

# Design of Public Service Transformation in Kulon Progo Regency Towards Agile Governance Through Sistem Informasi Penanganan Stunting (Si Penting) Program

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**Abstract.** Kulon Progo Regency is a district with a high case rate of 14.9 percent in 2021. Stunting is a disease that is the government's focus because it can threaten the nation's future generations. Stunting reduction efforts in Kulon Progo are mapped based on areas involving villages that are the locus of stunting. Handling stunting within the scope of Kulon Progo Regency is still carried out through two handling interventions: specific nutrition interventions to address direct causes and nutrition-sensitive interventions to address indirect causes. The handling of stunting cases in Kulon Progo Regency is also carried out by involving information technology. However, the use of this media has yet to be considered optimal and massive, which is shown by the lack of use by the community and related service delivery units. For this reason, through this development research activity, the proposer conduct a study on the opportunities and constraints of implementing the digital ecosystem, especially in accelerating stunting handling. This is so that monitoring and providing assistance to survivors and prevention can be carried out optimally and according to needs.

## 1. Introduction

The background of this research is the existence of stunting disease in children, which is relatively high in Kulon Progo Regency. Within the scope of this district, the problem of

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stunting is included in the main focus of the government. This is because this district has a high case rate of 14.9 percent in 2021. This figure results from the government's efforts to slowly reduce the percentage of stunting incidence in children from previous years [1]. Stunting itself is one of the problems in the health sector that requires attention to handling. Stunting is a condition where the height of a child or toddler turns out to be shorter than the height of other people in general or children/toddlers their age [2]. Chronic nutritional problems in toddlers are the main cause of stunting. This can be caused by insufficient nutritional intake for a long time due to parents or families needing to be made aware to provide food that suits their children's nutritional needs [3].

Stunting reduction efforts in Kulon Progo are mapped based on areas involving villages that are the locus of stunting. The distribution of Kulon Progo's stunting cases is divided into several village areas that are the locus of the countermeasures. Based on data, the focus of stunting handling in Kulon Progo in 2020 is mainly in Samigaluh District, which has five villages; Pengasih District has two villages; Sentolo District has one village; Nanggulan District has one village, and in Galur District there is one stunting locus village [4]. The ten villages referred to as the focus of stunting mitigation in Kulon Progo Regency itself are:

- Karangsari Village (Pengasih District)
- Sendangsari Village (Pengasih District)
- Donomulyo Village (Nanggulan District)
- Nomporejo Village (Galur District)
- Tuksono Village (Sentolo District)
- Kebonharjo Village (Samigaluh District)
- Pagerharjo Village (Samigaluh District)
- Sidoharjo Village (Samigaluh District)
- Gerbosari Village (Samigaluh District)
- Ngargosari Village (Samigaluh District)

Seeing the number of villages that are the focus of handling stunting, of course, requires a collaborative effort between stakeholders in the region so that later problems related to the sustainability of public health can be resolved optimally. Handling stunting within the scope of Kulon Progo Regency is still being carried out through two handling interventions, namely specific nutrition interventions to address direct causes and sensitive nutrition interventions to address indirect causes [5]. This effort is actually a good thing if it is really given directly through active community counseling. However, some communities sometimes still do not consciously provide appropriate nutrition to children, so in this case, it requires an information disclosure that is easily accessible to the community. For this reason, handling stunting at the regional level is not only about monitoring child development conventionally but the use of information technology is also needed to assist in overcoming stunting so that it can be maximized.

The use of information technology can also be used well for local governments in handling stunting, considering that this case is not only the responsibility of one of the Regional Apparatus Organizations, but all units related to this case. Through open access to information technology, it will be easier for each unit to design programs according to actual data. Information technology has an excellent opportunity to be used as an integrated forum to assist in monitoring and evaluating the implementation of stunting handling so that it can be more significant and effective. For this reason, this study examine and apply Information and Communication Technology (ICT) media to the government environment in Kulon Progo Regency in dealing with stunting. Based on this, this paper examine the design of

public service transformation in stunting reduction in Kulon Progo through Sistem Informasi Penanganan Stunting (Si Penting) as a step towards a smart government.

