Comunicaciones, las cinco divisiones regionales, la División de Producción

[15] Actualmente, el FIDA está llevando a cabo una evaluación exhaustiva de las aptitudes a fin de determinar las carencias que es preciso subsanar para alcanzar su visión de crecimiento para 2030, y la TIC para el desarrollo es una esfera en la que dichas deficiencias quedarán patentes.

Sostenible, Mercados e Instituciones, la División de Medio Ambiente, Clima, Género e Inclusión Social, la División de Investigación y Evaluación del Impacto, la División de Participación Activa, Asociaciones y Movilización de Recursos a Nivel Mundial y la Unidad de Cambio, Ejecución e Innovación.

20. Se adoptará un enfoque modular a fin de acelerar y ampliar el impacto de la estrategia de TIC para el desarrollo a través de inversiones en recursos humanos, la creación de capacidad, el intercambio de conocimientos, el acceso a soluciones de TIC para el desarrollo que sustenten el programa de préstamos y donaciones y la colaboración interna. Las actividades del equipo de tareas estarán financiadas con cargo al presupuesto existente del Fondo, al tiempo que se buscarán recursos adicionales a través de las asociaciones existentes y de asociaciones nuevas. El FIDA también financiará un puesto equivalente a tiempo completo y los costos operacionales conexos para facilitar la ejecución de la estrategia. Las actividades de sensibilización y creación de capacidad de los Gobiernos y los beneficiarios (también en las fases de SyE y evaluación del impacto) se financiarán mediante su incorporación al programa de préstamos y donaciones del FIDA y a las intervenciones del sector privado y mediante la movilización de recursos a través de asociaciones.

4.4 Principios de ejecución

21. Los nueve Principios para el Desarrollo Digital[16], creados en consulta con otros organismos de las Naciones Unidas y bancos multilaterales de desarrollo para promover la inclusión de la TIC en las iniciativas de desarrollo internacional, serán la principal referencia del FIDA en lo que respecta a las actividades de TIC para el desarrollo. La ejecución de las actividades de TIC para el desarrollo en el FIDA se basará en cinco criterios principales, a saber:

i) **Armonización con el mandato y las estrategias institucionales del FIDA**. La estrategia de TIC para el desarrollo se integrará plenamente en las prioridades, estrategias, políticas y planes de acción institucionales del FIDA. Su ejecución se basará en la labor que realizan actualmente los funcionarios del Fondo, quienes ya utilizan métodos y herramientas de TIC para el desarrollo. El objetivo último es que el Fondo saque partido a la TIC para el desarrollo en todos sus proyectos y programas en los países a fin de acelerar y reforzar los resultados obtenidos.

ii) **Selección de la TIC sobre la base del desarrollo**. La TIC para el desarrollo debe basarse en el impacto, y no en la tecnología, y se integrará en los proyectos del FIDA encaminados a respaldar la transformación rural, de forma que se adapte a los contextos locales (teniendo en cuenta la conectividad variable y la asequibilidad de los servicios).

iii) **Obtención responsable de los datos**. Los datos empíricos son fundamentales para orientar la adopción de decisiones y son cada vez más importantes en las propuestas de valor de los actores del desarrollo. Habida cuenta de que el FIDA aborda expresamente la pobreza rural, la creación de un conjunto de datos mundial que abarque múltiples temas intersectoriales aumentará el impacto del Fondo en los pequeños productores. La calidad y la seguridad de los datos, así como la ética de su empleo, serán cuestiones prioritarias en el diseño y la ejecución de los proyectos. Para asegurar que sea así, el FIDA se esforzará por fortalecer su marco jurídico bajo la autoridad del Presidente y en virtud de los Principios de las Naciones Unidas

[16] Esos principios son i) diseñar con el usuario; ii) comprender el ecosistema existente; iii) diseñar para la ampliación; iv)sentar las bases para la sostenibilidad; v) adoptar un enfoque orientado a los datos; vi) utilizar estándares abiertos, datos abiertos, fuentes abiertas e innovaciones abiertas; vii) reutilizar y mejorar; viii) abordar la privacidad y la seguridad, y ix) ser colaborativo. Véase el enlace: https://digitalprinciples.org/resource/preceptos-basicos-principios-para-el-desarrollo-digital/.

sobre Protección y Privacidad de los Datos Personales, y el documento "Data Privacy, Ethics and Protection Guidance Note on Big Data for Achievement of the 2030 Agenda", aprobado por el Grupo de las Naciones Unidas para el Desarrollo Sostenible. El FIDA también aprovechará la labor realizada por otros asociados para el desarrollo como, por ejemplo, el marco de gobernanza de los datos creado en 2014 por el PMA, en el que se establecen políticas y autoridades que podrían fundamentar las iniciativas del Fondo en esa esfera[17].

iv) **Priorización de los componentes básicos de la TIC**. Tal y como destacan la Digital Impact Alliance y la Unión Internacional de Telecomunicaciones (UIT), las iniciativas de TIC para el desarrollo tienden a centrarse en la creación de nuevos productos y servicios, lo que conduce a la duplicación de esfuerzos, el despilfarro de los recursos y el perjuicio de los mercados tecnológicos locales. El FIDA respalda esos principios para el desarrollo digital, diseñados en aras de la difusión y la ampliación de escala, así como la interoperabilidad, sobre la base de las normas internacionales.

v) **Enfoque centrado en no perjudicar**. El FIDA adoptará un enfoque centrado en no perjudicar, a fin de minimizar los perjuicios causados por las intervenciones de TIC para el desarrollo, y se esforzará por mitigar cualquier repercusión negativa del empleo de la TIC para el desarrollo. Todas las intervenciones de TIC para el desarrollo, así como el empleo de la TIC para fundamentar la adopción de decisiones, se ajustarán a los valores y obligaciones consagrados en la Carta de las Naciones Unidas y la Declaración Universal de Derechos Humanos.

V. Presentación de informes, medición y seguimiento

22. La ejecución de la estrategia estará respaldada por un sistema exhaustivo de SyE y aprendizaje, que hará también un seguimiento de los progresos. El sistema permitirá recopilar datos e información de otro tipo al incorporar herramientas institucionales de recogida de datos a fin de comparar los resultados con el marco de resultados de la estrategia (véase el apéndice I). En colaboración con el equipo de tareas interdepartamental relativo al Sistema de Gestión de los Resultados y el Impacto, se ampliarán los indicadores existentes para presentar información a este respecto, y se actualizará el Sistema de Gestión de los Resultados Operacionales para garantizar que el sistema produzca datos adecuados a partir de los resultados obtenidos en las iniciativas de TIC para el desarrollo. El sistema también permitirá al FIDA documentar los conocimientos y brindar apoyo a los procesos de adopción de decisiones y aprendizaje relativos a la TIC para el desarrollo a nivel de toda la organización. La Junta Ejecutiva recibirá informes periódicos sobre los progresos realizados.

VI. Riesgos y medidas de mitigación

23. El empleo de la TIC para el desarrollo podría entrañar riesgos para el Fondo, sus asociados y, en última instancia, sus beneficiarios. Algunos de los riesgos tecnológicos son la posibilidad de que las soluciones digitales adoptadas no produzcan los beneficios previstos debido a un funcionamiento inadecuado o a limitaciones de índole tecnológica (por ejemplo, de infraestructura o de preparación electrónica). El riesgo de ejecución está relacionado con la posibilidad de no alcanzar los objetivos previstos ni obtener los resultados esperados debido a la escasa sensibilización, motivación o capacidad de los asociados, o a la falta de influencia directa en la implantación de la TIC para el desarrollo. El riesgo

[17] La principal referencia a la protección de datos en el PMA es la "Guide to Privacy and Personal Data Protection", que se basa en cinco normas que fundamentan la protección de los datos personales en todo el ciclo relativo a la tramitación de datos.

financiero está relacionado con el cálculo erróneo del costo de las tecnologías digitales o con que los costos sean superiores a los presupuestados a raíz de factores externos. Por último, el riesgo de asociación hace referencia a i) la posible falta de interés, compromiso y apoyo de los asociados, y ii) el riesgo de perjudicar a los beneficiarios a causa de los efectos negativos involuntarios derivados de la intervención de TIC para el desarrollo.

24. En el cuadro que figura a continuación se describen las principales estrategias de mitigación para hacer frente a esos riesgos. En el apéndice V se proporciona una descripción detallada de esas estrategias.

