 The Semantic Web and Decision Support in the value Chain of Agricultural: A mapping review.

La Web Semántica (WS) brinda apoyo al almacenamiento inteligente de datos [1], la interoperabilidad [2], sensorización, ubiquidad, e interacción en tiempo real [3] [4] [5]. Considerando que, cada día aumenta la generación de datos empresariales desde diversas fuentes, como sensores, dispositivos wearables, o celulares, la WS se constituye en una importante tecnología de soporte para la integración de su cadena de valor [6].

Sin embargo, existen brechas en la optimización de del uso inteligente de los datos ubicuos, la potencialización de interoperaciones, y la capacidad de inferencia computacional.

En el contexto de la agricultura existe la Cadena de Valor (CV) empresarial, en la cual se analizan costos y valores desde la perspectiva de las utilidades, para aprender, comparar, y entender el origen de la ventaja competitiva y definir estrategias, de resiliencia, panarquía y perfeccionamiento de los procesos [7]. Ésta se divide en eslabones, los cuales trabajan de manera interrelacionada, cooperando con todos los procesos y actores que intervienen en el agronegocio. Siendo los más esenciales a optimizar aquella que comprende las actividades primarias, de operaciones o producción de cultivos [4]. Por lo tanto, para agilizar la CV por medio de las tecnologías semánticas una estrategia es fomentar la predisposición de los generadores de datos (agricultores, expertos, gobierno, consumidores) a colaborar en el modelamiento de la información, por medio de estrategias de ciencia ciudadana, serious game, gamificación, y otras que mejoren la la experiencia de usuario (UX) [8]. Además, incentivar a los desarrolladores de software a utilizar las tecnologías semánticas en sus aplicaciones [9], y así contribuir a la obtención de Sistemas de Soporte a las Decisiones (DSS) precisos y que brinden soporte oportuno [10].

Un concepto emergente es el de “granjas inteligentes” las cuales operan con información recuperada de sensores y/o Sistemas de Procesamiento de Transacciones (TPS) [5] de los eslabones de su CV. Hacen uso de diferentes técnicas computacionales como Machine Learning, Inteligenica Artificial (IA), Data Mining, o métodos estocásticos, para descubrir conocimiento [11] y contribuir a los DSS agrícolas [4]. Estos últimos, solo en sus inicios en 2004 eran 624 [12] y considerando el crecimiento exponencial de la tecnología, hasta la presente la cantidad de datos generados se hace difícil determinar con exactitud. Los DSS manejan datos de manera interna, en el seno de la granja, y la WS, en cambio, trabaja ciñéndose a las 5 estrellas Linked Open Data (LOD)[[1]](#footnote-1) [13] [14]. Por ende, la capacidad de mejorar los recomendadores integrándolas es prometedora, pues se aprovecharía la sabiduría colectiva de los agricultores, almacenadas en minas de datos agrícolas, y la información disponible en la web [15].

El objetivo del presente trabajo es investigar la contribución de las tecnologías semánticas a la Cadena de Valor Agrícola (CVA) por medio de DSS, identificar la concentración de estudios de los DSS semánticos en las fases de producción, las tecnologías utilizadas, las metodologías de investigación aplicadas, los tipos de documentos científicos generados, cultivos que tratan, y las características de los investigadores. La técnica utilizada es el mapeo sistémico, considerando las estrategias de Kitchenham [16], Petersen [17], y Biolchini [18]. La cual permite categorizar la bibliografía actualizada de una área determinada, con la guía de los objetivos y preguntas de investigación [16].

El documento se encuentra dividido en secciones: En la II se planifica el mapeo sistémico, III se evalúa, IV se presentan los resultados, V se analizan los resultados y discute, y finalmente, en la VI se recomienda y concluye.

Ésta investigación pretende ser un documento guía para las personas que toman decisiones tecnológicas con los agrodatos, considerando que no existen mapeos de DSS semánticos en la CVA

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