Based on the background described above, this study has a specific objective: the design of public service transformation in Kulon Progo Regency towards an intelligent government in stunting reduction. The urgency of this research is as a solution to solving problems regarding efforts to reduce the risk of stunting in children in Kulon Progo Regency, which has been explained in the background of the research in the form of an integrated countermeasures information system design within the scope of Kulon Progo Regency.

Various studies on handling stunting in children have grown positively, where the position of children as the hope of future generations deserves to be guaranteed health. Efforts to overcome stunting basically require the synergy of all parties, be it the government, the private sector, universities, and the community. One of the efforts that can be done is through parenting programs, which various institutions carry out synergistically. The pressure of this parenting program is to empower parents through the provision of various kinds of information and insights to family members about stunting prevention [6].

This is because there are still many people who do not know about stunting, both from understanding the meaning of stunting, causes, impacts caused to countermeasures that can be done [7] [8]. In conducting briefings for parents, it is important to be given primary education about knowledge in providing adequate intake to support children's growth and development, one of which is about nutrition. This is certainly so that the chances of stunting in children become small with a strong understanding from parents in supporting growth through the fulfillment of appropriate nutrition [9].

In its development, efforts to deal with stunting that have been carried out generally have obstacles, such as there still needs to be an information system about stunting that is easily obtained by the community. This makes it one of the aspects that causes the slow resolution of stunting problems, so it is considered necessary to have an information system that can help the community efficiently and quickly handle stunting [10]. This is corroborated by the opinion Setyowati, which says that the ignorance of parents in providing adequate nutrition to children is one of the reasons because there is no supporting information media related to feeding practices in Baduta that are in accordance with local conditions [11]. For this reason, this condition requires encouragement to provide education through various media, including information media.

Researchers use agile governance theory to facilitate public service transformation design in stunting management in Kulon Progo. Agile governance is an ongoing readiness to navigate change quickly, proactively, or reactively by embracing and learning from the change, while providing actual contribution or final value felt by users [12]. This is certainly very related to the handling of stunting commanded by the government through affiliated regional apparatus organizations (OPD) due to the rapidly growing conditions of the era supported by the availability of access to technology that makes everything dynamic. This condition certainly has consequences that make the government act swiftly in providing public services to the community so that existing and fundamental problems can be resolved properly and optimally. The points that are the basis for implementing agile governance according to [13], namely:

a. Condition and Risk Analysis

Resulting in changes in the form of physical, but also changes in rules, as well as other conditions. For this reason, stakeholders who have a role need to conduct continuous analysis related to external conditions, changes in these conditions, and the risk landscape that may be generated.

b. Goal Setting

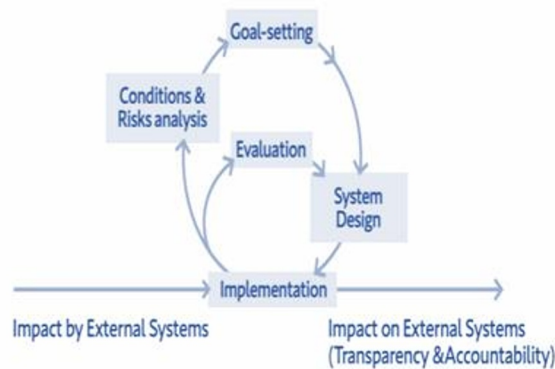
The implementation objectives of governance must be reviewed more deeply and carried out repeatedly in accordance with every change that occurs, both external conditions and technological impacts.

c. Designing Governance Systems

The system of government must be designed based on predetermined goals. Regarding this, system design is related to designing technological systems and organizations, systems, and applicable rules. It must also align with transparency and accountability, stakeholder participation, inclusiveness, responsibility, and follow-up improvements.

d. Operation, Monitoring, and Accountability of Governance Systems

This relates to the governance operation process regulated by the system. Actors must periodically monitor the operating status of the system based on real-time data and other inputs.