Riesgo	***Estrategia de mitigación***
Tecnología	Definir metas realistas teniendo en cuenta la infraestructura de TIC de los países y su disponibilidad para adoptar soluciones tecnológicas en los proyectos y programas de TIC para el desarrollo, y adaptar las aplicaciones a las condiciones locales.
	Establecer asociaciones complementarias.
	Sensibilizar al personal y los asociados en materia de ciberseguridad y cuestiones relativas a la protección de datos.
	Actualizar los sistemas existentes y revisar y aplicar de forma constante medidas de seguridad estrictas.
Ejecución	Asegurar la plena participación de los asociados locales en la ejecución del proyecto.
	Mantener una gestión de proyectos ágil en lo que respecta a la creación de nuevos productos y servicios.
	Desarrollar la capacidad del personal y los asociados para diseñar y ejecutar proyectos en materia de TIC para el desarrollo a través de actividades de formación y asociaciones.
	Establecer procedimientos para el uso responsable de los datos al ejecutar los proyectos en materia de TIC para el desarrollo.
	Sensibilizar al personal y a los Gobiernos, y desarrollar sus capacidades, para innovar a través de la TIC para el desarrollo.
	Promover el aprendizaje colaborativo y el intercambio de conocimientos.
Financiación	Realizar análisis financieros que incluyan medidas de mitigación en la fase de diseño del proyecto.
	Realizar una presupuestación realista y eficaz en función del costo de la TIC para el desarrollo, sobre la base de los costos estimados a ese respecto.
	Elaborar procedimientos sólidos para la gestión y el control del presupuesto del proyecto.
	Establecer asociaciones con los Gobiernos, otras organizaciones de las Naciones Unidas, las instituciones financieras internacionales y los actores del sector privado para aprovechar más los recursos y los conocimientos especializados.
Asociaciones	Sensibilizar acerca de la importancia y urgencia de aprovechar las soluciones de TIC para el desarrollo con vistas a alcanzar los ODS.
	Colaborar con los Gobiernos, otras organizaciones de las Naciones Unidas, las instituciones financieras internacionales y los proveedores de servicios.
	Fijar normas claras y estrictas en lo referente a las condiciones de las asociaciones, así como al empleo de los datos y la protección de los usuarios.

VII. Conclusión

25. La erradicación de la pobreza y el hambre es la máxima prioridad de la Agenda 2030 para el Desarrollo Sostenible. En su calidad de organismo especializado de las Naciones Unidas e institución financiera internacional centrada en la agricultura y el desarrollo rural, el FIDA debe acelerar sus iniciativas para promover la transformación rural inclusiva y sostenible en los países en desarrollo. La TIC para el desarrollo ofrece al FIDA una oportunidad excelente para reforzar su impacto en el desarrollo y mejorar el diseño, la gestión y la presentación de información sobre los resultados de sus operaciones. El objetivo de la estrategia de TIC para el

desarrollo radica en establecer una dirección estratégica, así como esferas de actividad y principios rectores, para sacar partido a la TIC para el desarrollo con miras a alcanzar los objetivos estratégicos y las prioridades institucionales del Fondo.

Results Measurement Framework

The results indicators used to measure the success of the ICT4D strategy are:

Code	*Indicator*	*Responsible Team*
Action area 1	Scalable uptake of ICT4D solutions	
1.1	Number of Country Strategic Opportunities Programmes (COSOPs) or Country Strategy Notes (CSNs) identifying ICT4D opportunities to advance development results	Programme Management Department (PMD)
1.2	Number of projects and grants with evidence of improved productivity that incorporate ICT4D solutions	PMD
1.3	Number of projects and grants with evidence of improved benefits from market participation that incorporate ICT4D solutions	PMD
1.4	Number of projects and grants with evidence of strengthened climate resilience that incorporate ICT4D solutions	PMD
1.5	Number of projects that have integrated the use of ICT4D in the design (targeting), M&E, or impact assessment	PMD/ Research and Impact Assessment Division (RIA)
1.6	Number of interventions designed with geospatial technologies for geographic and beneficiary spatial targeting	ICT4D Task Team
1.7	Number of projects embedding ICT4D solutions into their design and implementation modalities	ICT4D Task Team
1.8	Number of policy-relevant knowledge products completed including IFAD promoted ICT4D in agriculture and rural development.	ICT4D Task Team
Action area 2	Strengthening ICT4D partnerships	
2.1	Number of partnerships established in the area of ICT4D	GPR
2.2	Resources (monetary and in kind) mobilized through partnerships in ICT4D solutions	GPR
2.3	IFAD participation in international, regional and national level initiatives on ICT4D for sustainable	ICT4D Task Team

Code	*Indicator*	*Responsible Team*
	rural transformation.	
2.4	Number of collaborative activities / projects with Rome-based agencies	ICT4D Task Team
Action area 3	Enhancing ICT4D knowledge management and sharing	
3.1	Number of knowledge products and tools developed to inform ICT4D use in IFAD's PoLG	ICT4D Task Team
3.2	An ICT4D repository operational	ICT4D Task Team
3.3	An ICT4D community of practice operational	ICT4D Task Team
3.4	Number of users of the information repository by IFAD staff	ICT4D Task Team
3.5	Number of design processes informed by use of ICT4D tools	ICT4D Task Team
3.6	Number of projects using ICT-based tools for M&E and impact assessment	RIA/PMI
Action area 4	Building internal ICT4D awareness, capacity and leadership	
4.1	Number of trained IFAD staff actively applying ICT4D knowledge in their area of responsibility	HRD and ICT4D Task Team
4.2	Number of technical trainings on ICT4D delivered to IFAD staff	HRD and ICT4D Task Team
4.3	Number of presentations and capacity building events organized during regional and hub planning meetings/retreats and Regional Implementation Workshops	ICT4D Task Team
4.4	Number of staff engaged as focal points and drivers of change in for IFAD ICT4D agenda	HRD
4.5	Number of events to raise internal awareness about the potential of ICT4D to scale up impact, improve effectiveness of interventions and increase staff engagement	ICT4D Task Team

Selected examples of IFAD's ICT4D projects and applications to date

1. Financial inclusion projects

IFAD has been promoting financial inclusion through ICT-based solutions both through its PoLG and special facilities. On the PoLG, in early 2018, IFAD's financial inclusion team conducted a mapping exercise of all ongoing financial inclusion projects and activities financed by IFAD including ICT-based activities. As at 31 December 2017, ICT4D activities within financial inclusion projects comprised 17 projects, listed in the below table.

Country/Region	Project Name
Afghanistan	Rural Microfinance and Livestock Support Programme
Cambodia	Accelerating Inclusive Markets for Smallholders
Bolivia	Economic Inclusion Programme for Families and Rural Communities in the Territory of Plurinational State of Bolivia
Colombia	Building Rural Entrepreneurial Capacities Programme: Trust and Opportunity
Egypt	Promotion of Rural Incomes through Market Enhancement Project
Ethiopia	Rural Finance Intermediation Programme II
Kenya	Programme for Rural Outreach of Financial Innovations and Technologies
Kyrgyzstan	Access to Markets
Kenya	Kenya Cereal Enhancement Programme (KCEP)
Nepal	Samriddhi - Rural Enterprises and Remittances
Nepal	Kisankalagi Unnat Biu-Bijan Karyakram
Philippines	ACCESS DIASPORA
Senegal	Agricultural Development and Rural Entrepreneurship Programme (PADAER I)
Swaziland	Rural Finance and Enterprise Development Programme
Uganda	Project for Financial Inclusion in Rural areas
Zambia	Rural Finance Expansion Programme
South Asia, East and Southern Africa, West Africa, Latin America	Inclusive Rural Finance for Smallholder Families and Other Vulnerable Groups Programme

The results of three initiatives are hereby presented: (a) the e-voucher system launched by the Kenya Cereal Enhancement Programme (KCEP); (b) the remote sensing-based index insurance launched in Senegal within the Agricultural Development and Rural Entrepreneurship Programme (PADAER I); and (c) the Inclusive Rural Finance for Smallholder Families and Other Vulnerable Groups Programme.

(a) The **e-voucher system**, introduced by the **Kenya Cereal Enhancement Programme (KCEP)** and launched with the support of the European Union (EU), is an electronic platform to improve smallholder farmers' agricultural productivity and to transition to a market-oriented and commercial agricultural system. After registering on a web portal, farmers open bank accounts with Equity Bank Limited (EBL) and are issued with customized debit (ATM) cards containing different 'e-wallets' which they can use to purchase farm products or inputs from selected agro dealers. There is an e-wallet for each of the different products offered, so that farmers can distribute their funds across

different expenses. At the same time, financial literacy training and a weather-based crop insurance scheme are offered.

Farmers using e-vouchers are referred to participating agro-dealers depending on their stocking capacity. This creates a fair distribution system with a good farmer-to-agro-dealer ratio, ensuring inclusivity and coverage. The electronic platform ensures that payments made to the agro-dealers are both immediate and traceable. The agro-dealer's trade is not restricted to programme farmers, and the farmers are not obliged to buy from programme agro-dealers for their other farming activities.

The institutional and technological innovations introduced since early 2016 under KCEP have produced results in terms of efficiency, transparency and reducing linkages and corruption. Within the first two years:

- Governments, both national and in the targeted counties, have seen the added value and potential of the e-voucher in terms of agricultural modernization, acknowledging the programme as one of the national flagship initiatives.
- A total of 23,622 smallholder farmers (48% women, 17% young women and men) out of a target of 40,000 have accessed e-voucher products.
- The value of the total transacted e-voucher inputs amounts to some US$4.7 million over three consecutive cropping seasons.
- Empirical results show that farmers with access to e-vouchers for inputs had higher agricultural productivity than those without.

(b) Thanks to the Agricultural Development and Rural Entrepreneurship Programme (PADAER I), the **remote-sensing based index insurance** was introduced in Senegal.

As opposed to 'traditional' indemnity insurance, index insurance is built on historical data, and it uses current season data to verify when a payment is triggered. Generally, all farmers within a given area purchase the same policy, for the same price, and receive the same payouts when the index triggers. The reduced administrative costs and the simplified and automated claims processes make index insurance more accessible for smallholder agriculture. The standardized nature of the product also means that it can be bundled with other services, such as credit or inputs, and delivered through aggregators. It protects against covariate risks which affect many people in the same area and at the same time, be it a local area, across a region or a whole country.

However, limited availability, accessibility, quantity and poor quality of data on the ground are some of the primary technical constraints preventing scale-up and sustainability of index insurance. Without sufficient quality data, either it is impossible to design products for some areas and countries, or products that are designed can become unreliable, not compensating when they should.

One of the main risks faced by smallholder farmers in the PADAER is drought. PADAER I supported farmers' organizations with a package of inputs and services. Using satellite data or 'remote sensing' enabled expansion of index insurance to regions where populations are dispersed, and ground data is lacking and difficult to acquire. With financing from the Agence Française de Développement, the IFAD-WFP Weather Risk Management Facility partnership, of the Platform for Agricultural Risk Management, worked with the R4 Rural Resilience Initiative, its private sector collaborators in-country, and PADAER.

Index insurance based on remote sensing was introduced in the package of inputs and services for members of farmers' organizations in PADAER. By 2017, smallholders in 69 PADAER farmers' organizations and unions within Kolda and Tambacounda were participating. Farmers received payouts due to poor rainfall in 2015 and 2016. Further scaling-up is planned in PADAER II.

Index insurance based on remote sensing is now being assessed for use in other IFAD-financed projects working on crop insurance, including: RUFEP in Zambia, PASIDP II in Ethiopia, ASPIRE in Cambodia, VODP II in Uganda, and KCEP-CRAL in Kenya.

(c) The **Inclusive Rural Finance for Smallholder Families and Other Vulnerable Groups Programme** is a five-year IFAD grant to the Consultative Group to Assist the Poor (CGAP). Since 2017, the programme contributes to global effort to enhance development of innovative solutions for financial inclusion through practical research and active engagement with financial service providers (FSPs), policymakers and other partners. Participating rural FSPs benefit from improved client metrics, market intelligence and expanded digital solutions for smallholders, women and other vulnerable groups. Indirect target groups that will ultimately benefit from this grant include: rural women, youth and vulnerable households; smallholder farmers dependent on agriculture for subsistence and/or income; and migrants, refugees and internally displaced people (IDPs).

The workstream on vulnerable groups such as migrants, refugees and IDPs, women and youth builds on CGAP data and analysis (e.g. Financial Inclusion Insights, Finscope, Global Findex) and from the financial diaries and national surveys of smallholder households, and incorporates the results of other data-collection efforts. Grant activities related to financial inclusion are designed to expand the evidence base for financial inclusion among vulnerable groups, as well as other groups excluded from the financial solutions they need to manage their lives.

The other main workstream on digital financial solutions for smallholder families (farming and rural enterprise) focuses on more-extensive client information and specific financial solutions that meet particular client needs. These experiences help FSPs better understand and their clients and seize opportunities to leverage relevant technology, e.g. through digitizing agricultural value chains, to increase outreach, expand their portfolio of solutions and lower delivery costs.

Some of the results after less than three years are the following:

- **Understanding how companies that finance assets for the poor (e.g. PAYGo Solar) manage the risk of their lending portfolios in order to develop guidance on best practices.** CGAP has launched a pilot between a microfinance company (MicroCred) and an asset financing company (Baobab+) to test the possibility of pooling best practices from each. CGAP has engaged an experienced venture capital investor to lead this workstream and partnered with International Finance Corporation and the Global Off Grid Lighting Association (GOGLA) on this.
- **Managing FinEquity, the women's financial inclusion community of practice (COP).** FinEquity continues to update members on developments in women's financial inclusion through Digital Financial Services (DFS), including data & measurement, social norms, and technology.
- **Exploring innovations in technology and business models.** CGAP generates insights and advice for IFAD and its other members as well as other stakeholders to enable providers to offer affordable, responsible, and accessible financial solutions to poor people. CGAP will also identify areas where more in-depth work is necessary.
- **Scaling the basic enablers of DFS.** CGAP has completed an internal strategy on how CGAP's policy work can build the capacity of policymakers. A technical note on rules on safeguarding customer funds held by e-money issuers has been issued. Three more technical notes targeting regulators on (i) new licensing categories (e-money issuers, limited purpose banks such as payments banks, and digital banks), (ii) agent types and structures, and (iii) on risk-based customer due diligence have been drafted.

- **Linking excluded women to markets through e-commerce platforms.** To start and grow their enterprises, female entrepreneurs and value-chain suppliers worldwide leverage a range of digital platforms, from simple social networking platforms such as Facebook ("f-commerce") to formalized e-commerce platforms that offer a range of integrated business services. These informal and formal developments offer new opportunities for women's economic benefit and inclusion and could also offer access to a range of financial services (e.g. payments, credit, financial literacy enhancement, transfers), both associated with and apart from their commercial transactions. CGAP is exploring the hypothesis that the increasing adoption of e- and f-commerce will drive faster adoption of digital financial services among excluded and under-served women and promote their economic, financial, and social inclusion.

Further work in the use of ICTs to promote financial inclusion has been done through the **Financing Facility for Remittances**, thanks to which projects have been implemented in Kenya, Uganda, Malaysia, Pakistan and Bangladesh. In Kenya and Uganda, the FFR is partnering with Equity Bank to provide low-cost, cross-border mobile money transfers across the Kenya-Uganda corridor, linked with savings, loans and other financial services.

In the corridors between Malaysia and Pakistan and Bangladesh, FFR is partnering with ValYou, a Mobile Network Operator (MNO) to allow migrant workers originating from rural areas and their families to use a low-cost app and a wallet-based mobile-enabled remittance system, and providing the target group remittance recipients access to additional financial services that meet their needs. In 2018, over 11,354 new wallets were created in favour of Pakistani migrant workers in Malaysia who send money to Pakistan, exceeding the original goal.

In Bangladesh, the newly-launched wallet-to-wallet integration with bKash and Rocket received an overwhelming response, with over 44,262 new wallets created at the sending side in just 18 months for Pakistan and 11 months for Bangladesh. The ValYou Mobile Wallet App is Malaysia's first mobile wallet providing international remittances with the Application Programming Interface connecting to major corridor banks/financial institutions. ValYou is the only MTO connected to the EasyPaisa wallet directly for Pakistan, enabling remittance receivers to cash out at over 80,000 cash-out points. For Bangladesh, ValYou is the first wallet-to-wallet integration system, with over 170,000 cash-out points. To further enhance customer loyalty, ValYou also launched domestic and international Telco top-up services for over 13 countries, enabling senders to perform airtime top-up for their loved ones back home.

2. IFAD projects supporting increased access to information and markets through ICTs

The *PROMAFI* project in Paraguay entered into force in November 2018 and it will implement actions directed to increase the ITC access of smallholders (target: 2,435 farmers using ITC). The project supports the development of a free Search Engine to improve access to agricultural information and technical advice on production and marketing. The information will be accessed through basic phones using SMS or phone calls and without need for internet. The service will be offered through a strategic collaboration with one mobile network operator.

The *Developing geo-referenced socio-economic data system and information for effective rural planning and development in isolated regions of Peru* is a grant under implementation by UNFPA in Peru. The programme aims at developing a system of a geomatics and geo-spatial regional database to provide policy-makers with an innovative and high-technological instrument to develop more suitable and diversified programs to address the needs of the populations. The project will pilot the instrument in the VRAEM (valley of the Apurímac, Ene and Mantaro rivers) region, one of the most isolated and poorest regions of Peru.

IFAD has been pioneering the use of ICTs to provide rural people's access to key information for their livelihoods via mobile phones, the Internet and email, since the 2000s.

In Tanzania[18], an early IFAD ICT4D project showed value after just one agricultural season, as the farmers agreed on the significant impact on their access to markets, their production, and their incomes. The farmers demonstrated to be particularly responsive to the increased opportunity provided by market access and a fair price: some smallholder farmers doubled or even quadrupled their market volume. The return on investment was also particularly high: project activities contributed to a gross increase in income of beneficiaries of more than USD 1.8 million with an initial investment of USD 200,000. In Zambia, an IFAD-funded smallholder enterprise marketing programme in cooperation with the Zambia National Farmers Union (ZNFU), supported the design of a communication service to provide farmers with accurate and up-to-date agriculture and market information covering the entire value chain. The service enabled smallholder producers to make informed decision about what to grow, volumes required, storage, processing, marketing and investment opportunities. Evidence showed that access to the service established through the IFAD-funded programme better enabled smallholders and traders to access and use relevant, up-to-date, and actionable information to shape decision-making[19].

3. IFAD engagement with geospatial technologies

IFAD is very actively engaged in geospatial data. The below table lists a selection of the geospatial initiatives undertaken by IFAD since 2012.