**Fig 1.** Basic Concepts of Agile Governance  
Source: [13]

## 2. Methodology

This research uses qualitative research methodology with a case study approach. The selection of qualitative methodology with a case study approach has gone through special considerations, that an effort to deal with social problems of the community needs to be studied in depth in order to formulate empirical solutions and according to needs. Departing from this issue and coupled with the fact that the high stunting rate in Kulon Progo Regency makes systematic and measurable handling necessary so that later the alleviation of stunting cases can run optimally. The Kulon Progo District Health Office as an authority related to health handling including stunting is a case study in reviewing the design of public service transformation in stunting reduction. This study use qualitative research methodology to examine related regulatory documents, challenges, and programs that become efforts in practice. There are two types of data collection efforts in this study: literature studies and interviews with informants.

The literature study aims to obtain data related to programs that have been implemented as well as support from related regulations, and interviews that will be conducted to obtain primary data from informants who are not covered in the literature study. The informants in this study consisted of the Head of the Kulon Progo District Health Office, the Head of the Communication and Information Office of Kulon Progo Regency, and the Head of the

Community Empowerment and Kalurahan Office of Kulon Progo Regency. The location in this study is in Kulon Progo Regency where the location determination is based on data obtained from various sources that show stunting cases in this district are categorized as quite high. This will be related to efforts to implement public services in the aspect of stunting alleviation through information technology-based transformation. Qualitative data analysis that has been collected has been analyzed using an interactive model which includes three focus of analysis, namely: first, data reduction to sort data results according to research needs; second, the presentation of data to describe the results of data sorting; Third, draw conclusions to find out the final results of the research that has been done.

### **3. Research and Discussion**

Handling stunting is basically an obligation for the government, considering that this disease greatly affects the sustainability and future of the nation's generation. Within the scope of Kulon Progo Regency, handling stunting itself is part of the duties of the Community and Village Empowerment Office in the field of Family Planning (KB). Previously, the leading sector in accelerating stunting was held by the Health Office, but since early 2023 it has shifted to the Family Planning field of the Community and Village Empowerment Office. This is because when the Health Office becomes the leading sector, the family planning field is always involved. So that when the field is considered ready, the authority in handling stunting is delegated from the Health Office. The focus of the Health Office after this transfer of authority is regarding Health Operational Aid which has links to health-specific nutrition interventions. In addition, it also includes health services, improving pregnancy nutrition, disease prevention and control, and public health. Although currently no longer a leading sector in accelerating stunting treatment, the Kulon Progo Health Office is still leading in 8 convergence actions. The maskud of the convergence action is an instrument in the form of activities with the aim of increasing interventions to accelerate integrated stunting reduction by actors at the regional level which are carried out in a systematic, integrated and sustainable manner [14].

Seeing that stunting handling needs to be done systematically, of course it requires a mechanism that suits the needs as well. The rapid development of Information and Communication Technology (ICT) is also a potential to be used as a medium in assisting handling based on real time data collection, so that monitoring and assistance to survivors can be provided optimally. Within the scope of Kulon Progo Regency, the use of information technology has been carried out in the health sector, namely in the form of the BumilKu application. This application is a pioneer in striving for data collection and monitoring of pregnant women whose database can be used to see the risk of stunting. However, in its development, the use of this media has not been considered optimal and massive, which is shown by only several clinics and villages that implement it.

The Communication and Information Office of Kulon Progo Regency, as a unit that has duties and functions in providing information technology, is also a service provider for other agencies that need the development of digital media to assist in implementing the program. The prototype of the digital ecosystem in Kulon Progo Regency is directed to be integrated into a single entity. This concept, is expected to facilitate the implementation of community service delivery, including answering the problem of stunting in this district. The use of digital media, especially those integrated with social media, also shows great potential to bridge the provision of health interventions to the community [15]. In addition, to realize interventions with the Community and Village Empowerment Office in the field of Family

Planning (KB) and the Kulon Progo District Health Office, where the unit has a relationship with Health, especially handling stunting.

Seeing that there are quite a lot of sectors that are directed to be involved in the implementation of an integrated ecosystem, it certainly requires a clear legal and regulatory basis, considering that this program involves various elements of task implementation within Kulon Progo Regency. For this reason, it is a shared responsibility to realize optimal and efficient services through adaptive and agile steps. This is because an organizational structure with a process of division of labor and tasks needs to be divided fairly according to competencies that are grouped and coordinated formally [16]. So, this requires a solid legal umbrella so that the program's implementation can run optimally.