Initiative	Time	Countries
Development of undernutrition maps of Bangladesh	2012	Bangladesh
Study on climate change impacts on pastures and livestock systems in Kyrgyzstan	2013	Kyrgyzstan
Support to herding from space in Niger	2013	Niger
Vulnerability assessment	2013	Yemen
Micro watershed level characterization in Cape Verde	2013-2019	Cape Verde
Use of GIS and Earth Observation technology for drainage problem and maladaptation of rice production systems in Cote D'Ivoire	2014-2020	Cote D'Ivoire
Use of Earth Observation tools for better project design	2015	Morocco
Mapping pilot sites, targeted basins and agricultural commodities in Cameroon	2015-2021	Cameroon
Landscape rehabilitation in Nigeria	2015-2021	Nigeria
Climate vulnerability assessment in Niger	2015-2023	Niger
Conflict impact on irrigation systems in Iraq and Syria	2016	Syria, Iraq
Development of El Niño Southern Oscillation (ENSO) Country Profiles	2016	Bhutan, Cambodia, Indonesia, Lao People's Democratic Rep, Viet Nam, Philippines, Angola, Ethiopia, Lesotho, Madagascar, Malawi, Mozambique, Swaziland, Zambia,

[18] Clive Lightfoot, Helen Gillman, Ueli Scheuermeier, Vincon Nyimbo "The First Mile Project in Tanzania," Mountain Research and Development, 28(1), 13-17, (1 February 2008).
[19] Terry Leahy, Debbie Jean Brown. (2016) 'People are Trying to be Modern': Food Insecurity and the Strategies of the Poor. Forum for Development Studies 43:3, pages 489-510.

		Zimbabwe, Argentina, Colombia, Dominican Republic, Guatemala, Peru, Djibouti, Egypt, Turkey, Congo(The Democratic Republic), Liberia, Nigeria, Sierra Leone
NATRIPAL CADT and Advocacy Project (Indigenous Peoples Assistance Facility)	2016-2017	Philippines
Service provision for cocoa value chain development (Component C)	2016-2023	Benin
Evaluation of an irrigation project in Georgia	2017	Georgia
Projet d'amélioration de la résilience des systèmes agricoles au Tchad (PARSAT)	2017-2018	Chad
Coffee and cocoa value chain study in Comoros	2017-2022	Comoros
Geo-referencing for water table trend appraisal	2017-2025	Mauritania
Development of a water balance model	2018	Cape Verde
Development of a remote sensing tool for index insurance	2018	Senegal
Monitoring shearing shed locations	2018	Lesotho
Including the Family Resilience Model into baseline surveys of new projects	2018/2019	Dominican Republic, Guyana, Nicaragua
Impact assessments with incorporating climatic variables	Ongoing	Uganda, Bangladesh, Ethiopia, Mexico, Senegal, Indonesia, Tajikistan, Chad, Malawi
Support to pasture monitoring in Kyrgyztan	Ongoing	Kyrgyzstan
Geo-referencing poverty in ESA using MPAT tool	Ongoing	Tanzania, Zimbabwe, Seychelles, Kenya, Lesotho, Swaziland
Support to climate analysis for 24 countries	Ongoing	Burkina Faso, Ghana, Nigeria, Senegal, Chad, Djibouti, India, Morocco, Cape Verde, Cameroon, Mauritania, Niger, Azerbaijan, Congo(The Democratic Republic), Congo, Benin, Gambia, Moldova, Mali, Montenegro, Liberia, Kyrgyzstan, Tajikistan, Turkey

The below table lists grants that were recently funded by IFAD where geospatial technology has been incorporated.

Grant name	**Time**	**Countries**
Smart Information and Communications Technology (ICT) for Weather and Water Information and Advice to Smallholders in Africa	2011-2014	Egypt, Sudan, Ethiopia
The Land and Natural Resource Tenure Security Learning Initiative in East and Southern Africa (TSLI-ESA II)	2013 - 2018	Kenya, Uganda
Geo-referenced RIA impact assessments	2015	China
Watershed development in Gambia (CHOSSO project)	2015 - ongoing	Gambia
Earth observation for decision-making in West and Central Africa (EODM)	2016 - 2019	Cameroon, Mali, Senegal
IFAD/ICRAF grant on Earth Observation in East Africa	2017 - 2021	Swaziland, Uganda,

working with the Land Degradation Surveillance Framework (LDSF)		Malawi, Lesotho, Kenya
Mainstreaming adaptation (and mitigation) into IFAD country strategies & investments through better use of geo-spatial data, tools and analysis	2019 - 2021	5 regions

Among notable initiatives, in Yemen IFAD invested in the combined application of GIS modelling, earth observations and social vulnerability assessments for climate change vulnerability mapping. Thanks to the appropriate use of these technologies, IFAD staff was able to identify target areas and communities according to their vulnerability to climate change, and to set out infrastructural adaptation plans according to local risk levels and the needs of the rural population (e.g. designing plans for building retaining walls, establishing water catchment ponds, dry wall terraces and other key infrastructure). This approach not only improved targeting by reducing biases in project design, but also advanced the development of monitoring and evaluation systems to assess project achievements[20].

IFAD-supported Adaptation for Smallholder Agriculture Programme (ASAP) enhanced stakeholder access to high quality data and diagnostic evidence on ecosystem health and household resilience, as well as the capacity to use such data and evidence to strengthen the design, monitoring, and ongoing refinement of programme interventions and investments.[21]
Pilots in earth observation and spatial analysis approaches has also shown the potential for the use of ICTs to target, monitor and assess programme outputs and outcomes. Geospatial data are used to support IFAD operations throughout the entire project cycle (IFAD Social Reporting Blog, 2019)[22]. Within this framework, geospatial technologies have been applied for more rigorous impact assessments, under the IFAD Development Effectiveness Framework (2016) and IFAD Impact Assessment Agenda. For example, to assist and improve the organization's effectiveness and efficiency in managing and supervising projects/programmes, IFAD has been using drones in Global Environment Facility (GEF) funded projects in its supervision mission in Africa (e.g. project PARSAT in Chad and Prodaf in Niger) to improve data collection and analysis for decision-making which can also augment the knowledge management in the region. In Uganda the ICT division helped improving the organization and partners' ability to carry out data collection and processing, integrating sophisticated vector-raster analysis, statistical computations and 3D visualization.

Another key tool supporting staff operational capabilities is the Geographic based project information system (GeoNode), which is a corporate GIS-based platform designed to effectively manage, visualize and share GIS and Earth Observation data at IFAD. Among its functions, it brings GIS capabilities into the Operational Results Management System (ORMS), providing project location visualization for central access point by project teams as well as automatically embedding the maps within design reports. It supports knowledge management, decentralisation and transparency in IFAD's operations.

IFAD staff working in the area of geospatial technologies established a technical network to expand and improve their use of such technologies, which contributed to mainstreaming geospatial technologies across 57 initiatives in 73 countries across 11 divisions. Within this framework, IFAD hosted so far 11 earth observation clinic visits (meetings between Earth Observation and GIS experts and IFAD staff). Most of the work is handled by an active Geo Group working in partnership with key geospatial partners, such as the ESA and WFP to explore and utilise EO data. The technical network is

[20] Gilbert Houngbo (2017). In: ITU. "Fast-forward progress: Leveraging tech to achieve the Global Goals". Geneva, Switzerland: ITU.
[21] IFAD. (2017b). Beyond the Static – Operationalizing Earth Observation Assisted Frameworks for Assessment and Monitoring of Ecosystem Health in IFAD ASAP Project Areas. Retrieved from http://www.worldagroforestry.org/sites/default/files/icrafIFAD_EO_summary-.pdf.
[22] IFAD Social Reporting Blog. (2019). THE IMPORTANCE OF GEOREFERENCING YOUR PROJECT INTERVENTIONS – THE CASE OF CAMEROON. Retrieved from http://ifad-un.blogspot.com/2019/02/the-importance-of-georeferencing-your.html.

particularly active in raising awareness, sharing experience and achievements through events such as the Geo Days. In 2019, members of the technical network received a grant to mainstream adaptation (and mitigation) into IFAD country strategies & investments through better use of geo-spatial data, tools and analysis.

5. Pilot projects established through the Innovation Challenge

The Innovation Challenge launched by IFAD in 2019 collected proposals from IFAD staff. Engagement was extremely high, testifying the value that staff sees in innovative intiatives. As an outcome, IFAD's EMC highlighted the need to continue to invest in mechanisms like the Innovation Challenge to nurture innovation at IFAD by piloting new ideas, capturing lessons learnt and scaling up successes.

Out of fifty proposals, ten were selected (two of which were merged into a single one) and awarded a total of 709'000 USD. Eight of the resulting nine winning proposals directly leverage ICT to achieve IFAD's strategic development objectives. Four of them have a geospatial focus: (a) Geo-scan solution for a rapid spatial data collection and dissemination on a country basis; (b) Integrating Indigenous Peoples Lands in Operations (IIPLO); (c) Leveraging on Artificial Intelligence and Big Data for IFAD2.0; and (d) Systematic Integration of GIS and Earth Observation Innovations in IFAD Operations and Corporate M&E Systems.

The below table lists the basic description of the proposals in the area of ICT4D, and the amount they received.

Description	**Funding US$**
Fields room and Connecting Lives – A virtual reality experience (ideas to be merged)	120,000
Systematic Integration of GIS and Earth Observation Innovations in IFAD Operations and Corporate M&E Systems	100,000
Geo-scan solution for a rapid spatial data collection and dissemination on a country basis.	74,000
Leveraging on Artificial Intelligence and Big Data for IFAD2.0	83,000
Digitalization of Business Plans within IFAD projects	100,000
Crowdfunding 2030. A joint effort for the SDGs*	60,000
Integrating Indigenous Peoples Lands in Operations (IIPLO)	100,000

Achievements from key ICT4D partnerships

Annex III discusses a sample of three existing partnerships that IFAD established in the ICT4D area of work with the European Space Agency (ESA), Intel Corporation, the World Food Program (WFP).

1. Partnership with the ESA

Partner name:	ESA
Country/Region:	Botswana, Gambia, Madagascar, Niger, São Tomé and Príncipe, and Vietnam.
Dates: Year Start/ Year End:	2008 – present
Purpose of the Partnership	ESA began collaborations in 2008 with a strategic player in the domain of agriculture; IFAD. Initially, three small-scale activities focussed on Madagascar, but these laid the ground for five more substantial demonstration projects that began in 2010. IFAD found particular use in (such as Sentinel 2).
Key Partner Obligations / Contributions	ESA provides free access to open-source data from ESA satellites, as well as support to capacity building of IFAD staff, project teams and the partner governments.
Impacts/Key outcomes:	A series of trials were implemented, supporting the identification of rice acreage, inundation areas and land parcels in Madagascar, supporting analysis of land use, land cover and crop monitoring in Niger, Gambia, Botswana and São Tomé and Príncipe, Vietnam. Particularly, the following activities were funded: • Land use/land cover and erosion risk in Niger • Land use/land cover and crop type monitoring in the Gambia • Land use/land cover and crop health monitoring in Botswana • Forest monitoring in São Tomé and Príncipe • Historical change monitoring in Vietnam ESA contributed to provide technical support to IFAD's Adaptation for Smallholder Agriculture Programme (ASAP), particularly for project baseline assessments and impact monitoring in agriculture projects. Finally, ESA supported capacity building of IFAD staff, project teams and the government counterparts in different areas of the world (e.g. Ethiopia, 2018) to increase the uptake of geospatial technologies in different stages of project cycles (planning, preparation, implementation, monitoring and evaluation)..
Lessons learned/Keys to success:	The collaboration was instrumental to raise awareness within IFAD about how Earth observation technology can be customised to IFAD activities around the globe (i.e. including but not limited to assisting in establishing country strategy plans, assessing food security, managing water and adapting to climate change). Within this framework, the partnership proved to be a key driver for expanding the use of Earth Observation technology in IFAD-financed project design, specifically to tackle climate change issues. A key factor for partnership success was the scalable process established: the first successful trials conducted in Madagascar led to the trials in other 5 countries, and then beyond. Finally, another key factor for partnership success was the particularly high commitment and interest of a critical mass of staff, which supported the establishment of a network of staff using geospatial technologies in their work as well as promote mainstreaming of such technologies across the organization.
Information Sources	https://www.spacefordevelopment.org/wp-content/uploads/2018/11/Space4IDA-FINAL-V1.pdf https://www.esa.int/Our_Activities/Observing_the_Earth/Developing_agriculture_from_the_sky https://ifad-un.blogspot.com/2014/10/mapping-future-for-smallholder-farmers.html

	https://ifad-un.blogspot.com/2018/02/eo4sd-agriculture-and-rural-development.html https://www.eo4idi.eu/sites/default/files/publications/eo4sd_agri_v3.pdf http://eo4sd.esa.int/2016/11/10/agriculture-and-rural-development-theme-overview/

2. Partnership with the Intel Corporation

Partner name:	Intel Corporation
Country/Region:	Cambodia
Dates: Year Start/ Year End:	2014 - present
Purpose of the Partnership	Support the efforts of the government of Cambodia to export over 1 million tons of rice a year.
Key Partner Obligations / Contributions	Intel provided free access to the farming apps, called the eAgro suite, developed as part of the Intel-Grameen partnership, and provided free technical support for scalable uptaking of the solution across different areas as well as replicate it in other countries.
Impacts/Key outcomes:	Intel Corporation delivered innovative ICT tools to local entrepreneurs across 210 locations in Cambodia to help farmers testing soil, buying seeds and connecting to markets. Particularly, smallholder farmers have been provided a step-by-step software program to analyze soil, determine fertilizer requirements, receive advice on best seeds to use and how to manage pests and diseases. Beyond the project in Cambodia, the partnerships allowed engaging Intel Corporation to test ICT4D solutions in four clusters (Pinghale, Uttarganga, Sano Surkhet and Mahelkuna) in the Surkeht District of Nepal in 2015.
Lessons learned/Keys to success:	A key factor for the success was the complementarity of capacity and expertise between IFAD and Intel This allow expanding access to IFAD's knowledge expertise at a fraction of the cost. Another key factor for the success was the explicit inclusion of sustainability and scalability in the design of the ICT4D initiative, which allowed the rapid scaling-up of the ICT solution offered to farmers. Partnerships created positive spillovers in terms of access to technical capacity tu undertake activities in other countries (Nepal).
Information Sources	https://www.ifad.org/en/web/latest/news-detail/asset/39070734 https://www.intel.com/content/dam/www/public/us/en/documents/solution-briefs/iot-agriculture-farm-to-fork-brief.pdf https://news.itu.int/ending-hunger-achieving-food-security-improving-nutrition-promoting-sustainable-agriculture/

3. Partnership with the WFP

Partner name:	WFP
Country/Region:	Global
Dates: Year Start/ Year End:	June 2014 – July 2019 Partnership will continue in Q3 of 2019
Purpose of the Partnership	The IFAD-WFP Joint Climate Analysis Partnership provides climate assessments to IFAD operations. It aims to fully mainstream climate-considerations into COSOP project design and implementation. IFAD and WFP are doing this by jointly financing a senior climate expert who brings in climate expertise, methodology and data from WFP into IFAD, and closely works together with ECG and ICT to build up climate information services in IFAD.
Cost/funding (if any):	2016 - 2019 funded by Adaptation for Smallholder Agriculture Programme (ASAP) 2019 - 2020 funded by Adaptation for Smallholder Agriculture Programme II (ASAP2)
Key Partner Obligations / Contributions	Historic climate analysis provided to IFAD operations in 42 countries: • Inputs provided to 27 COSOP and project designs, 3 project M&E and 15 SECAPs • 1 impact assessment of irrigation of Agricultural Support Project in Georgia • Detailed climate analysis undertaken for 5 countries (Iraq, Niger, Mozambique, Swaziland and Lesotho) • Analysis of conflict impacts on irrigated agriculture for Syria and Iraq • Support establish a pasture monitoring system in Kyrgyzstan • 34 ENSO IMPACTS profiles - el nino la nina impact (anomalies vs neutral conditions) on rainfall and normalized difference vegetation index (NDVI)
Impacts/Key outcomes:	IFAD design teams are informed about historic climate trends and variability, mainly on precipitation, NDVI and temperature, and take these into account in COSOP and project design
Lessons learned/Keys to success:	• Better internal coordination is needed to raise awareness on the benefit of earth observation and GIS, and coordinate geospatial requests • Geo-referenced data of households and project activities needs to be collected to conduct impact assessments
Information Sources	• ASP Impact Evaluation (see here) • Detailed climate assessment for Lesotho, Eswatini and Mozambique (see here) 34 ENSO IMPACTS profiles (see here)

Key ICT4D entry points for IFAD's strategies, policies, and action plans

Some of the existing IFAD strategies, policies, and action plans, offer crucial indications on the needs and potential use of ICTs across the organization.

1. Private Sector Engagement Strategy (2019-2024)

- ICT4D can directly help achieving the two main objectives of the private Sector Engagement Strategy.
- Funding opportunities for service providers leveraging ICT4D solutions to support IFAD's target groups could be expanded through IFAD private sector investments. This way, the ICT4D strategy will support the mobilization of private funding and investments into rural MSMEs and small-scale agriculture.
- The ICT4D strategy will prioritize the adoption of appropriate ICT solutions to expand markets, increase income and job opportunities and strengthen resilience for IFAD's target groups. ICT4D solutions that facilitates the integration of smallholder farmers and rural men and women into global/regional/domestic value chains will be promoted across the PoLG. Moreover, IFAD will promote partnerships with companies providing cost-effective digital solutions in the area of financial inclusion, climate change adaptation, access to inputs and information, and agricultural risk management.

2. Climate Change and Environment

- IFAD's Climate Change Strategy foresees a greater use of new tools and approaches, underlining the need to improve the relevance and quality of climate-related information to smallholders. It highlights current efforts undertaken to strengthen smallholder farmers' financial security in light of climate change and natural disasters, improving community-based adaptation efforts, and building resilience through the use of ICTs.

  Among key deliverables, it specifically foresees the generation and development of appropriate technologies that blend local and technical knowledge through country and global research grants.
- IFAD's Strategy and Action Plan on Environment and Climate Change (2019-2025) includes ICTs among those technology improvements that can promote environmental sustainability and climate resilience. Particularly, it refers to: (a) new ICTs that can promote adaptation and improved risk management, enabling more comprehensive information gathering; (b) use of ICTs to improve smallholders' access to weather forecasts and market information, thus helping them to better plan agricultural production, obtain better prices and access agricultural extension services; and (c) use of ICTs to open up new market opportunities for green products through e-shops.

  The Strategy and Action Plan also stress the key contribution of ICTs to achieve improved monitoring and evaluation, particularly referring to the use of "quantitative indicators tracked through IFAD's ORMS, complemented by additional information from qualitative indicators, participatory assessments, case studies and other methods."

3. Knowledge Management

- The implementation of the 2007 KM strategy made the case for increased use of ICTs, having driven improvements in technology infrastructure, as well as an increase in the development and dissemination of knowledge products.