In addition to the local government organizational unit, realizing an excellent stunting handling system also requires synergy between supporting units in the Kulon Progo Regency. The mechanism that can be formed is through the pentahelix collaboration pattern by actively involving various components that are certainly based on a common vision and goals. This collaboration is directed to achieve a goal that needs to involve other parties to achieve maximum results. This concept is in line with the purpose of the establishment of this Si Penteng System because it combines a variety of data spread across all organizational units and regions in Kulon Progo Regency so that sufficient resources are needed to conduct data collection and condition mapping so that it can be described properly. In addition, this collaboration is expected to facilitate the government in providing maximum public services, which is due to technical assistance from parties through various forms of support to strengthen the foundation of the program so that it can be formed optimally. The pentahelix concept itself is an interaction or relationship carried out between private parties, academics, society, government, and the media [17]. For this reason, through the Si Penteng system, it is hoped that all relevant parties will synergize and collaborate to optimize the acceleration of stunting reduction and prevention through an integrated system in Kulon Progo Regency.

The Kulon Progo Regency Government, which includes the levels below, has the responsibility to integrate, synchronize, implement interventions, mobilize multisectoral and monitor activities related to the acceleration of stunting reduction and integrated prevention in Kulon Progo Regency through the Sistem Informasi Penanganan Stunting (Si Penteng). This handling can be done by mobilizing units related to stunting at the district and village levels. It is hoped that synergy between levels of related institutions based on data collected in an integrated and actual manner, it can facilitate in providing targeted and appropriate handling. For the private element, it can be described by the role of presenting technological infrastructure, which, if not fully, can be done by the Kulon Progo Regency Government. This condition is considering that there are still some areas that do not fully have internet access, which in the Si Penteng program is quite important because it involves data collection and other information needs.

Other actors that can be involved next, namely academics, have a role as drafters who contribute to developing research and technology, developing concepts, the latest and relevant theories, and strengthening human resources (HR) in a position as mentors in resource capacity development. This is considering the position of academics as parties who have intellectual space so that it can be considered to be a balancer of concepts formed by the government so that it can run ideally. Then the community has a role as a liaison between stakeholders to assist the community in following the whole process and driving efforts to accelerate the reduction and prevention of integrated stunting in Kulon Progo Regency through the implementation of the Sistem Informasi Penanganan Stunting (Si Penteng). Finally, the involvement of the media, which has a role in supporting the publication and

promotion of the Sistem Informasi Penanganan Stunting (Si Penteng), can more easily expand to all levels of society to facilitate technical handling in the future.

Sistem Informasi Penanganan Stunting (Si Penteng) is actually not the first health monitoring platform. Within the scope of Kulon Progo Regency itself previously had a platform called BumilKu. The purpose of this platform is to see the number of pregnant women in Kulon Progo, along with data on high risk, pregnant women who will give birth, the distribution of the location of pregnant women displayed through a map in real time. Resources carry out this data collection mechanism in the form of regional midwives, who are the frontline parties to monitor the condition of pregnant women. However, in its journey, this platform has obstacles that have resulted in its development being stalled due to its development has not been optimal because it has not been massively carried out and is not balanced with good governance between the stakeholders involved.

Seeing that there is a space that has not been handled properly, making the concept of the Si Penteng program feels that it can be done according to needs. The concept presented by this platform is focused on handling stunting in detail. The description of the mechanism that can be done is that later the platform will be directed to collect data on pregnant women spread across Kulon Progo Regency. The resources used to conduct data collection are midwives and health facilities that have facilities related to pregnancy and childbirth. This data collection process can later be coordinated by the clinics in each sub-district so that the data collection process can be well coordinated. Through the use of health facilities in villages and sub-districts, it will facilitate monitoring of the condition of pregnant women and newborn children. This is of course midwives and related health facilities can help in monitoring children's growth and development conditions which can be updated data over time in real-time. The data collection process is adjusted to the needs and practice schedules in each health facility. In addition, pregnant women can be registered to use this platform when they first conduct a pregnancy consultation. This is so that they can update data independently so that it can be monitored directly by relevant health workers. This mechanism can certainly make it easier for midwives and other health workers considering that updating the data can be done by pregnant women or by health workers when pregnant women come directly to health facilities or health workers who go directly to the community if cases are found.