- The 2018 KM Strategy and Action Plan highlighted gaps and needs that provided further justification to the expanded use of ICTs with the ultimate goal of increasing efficiency and effectiveness. Among gaps, the strategy mentions fragmentation of information, and lack of specific capacities to manage knowledge effectively. Among needs, the strategy advocates for strengthening the collaborative work of staff, especially in decentralized offices.

  The Strategy also foresaw an increased use of technology across PoLG (especially grants), the expanded adoption of user-centered approaches (consistently with Principles for Digital Development promoted in the ICT4D Strategy).

  Finally, the Strategy identified key priority actions where the ICTs will play a pivotal supporting role: (a) promote virtual collaboration among staff; (b) develop pre-project design knowledge packages for project delivery teams (through pilots); and (c) establish interactive knowledge exchange systems.

4. Innovation

- The Innovation Strategy represents a natural ally for the effective implementation of the ICT4D Strategy, as demonstrated with the organizational Innovation Challenge. For the more, the strategy explicitly foresees the use of "easy-to-use collaborative software" as part of its implementation.

5. Partnership

- IFAD's Partnership Strategy provides entry points to partner for increasing the efficiency of the organization as well as incorporating ICTs in its programs. One of the four categories of partnership identified promotes improved organizational efficiency through an appropriate ICT environment (inter alia). The Strategy also highlighted the need to partner with private-sector players for "increasing information and communications technology activities in IFAD-supported programmes".

6. Rural Finance

- The Rural Finance Policy highlights the key role of innovative tools and approaches to expand the frontiers of rural finance, particularly "piloting new approaches and delivery mechanisms to provide financial services in remote rural areas." Within this framework, the Policy directly refers to ICTs as a key tool to provide services in rural areas as well as support the growth in migrants' capital and remittances flows to rural areas. The strategy also identifies the specific need to strengthen data collection, monitoring of relevant indicators, and the development of management information systems at the micro level.
- The technology impact on financial inclusion is well documented with millions of previously unbanked rural households and smallholder producers reached though relatively simple mobile and agent banking systems.

7. Youth Action Plan (2019-2021)

- IFAD's Rural Youth Action Plan recognizes the comparative advantage of ICTs for youth engagement.

  The Action Plan also concretely identifies a framework for collaboration among the "Environment, Climate, Gender and Social Inclusion division, the Sustainable Production, Markets and Institutions Division and regional divisions to tap into IFAD's grant-funding windows in order to test new ideas,

develop models, and foster innovations in which youth can demonstrate their comparative advantages in terms of creativity, energy, and risk-taking capacity (e.g. information and communications technologies, rural energy).”

The Action Plan includes the key areas where ICTs is expected to have a positive impact on rural youth: promoting youth employment, strengthening capacity and skill development (particularly to expanding their ability to access to knowledge and information and increase their productivity), and expanding access to financial markets through digital financial services. manifold roles that young people can play in terms of technology uptake and support to innovative models

Risk management

A list of the identified risk factors that may contribute to the ICT4D project failure and the mitigation measures are summarised below:

Risks	Mitigating measures
Technology risk ICT4D technologies are not working or not delivering the cost-effective benefits. ICT4D solution becomes outdated after completion. Poor ICT infrastructure in rural regions. Lack of ICT technology readiness. Lack of cybersecurity and data protection. Lack of ICT security management. Inaccurate or incomplete data.	• Establish realistic targets for ICT4D projects by taking due considerations of ICT infrastructure and technology adoption readiness in ICT4D projects and programmes and tailor applications to specific local conditions • Leverage IFAD's partnership to speed up the investment in infrastructure, especially the last mile in poor remote rural areas • Raise awareness of cybersecurity and data protection issues and develop and implement ICT security management plan across all IFAD' operational and programme delivery areas • Regularly update security systems and continuously review and implement good security measures • Develop robust and cost-effective approaches for data collection and access through effective support at the point of collection and with clear responsibilities and accountabilities.
Implementation risk ICT4D projects fail to achieve its objectives and deliver expected results. ICT4D projects have negative impacts on beneficiaries' privacy. Lack of direct influences on ICT4D implementation. Lack of motivation and incentives for ICT4D engagement by local government. Digital illiteracy in poor rural people for taking up ICT4D solutions. Low ICT4D awareness, limited or outdated ICT capacity, knowledge, and skills among relevant stakeholders (IFAD, governments) due to fast moving ICT development. Lack of sufficient consideration of local needs.	• Consult and involve the main target/user groups in the development of the ICT4D implementation plan • Use agile project management with frequent client inputs for the development of any new services/products • Have clearly defined and allocated roles and responsibilities for project management • Establish specific task groups or working groups to closely monitor project implementation process, and establish governance and review processes • Establishment of procedures to ensure the responsible use of data across the whole ICT4D project implementation • Embed ICT4D capacity building in all ICT4D projects design and operations • IFAD will be strengthening its capacity to successfully deliver ICT4D projects through *ad hoc* capacity development initiatives as well as leveraging strategic partnerships • Better understanding of local needs and effective and management bottlenecks • Develop close partnership with government and local communities • Providing incentives to staff and countries to innovate with ICT4D • Guiding farmers through the "on boarding" process and creating incentives to use the application (e.g. providing free airtime) • Sharing and learning of the experience of other UN organisations and IFIs.
Financial risk Investment in ICT4D is too high. Actual cost significantly exceeds initial budget.	• Conduct analysis with mitigating measures at the project design stage • Have realistic and cost-effective ICT budget based on adequate estimation and predication of ICT costs • Have robust project budget management and control procedures • Develop Partnership with governments, other UN organisations, IFIs and private sector companies to leverage more resources and expertise.

Partnership risk Lack of support from government and key stakeholders. Lack of interest to invest in poor remote areas by private sector partners. Lack of understanding of local context by ICT4D developers. Lack of adequate ICT4D supporting strategy and policies in partner organizations. Key partners pulling out. Risks of harm to beneficiaries.	• Raise awareness on the importance and urgency of ICT4D stressing that ICT4D is not a choice, but a request for immediate action for achieving the SDGs. • Strong engagement with governments, other UN organisations, IFIs and service providers. • Perform an inventory of applicable laws and technical standards in the area of privacy protection and cyber security. • Conduct proper due diligence and vet potential partners in technology outsourcing processes, which would include consideration of the partner's data security processes and frameworks, in line with the UN Business and Human Rights Guidelines. • Develop special partnerships with leading organisations promoting and funding ICT4D • Actively engage with government and key stakeholders through capacity building and sharing ICT4D success stories; • Have very strict and clear rules about the terms of partnerships and the use of data and protection of the users. • Establish clear protocols and agreements for terminating any agreement should the privacy and security of IFAD's beneficiaries not be ensured. • Undertaking human rights and conflict sensitivity impact assessments when establishing partnerships, and establishing an independent review panel to review partnerships when needed.

ICT4D strategies and areas of intervention for selected development partners

Agency	*Engagement in ICT4D for agriculture*	*Key links*
World Bank	The World Bank supports client countries in leveraging digital technologies for development across five key areas of focus to promote strong and inclusive digital economies: (a) Digital infrastructure to support access to data, information, and knowledge; (b) Digital financial services and digital identification to facilitate transactions; (c) Digital innovation and entrepreneurship need a supportive ecosystem of government regulations and access to financing; (d) Digital platforms, including e-commerce and e-government, drive usage and foster economic activity; and (e) Digital literacy and skills create a digitally savvy workforce and boost competitiveness. In Fiscal Year 2018 (FY18), the World Bank portfolio included 28 standalone ICT-related projects (total commitments: $1.28 billion). World Bank interventions in the digital sector are informed by in-depth research and analysis, and partnerships are a key area of functional work in ICT4D (e.g. the partnership with ITU on Measuring ICT for Development, or the Partnership for Open Data with the Open Data Foundation and Open Society). The World Bank does also contribute to the *Open Development Technology Alliance*, a knowledge platform facilitating knowledge sharing on ICTs. Thanks to the contribution of the Republic of Korea, in 2008 $15 million *Korean Trust Fund for ICT4D* was established to support activities such as feasibility studies, training modules and strategic plans, through which the World Bank has prepared projects in three areas. One of these areas is "Green IT", explicitly focused on improving the climate resilience of agriculture and water resource management systems through digital technologies. The World Bank has been pioneering the use of ICTs to support agriculture and rural development. It published a comprehensive sourcebook on ICTs for agriculture ("ICT in agriculture: connecting smallholders to knowledge, networks, and institutions) in 2011, a second version of which was published in 2017. The 2017 World Development Report ("Digital Dividends") focused on ICT4D, and a section of the report was dedicated to agriculture. The 2018 report "Data-driven Development" referred to potential uses of Big Data technologies in the agri-food sector: (a) increased/expanded data usage and integration in heavy supply chain sectors, like agribusiness; (b) AI to maximize yields and improve agricultural practices based on multiple data sources; (c) text mining and text analysis to support agricultural development and build food security. In 2019, the World Bank published a report ("The Future of Food - Harnessing Digital Technologies to Improve Food System Outcomes") that presents the opportunities offered by ICTs – the main ones being: (a) better transparency of agricultural value chains; (b) smarter farms; and (c) improved public services. It also highlights some of the risks (i.e. over-concentration of service provider market power, poor data governance, and potential exclusion of marginalized groups). It provides entry points for public-sector action to: (a) expand rural network coverage; (b) foster digital entrepreneurship; and (c) facilitate the demand for ICTs in the food system. The report also provides guidance to prioritize actions using a Maximizing Finance for Development (MFD) approach to raise efficiency, equity, and environmental impacts, while mitigating/minimizing the risks associated with ICTs. ICT4D components are also specifically included in the World Bank's projects in the area of agriculture.	http://documents.worldbank.org/curated/en/522141499680975973/ICT-in-agriculture-connecting-smallholders-to-knowledge-networks-and-institutions https://www.worldbank.org/en/topic/digitaldevelopment https://www.worldbank.org/en/publication/wdr2016 https://www.worldbank.org/en/topic/digitaldevelopment/publication/data-driven-development

Agency	*Engagement in ICT4D for agriculture*	*Key links*
	The World Bank endorsed the Principles for Digital Development.	
ADB	The Asian Development Bank recognized the potential of digital development both internally and across its projects and programmes. In March 2018 the Asian Development Bank (ADB) created the Digital Technology for Development Unit to help countries leverage ICTs for development as well as implement new digital reforms supporting the modernization of ADB's business processes. To guide the modernization of ADB's through digital technologies, the organization prepared a Digital Agenda, which comprises 6 different programs: (i) Empower operations to be integrated, flexible, efficient, inclusive, and transparent with accountability; (ii) Enable flexible and innovative financial products and services; (iii) Renovate administrative and corporate systems; (iv) Enable digital workplace and connected data; (v) Foster IT service excellence through optimal use of secure, modern technology; and (vi) Prepare ADB for the future by experimenting with new technologies in an innovation sandbox. Externally, the ADB expanded the use of digital technologies in its operations, and started to help partner countries to build an enabling environment for improved use of ICTs, based on three axes: (1) reliable ICT infrastructure; (2) skilled human resources; and (3) enabling policies and regulatory environments. In April 2017, the ADB launched the High-Level Technology (HLT) Fund, a multi-donor trust fund promoting the integration of HLT and innovative solutions into ADB-financed and administered projects throughout the project cycle through ad hoc grant financing. Among the areas of focus, there are: climate change mitigation and adaptation, including resilience to disaster risks. The ADB prepared an investment framework for digital technologies in health, which could be used as a reference to inform the development of similar investment frameworks in agriculture. Notable partnerships in this area is the one with the Republic of Korea, thanks to which in 2006 the e-Asia and Knowledge Partnership Fund was established to bridge the digital divide, promote improved access to information and knowledge through ICT in the Asia and Pacific region. Regarding agriculture, there are no strategic focus on ICT4D in this area. Nevertheless, there is inclusion of ICT4D in projects targeting agriculture. For example the regional project "Digital Solutions for Improved Efficiency in Value Chain Systems" in Pakistan, Tajikistan, and Viet Nam. The project is funded by the e-Asia and Knowledge Partnership Fund.	https://www.adb.org/news/adb-supports-digital-technologies-innovative-development-solutions https://www.adb.org/site/funds/funds/high-level-technology-fund https://www.adb.org/publications/guidance-investing-digital-health https://www.adb.org/projects/49054-001/main
African Development Bank (AfDB)	The AfDB has recognized the potential of ICTs to support agricultural and rural development in Africa. As part of the AfDB's efforts, the Technologies for African Agricultural Transformation (TAAT) initiative has been established to scale up appropriate agricultural technologies from the CGIAR and national systems across Africa. The TAAT targets a total investment of US $800 million. While focused on agricultural technologies, the inclusion of ICTs is foreseeable in the next future. The AfDB developed the Africa Digital Financial Inclusion Facility (ADFI) to accelerate digital financial inclusion across Africa, with a goal of promoting access to the formal economy for 332 million more Africans (60% women). The ADFI follows up the initiative supporting the Central Bank of West African States (BCEAO) to upgrade and foster interoperability of the digital payment systems of the eight West African countries belonging to the West African Economic and Monetary Union (WAEMU). The initiative (worth	https://www.afdb.org/en/topics-and-sectors/sectors/information-communication-technology https://www.afdb.org/en/adfi https://www.afdb.org/fileadmin/uploads/afd

Agency	*Engagement in ICT4D for agriculture*	*Key links*
	USD 11.3 million in grant funding was supported by the Bill and Melinda Gates Foundation). In 2019, the AfDB published the "Creating decent jobs strategies, policies, and instruments" policy research. In the document, the use of ICTs for creating new job opportunities, and the potential of increasing labor productivity in agriculture through innovation in production as well as better access to markets is explicitly referenced. Among ICT4D initiatives in the area of rural development, it is worth mentioning the *Jobs for Youth* initiative, which focuses primarily on agriculture, industry and ICT with a Rural Microenterprise ($54M) project launched in Malawi, Nigeria, and Burkina Faso.	b/Documents/Boards-Documents/Bank_Group_Strategy_for_Jobs_for_Youth_in_Africa_2016-2025_Rev_2.pdf https://am.afdb.org/sites/default/files/AfDB18-16_Jobs_English.pdf
IADB	ICTs are an integral part of IADB's work, which has been improving the use of ICTs internally as well as mainstreaming the use of digital technologies across projects and programs in different sectors. Partnerships are a key element in the area of digital technology. Among notable partnerships, IADB established an alliance with Telefónica to promote digital transformation and socio-economic development programs in Latin America through 2017-2020. IADB also established a partnership with Mastercard to support Big Data technologies to support sustainable mobility in Latin America and the Caribbean. Internally, IADB has been expanding the use of ICTs for designing and monitoring the organization's work through various initiatives, such as the "Code for Development" one that promotes the reuse of open source software. A specific digital strategy has also enabled improved Knowledge Management across the organization. A flagship initiative in the area of ICT4D is the FintechLAC, a Regional Public Goods initiative that seeks to support the development, consolidation, and integration of a Fintech ecosystem in LAC through the promotion of policies and regulations, as well as the institutional strengthening for ecosystem actors. FintechLAC is the first Public-Private group of Fintech in Latin America and the Caribbean, and it is formed by a group of financial regulators and supervisors and Fintech associations from 15 countries. With regards to ICT4D in agriculture, IADB has been integrating digital technologies to support agricultural productivity while adapting to climate change, and it has supported technology adoption in line with organization's main areas of work. Recent initiatives include the formulation of investments in the area of digital agriculture in Honduras and Uruguay, thanks to the collaboration with the FAO's Investment Center. IADB is also committed to support the creation of enabling environments at the national level in the area of digital agriculture. In Honduras, a national conference to showcase promising ICT for agriculture innovations was organized in 2019.	https://www.iadb.org/en/news/telefonica-idb-and-iic-promote-digitalization-economy-latin-america http://code.iadb.org/en https://blogs.iadb.org/conocimiento-abierto/en/la-estrategia-digital-que-nos-llevo-a-las-10-millones-de-descargas/ https://www.iadb.org/en/news/idb-and-mastercard-launch-new-resource-center-digital-transport-cities https://www.iadb.org/en/sector/initiatives/digital-finance-innovation/fintech http://www.fao.org/americas/noticias/ver/en/c/1197760/ https://www.fontagro.org/es/publicaciones/prensa/otras-noticias/congreso-internacional-de-innovacion-tecnologica-para-el-sector-agropecuario-agrotech-2019-san-pedro-sula-honduras-28-y-29-

Agency	*Engagement in ICT4D for agriculture*	*Key links*
		de-marzo/
FAO	FAO has traditionally been the UN agency mandated to use digital technologies to bridge the rural-urban divide. As part of the World Summit on Information Society (WSIS) process, FAO has been managing the largest community of practice in the area of ICT4D in agriculture (E-agriculture). The community mobilizes counts 15'000 participants, who are mobilized through online discussions to map existing knowledge and practices. FAO has been integrating the use of digital technologies in its work over the past 30 years. This led to several initiatives that developed FAO-branded digital tools to support the organization's strategic and functional objectives, as well as direct support to member countries and partners through technical assistance and capacity development in the area of ICT4D. Among the different teams in the organization that have contributed to ICT4D, the Communication for Development team's work should be highlighted as it has been focusing on the integration of low-tech solutions, traditional media, and innovative ICTs supporting the bottom-up appropriation of ICTs through specific methodologies and guidelines since the early 2000s. In 2017 the organization went through a revision of its strategy on the use of ICT4D. Through a facilitated consultation process, new areas for interventions and engagement were identified. Digital technologies were identified not only as tool for providing internal ICT services but also to support organizational delivery. Key areas of action included the improved use of data and information management to support monitoring of SDGs, earth observation technology to strengthen improved production systems and resilience, piloting the use of emerging technologies as blockchain and drones. As part of its work in the area of ICT4D, FAO built strategic partnerships to accelerate the delivery of results: partnerships have been already established with private sector organizations like Google and Telefonica, as well as with UN agencies like ITU and WMO. Furthermore, FAO convened experts in different seminars and workshops to promote knowledge sharing and collaboration in this area (e.g. Digital Agriculture Transformation seminar, the International Symposium on Agricultural Innovation for Family Farming). As part of its support to member countries in the area of ICT4D in agriculture, FAO developed a comprehensive E-Agriculture Strategy Guide to provide governments a guiding framework for governments in developing national e-agriculture strategies. The area of digital agriculture was also incorporated as a new area of work from FAO's Investment Center, which supported the World Bank and the IADB in formulating investments in this area. FAO endorsed the Principles for Digital Development.	http://www.fao.org/e-agriculture/ http://www.fao.org/3/a-i4605e.pdf http://www.fao.org/about/meetings/digital-agriculture-transformation/resources/fao-digital-services-portfolio/en/ http://www.fao.org/about/meetings/agricultural-innovation-family-farmers-symposium/en/ http://www.fao.org/communication-for-development/en/ http://www.fao.org/support-to-investment/news/detail/en/c/1170072/
WFP	WFP has embraced ICTs to increase organizational efficiency and effectiveness. Data is surely at the core of WFP's action to improve the work of the organization, particularly supporting data-driven decision making and increasing accountability to vulnerable populations. Among the most notable initiatives, the mobile Vulnerability Analysis and Mapping (mVAM) is representative as it employs an integrated array of open source digital technologies and low-tech solutions to improve data collection related to food supply in fragile countries and access by vulnerable populations. These technologies allow the mVAM team to create voice-based surveys and automated information hotlines to inform vulnerable populations through traditional phones in their language and at no cost for them.	http://mvam.org/ https://innovation.wfp.org/projects https://innovation.wfp.org/tanzania