Data collection on the Si Penteng platform will also be directed to display a variety of data regarding the distribution of pregnant women and the condition of postnatal toddlers. The display can also be adjusted to be easy to understand and accurate, so that when an emergency case is found, health workers can handle it as needed and also to be measured. This Sistem Informasi Penanganan Stunting (Si Penteng) will also be able to display information about recommendations for intake needs and guidelines if you experience symptoms during pregnancy. In addition, this platform will also be connected to maps and information about nearby health facilities so that later when experiencing an emergency, pregnant women can get information about health facilities that are ready to handle. The Si Penteng Program basically involves many parties in its implementation, both between Regional Implementing Units and between other institutions. For this reason, this program requires a strong database and inter-sector commitment to be sustainable. In addition, health workers and the public, especially pregnant women, need to be given in-depth socialization about the use of the platform so that later, this forum can be used properly to solve problems regarding stunting, which is quite important to be done as soon as possible. The use of the platform itself will impact the success of reducing the spread of stunting, considering that

this platform was formed to facilitate handling and resource power efficiency in achieving common goals.

#### 4. Conclusion

Stunting is one of the problems in the health sector that requires attention in terms of handling. Stunting is a condition where the height of a child or toddler turns out to be shorter than the height of other people in general or children/toddlers their age. The problem of stunting in Kulon Progo is reasonably necessary to be handled, considering the spread of cases that are quite a lot. The distribution of Kulon Progo's stunting cases is divided into several village areas that are the locus of the countermeasures. Based on data, the focus of stunting handling in Kulon Progo in 2020 is mostly in Samigaluh District, which has 5 villages, Pengasih District has 2 villages, Sentolo District has 1 village, Nanggulan District has 1 village, and in Galur District there is 1 stunting locus village.

The concept of the Sistem Infomrasi Penanganan Stunting (Si Penting) platform is proposed to be an alternative to handling stunting in Kulon Progo. This can be seen in how the formulation of the program concept is directed as a monitoring and information system for pregnant women, especially in cases of stunting. It can be seen in this concept that there is a pattern of collaboration between sectors through interconnected interactions to create more measurable and conditionally appropriate handling. The realization of this concept certainly requires synergy between sectors committed to results to achieve common goals so that later, the guarantee of program implementation can be sustainable.

#### References

- [1] S. C. Putri, "Angka Stunting di Kulon Progo 2021 Capai 14,9 Persen, Menyamai Target Nasional 2024," *jogja.tribunnews.com*, 2022. <https://jogja.tribunnews.com/2022/03/22/angka-stunting-di-kulon-progo-2021-capai-149-persen-menyamai-target-nasional-2024>
- [2] Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi, *Buku Saku Desa Dalam Penanganan Stunting*. 2017.
- [3] W. Lestari and L. Kristiana, "Stunting : Studi Konstruksi Sosial Masyarakat Perdesaan Dan Perkotaan Terkait Gizi Dan Pola," *AspirasiJurnal Masal. Sos.*, vol. 9, no. 1, pp. 17–33, 2018, [Online]. Available: <http://jurnal.dpr.go.id/index.php/inspirasi/index%0ASTUNTING>
- [4] karangsari-kulonprogo.desa.id, "Review Perbup RAD Stunting | Irisan Masalah di 2 Wilayah Lokus Stunting Kulon Progo," *karangsari-kulonprogo.desa.id*, 2020. <https://karangsari-kulonprogo.desa.id/index.php/artikel/2020/11/14/review-perbup-dan-rad-stunting-irisan-masalah-stunting-di-2-wilayah-lokus-kulon-progo>
- [5] kominfo.kulonprogokab.go.id, "Penurunan Stunting Di Kulon Progo Dilakukan Secara Terintegrasi," *kominfo.kulonprogokab.go.id*, 2022. <https://kominfo.kulonprogokab.go.id/detil/1760/penurunan-stunting-di-kulon-progo-dilakukan-secara-terintegrasi#:~:text=Penurunan Stunting Di Kulon Progo Dilakukan Secara Terintegrasi,-Dikirim oleh mcharry&text=Wates – Upaya penurunan stunting dilaksanakan>
- [6] Ihat Hatimah and Dadang Yunus Lutfiansyah, "Pendampingan Keluarga Melalui Program Parenting Untuk Menekan Angka Stunting Di Kabupaten Cirebon," *Jurnal Ilm. Abdimas*, vol. 3, no. 1, pp. 123–133, 2022, [Online]. Available: <https://journal.ikopin.ac.id/index.php/ecoopsday/article/view/1419/1125>