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	Partnerships with private sector organizations and United Nations organizations are a key element to improve WFP's work in this area. Within this framework, WFP notably participated to the United Nations Global Pulse, a flagship innovation initiative of the UN Secretary-General on big data. WFP has been experimenting with Global Pulse solutions in the area of Big Data since its establishment through the posting of staff and collaboration across different projects. Another strategic area of focus is that of innovation. Thanks to a partnership with the Government of Germany, WFP established a global *Innovation Accelerator* that identifies, supports and scale up innovative solutions to hunger. The Accelerator supports both innovators inside the organization as well as external private sector organizations through financial support and access to a global network of experts. While focusing on innovation at large, the Accelerator has provided support to a wide range of projects focused on digital technologies. These include the use of blockchain, helping youth to develop digital skills, UAVs for cargo delivery, tackling malnutrition with real-time data, leveraging artificial intelligence and aerial imagery for improved response to emergencies. To complement the work of the Innovation Accelerator, WFP established the first WFP Innovation Hub in Tanzania with the aim of identifying, piloting and scaling up innovations for zero hunger in Tanzania, as well as and make available WFP's field logistics and IT expertise to partners in the region. Like IFAD, WFP is a member of the Better Than Cash Alliance. WFP endorsed the Principles for Digital Development.	
Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA)	The CTA is a renown pioneer in the application of ICT4D in agriculture, with three decades of experience in leveraging digital technologies in the agriculture and rural development domain. CTA promoted the use of Web 2.0 and social media tools for agriculture and rural development by training over 5000 people in African, Caribbean and Pacific Group of States (ACP) countries. In 2013, CTA organized the first ICT4Ag International Conference in Rwanda to engage the global development community in the use of ICTs in agriculture. CTA continues acting upon the recommendations from this conference. At present, CTA focuses on three practice areas: (a) promoting ICTs for resilient agri-food systems and profitable agribusiness; (b) supporting precision agriculture using remote sensing technologies and intelligent management of big and open data among medium and small-scale farmers; and (c) support ICT and entrepreneurship (with a focus on youth) for inclusive agri-food systems and modernised value chains. CTA's projects target four main areas of actions: (a) promoting the application of ICTs to develop value chains; (b) facilitating access to ICT solutions by promoting enabling environments; (c) fostering ICT-enabled innovation and entrepreneurship in agriculture by youth; and (d) providing institutional and grassroots capacity building in the use of ICTs for agriculture. CTA offers a key knowledge sharing service to the whole community working in the area of ICT4D in agriculture, through publication of magazines (ICT Update, Spore), facilitation of mailing lists, dialogue with policy makers, as well as in-country workshops supporting extension service providers, agricultural researchers, farmers and farmer organisations. Among its strategic areas of action, CTA includes the following: (a) collaborate with the private sector to make ICT4Ag Value Added Service (VAS) provision more sustainable; (b) continue to engage with policymakers in creating enabling environments for ICT applications to thrive; (c) support farmers and farmer organisations to go beyond consumers and become service providers to their members; (d) partner with other international development organisations working this area to avoid duplication and have	http://ict4ag.cta.int/ https://ardyis.cta.int/ https://ictupdate.cta.int/en https://spore.cta.int/en

Agency	*Engagement in ICT4D for agriculture*	*Key links*
	greater impact; (e) engage investors in exploring the potential for investing in the sector; and (f) work with researchers to show ICTs impact in the agricultural sector.	
USAID	Among aid agencies, USAID has been a pioneer in the area of ICT4D for agriculture. More recently, USAID launched a three-year collaboration between the U.S. Global Development Lab and the Bureau for Food Security named "Digital Development for Feed the Future" (D2FTF) to advance the ICT4D for agriculture field. Through the D2FTF, USAID supported the development of a set of case studies highlighting how development organizations are using digital tools and technologies to meet their goals more efficiently and effectively in the area of agriculture and rural development. Particularly, the D2FTF focuses on four categories of ICT4D tools, based on evidence on their impact: (1) precision agriculture; (2) digital financial services; (3) data-driven agriculture; and (4) ICT-enabled agricultural extension. Moreover, through D2FTF the use of ICTs tools in these four categories was scaled up through direct technical assistance to Feed the Future programs, capacity building for Feed the Future teams, and strengthening the knowledge base on best practices in digital agriculture and food security. As part of this effort, in 2019 USAID launched the *Digital Frontiers* initiative, a 5-year $75 million to offer support and services to USAID Missions in this area through technical assistance, capacity building, and strengthening best practices. Although not directly targeting agriculture, it is worth noting that USAID tasked a team (i.e. the GeoCenter Plus team) to support the application of advanced data and geographic analysis to international development challenges with the aim of improving the strategic planning, design, monitoring, and evaluation of USAID's programs. The team leverages data and geospatial technologies to increase data-driven decision-making at USAID. It supports expanded and improved collection, management and sharing of data through strategic partnerships (e.g. with the Mapping for Resilience University Consortium, the Foreign Agriculture Service, NASA and other international organizations). Finally, it supports capacity building to integrate data analysis and geographic information for improved decision making of USAID's staff through training and capacity building services to the agency as well as direct technical support (e.g. with mission-based GIS specialists). USAID endorsed the Principles for Digital Development.	https://www.usaid.gov/digitalag https://www.usaid.gov/digital-development/advanced-geographic-and-data-analysis https://www.agrilinks.org/
Federal Ministry of Economic Cooperation and Development of Germany (BMZ)	The BMZ identified ICTs as a key enabler of greater effectiveness. It is expanding the embedding of ICTs in all sectors of its development cooperation and increasing the resources available accordingly. The BMZ selected 7 key areas of focus where it foresees the highest potential of applying ICTs to efficiently and sustainably promote successful development. Among these areas, BMZ explicitly recognized the area of "**Nutrition, rural development, and agriculture**" as a key area of focus. Within this framework, it prioritized the use of ICTs (such as smartphones and mobile phones) to support rural communities – particularly to support the delivery of agricultural information, promoting access to market, accessing weather information and digital financial services to organise their operations more efficiently and increase their earnings. Moreover, the BMZ also highlights the role of geo-referenced data to measure smallholders' property and protect their rights. The BMZ also prioritized the use of ICTs across other action areas to reduce rural/urban digital divide and provide the rural population with better access to education services, financial services, and energy supply thanks to digital technologies.	https://www.bmz.de/en/issues/wirtschaft/nachhaltige_wirtschaftsentwicklung/ikt/digitale_agenda/index.html https://www.developpp.de/en/our-programme-funding-for-development-partnerships-with-business/

Agency	*Engagement in ICT4D for agriculture*	*Key links*
	To tackle the limited access to ICTs in rural areas, the BMZ is supporting the continued expansion of **ICT infrastructure** in its partner countries, especially in rural areas. It is investing in broadband cable, as well as in alternative cost-efficient and innovative network infrastructure solutions to enable low cost access to the Internet. Within this framework, the BGZ provided credits to a consortium of operators to lay the 10,000 kilometre-long Eastern Africa Submarine Cable System (EASSy) to expand internet access and improve connectivity to 250 million people in East Africa. To promote the expansion of energy provision in rural areas in Tanzania and Rwanda, the BMZ promoted the adoption of **off-grid energy** systems that can be paid over mobile phones, supplying more than 21,000 households in both countries. The BMZ also seeks to capitalize digital financial technologies (**FinTech**) in the form of mobile payment solutions and new financial technologies like digital wallet solutions or purely digital currencies, based on innovative blockchain technology. Within this framework, the BMZ is promoting the development of mobile payment systems – e.g. it is supporting the Central Bank of Ghana to expand the use of the 'e-zwich' cashless payment system to rural areas. The BMZ is also supporting the strengthening of customers' rights – e.g. helping the National Bank of Uganda to regulate financial markets. Partnerships are a strategic element of the BMZ's work in this area. Within this framework, one of the mechanisms that the BMZ has been leveraging is that of primary public-private partnership (PPP). Through the develoPPP.de programme, partnerships with SAP to support digital accounting for coffee producers in Uganda and with Biopartenaire's to support cashless payment systems in the cacao sector of Cote d'Ivoire have been established. The BMZ applies the Principles for Digital Development.	