- [7] R. Rahmawati *et al.*, “Sosialisasi Pencegahan Stunting Untuk Meningkatkan Sumber Daya Manusia Unggul,” *J. Pembelajaran Pemberdaya. Masy.*, vol. 1, no. 2, p. 79, 2020, doi: 10.33474/jp2m.v1i2.6512.
- [8] Erlita Firdanti, Z. Anastya, N. Khonsa, and R. Maulana, “Permasalahan Stunting Pada Anak Di Kabupaten Yang Ada Di Jawa Barat,” *Open Data Jabar*, no. 11, pp. 126–133, 2020, [Online]. Available: <https://opendata.jabarprov.go.id/id/infografik/wisatawan-di-jawa-barat>
- [9] P. Wididati, H. Nurcahyanto, and A. Marom, “IMPLEMENTASI KEBIJAKAN PENANGANAN STUNTING DI KABUPATEN LOMBOK TIMUR (STUDI KASUS DI DESA LENEK DUREN KECAMATAN LENEK),” *Progr. Stud. Adm. Publik UNDIP*, pp. 1–16, 2019.
- [10] A. Fatkhudin, Y. Prabowo, T. A. Wicaksono, M. Informatika, U. Muhammadiyah, and P. Pekalongan, “SISTEM INFORMASI PENCEGAHAN STUNTING PADA,” no. 02, pp. 12–20, 2021.
- [11] H. Setyowati, I. Sofiyanti, and H. Windayanti, “Penyusunan Media Informasi Tentang Praktik Pemberian Makan Untuk Mencegah Stunting Pada Anak Baduta,” *Indones. J. Midwifery*, vol. 1, no. 2, pp. 111–119, 2018, doi: 10.35473/ijm.v1i2.83.
- [12] M. Stephens and Raed Awamleh, *The Heart of an Agile Government - Future Public Value*, no. February 2020. 2020.
- [13] METI, *Governance Innovation Ver.2 A Guide to Designing and Implementing Agile Governance*. 2021. [Online]. Available: [https://www.meti.go.jp/english/press/2021/0730\\_001.html](https://www.meti.go.jp/english/press/2021/0730_001.html)
- [14] Bappeda.metrokota.go.id, “Bimbingan Teknis Pelaksanaan 8 Aksi Konvergensi Percepatan Penurunan Stunting Terintegrasi Kota Metro Tahun 2022,” *bappeda.metrokota.go.id*, 2022. <https://bappeda.metrokota.go.id/bimbingan-teknis-pelaksanaan-8-aksi-konvergensi-percepatan-penurunan-stunting-terintegrasi-kota-metro-tahun-2022/#:~:text=8 aksi konvergensi merupakan instrumen,secara sistematis terintegrasi dan berkelanjutan.> (accessed Jun. 25, 2023).
- [15] A. P. Sunjaya, “Potensi, Aplikasi dan Perkembangan Digital Health di Indonesia,” *J. Indones. Med. Assoc.*, vol. 69, no. 4, pp. 167–169, 2019, doi: 10.47830/jinma-vol.69.4-2019-63.
- [16] S. P. Robbins, *Perilaku Organisasi II*. Jakarta: PT Prenhallindo, 1996.
- [17] S. Yunas, “Implementasi Konsep Penta Helix dalam Pengembangan Potensi Desa melalui Model Lumbung Ekonomi Desa di Provinsi Jawa Timur,” *Matra Pembaruan J. Inov. Kebijak.*, pp. 37–46, 2019, [Online]. Available: <https://doi.org/10.21787/mp.3.1.2019.37-46>