

opción

Revista de Antropología, Ciencias de la Comunicación y de la Información, Filosofía,
Linguística y Semiótica, Problemas del Desarrollo, la Ciencia y la Tecnología

Año 35, 2019, Especial N°

19

Revista de Ciencias Humanas y Sociales
ISSN 1012-1587/ ISSNe: 2477-9385
Depósito Legal pp 198402ZU45



Universidad del Zulia
Facultad Experimental de Ciencias
Departamento de Ciencias Humanas
Maracaibo - Venezuela

Sustainability of peacebuilding in aceh: an application of New Aceh scenario framework

Afrizal Tjoetra

¹Faculty of Political and Social Sciences, University of Teuku Umar,
Meulaboh, Aceh Barat, Indonesia
atjoetra@utu.ac.id

Fiandy Mauliansyah

²Faculty of Political and Social Sciences, University of Teuku Umar,
Meulaboh, Aceh Barat, Indonesia
Fiandymauliansyah@utu.ac.id

Mursyidin

³Faculty of Political and Social Sciences, University of Teuku Umar,
Meulaboh, Aceh Barat, Indonesia
Murysidinza@utu.ac.id

Nellis Mardhiah

⁴Faculty of Political and Social Sciences, University of Teuku Umar,
Meulaboh, Aceh Barat, Indonesia
Nellismardhiah@utu.ac.id

Jumadil Saputra^{5*}

⁵School of Social and Economic Development, Universiti Malaysia
Terengganu, 21030 Kuala Nerus, Terengganu, Malaysia

*Corresponding author: jumadil.saputra@umt.edu.my

Abstract

The social change investment is continuously employed by Civil Society Organizations (CSOs) in Aceh. One of the efforts is to compile the documents of the Future Aceh Scenario (2007 - 2017). This study aims to determine the achievements of current changes compared to the time of the preparation of 2007 documents. The results obtained relate to the agenda of CSOs in Aceh to realize the New Aceh followed by the transformation of the roles and issues that CSOs have conducted in Aceh through policy advocacy, and actions related to the economic and social empowerment of communities.

Keywords: Civil Society Organization, Social and Economic and Empowerment Action, Peacebuilding Sustainability, Good Governance and Clean Government.

Sostenibilidad de la construcción de paz: aplicación del nuevo marco del escenario de Aceh

Resumen

La inversión en el cambio social es continuamente empleada por las Organizaciones de la Sociedad Civil (OSC) en Aceh. Uno de los esfuerzos es compilar los documentos del Escenario Futuro de Aceh (2007 - 2017). Este estudio tiene como objetivo determinar los logros de los cambios actuales en comparación con el momento de la preparación de los documentos de 2007. Los resultados obtenidos se relacionan con la agenda de las OSC en Aceh para realizar el Nuevo Aceh seguido de la transformación de los roles y problemas que las OSC han llevado a cabo en Aceh a través de la promoción de políticas y acciones relacionadas con el empoderamiento económico y social de las comunidades.

Palabras clave: Organización de la sociedad civil, Acción social y económica y empoderamiento, Sostenibilidad de la construcción de la paz, Buen gobierno y Gobierno limpio.

1. INTRODUCTION

After the peace agreement between the Republic of Indonesia (RI) and the Free Aceh Movement (Gerakan Aceh Merdeka, GAM) on 15 August 2005, the people of Aceh have experienced some political momentum. The first moment of the transition period was the Election of Regional Head (Pilkada) in 2006. Next, during the era of peacebuilding, the people of Aceh also passed some political momentum such as the 2009 General Election, 2012 Regional Election, 2014 General Election, and 2017 Regional Election. As events and circumstances prevail, social change investments continue to be made by CSOs in Aceh, both during the conflict, post-disaster and post-peace agreement. Efforts are made by the changing circumstances prevailing in Aceh. Based on Juanda (2011) the transformation of armed conflict into the democratic era requires the

concrete agenda and action of civil society and CSOs. Based on the Consortium Aceh Baru (New Aceh Consortium) (2011) it is described that one of the efforts of CSOs to support the change is to produce a document of the Future Aceh Scenario (2007-2017). This scenario was the Aceh CSO's political initiative in 2007 to orient Aceh's future based on past experiences of both gloriousness and the darkness of conflict.

The document also became an early warning for the people and the Government of Aceh over 4 (four) circumstances described as Aceh Lama (Old Aceh) I, Aceh Lama II, Aceh Hancur (Destroyed Aceh) and Aceh Baru (New Aceh). The agenda for the preparation of the Aceh Future Scenario (2007-2017) was produced through a workshop by the Aceh Judicial Monitoring Institute (AJMI) in cooperation with the Tifa Foundation. Furthermore, the dissemination of this document was followed up by the Acehnese Civil Society Task Force (ACSTF). As a novel strategy, in 2011, an evaluation related to the future of the Aceh Scenario and agreed formulation of the revision result was in the form of a general framework of the idea of Aceh CSO. This means that the resulting document becomes the framework. So that idea can direct the strategy and agenda of CSO in Aceh within the period 2012 - 2017 (New Aceh Scenario Evaluation Document, 2011). Changes continue in Aceh, all social, cultural, economic, and political. How does the role of CSO ensure the sustainability of peace in Aceh? This is a major challenge for various components of the Acehnese society, including CSOs that during the conflict period have participated in encouraging the establishment of a peace agreement.

2. METHODOLOGY

This study uses a qualitative approach. Data was collected through literature review and in-depth interviews with selected sources. Literature review to obtain secondary data in the form of the New Aceh Scenario document produced by the New Aceh Consortium as well as the results of expert studies on Civil Society Organizations and peace. Furthermore, data analysis takes place from the collection process to achieve the research objective. Data analysis is carried out through the process of verification of data reduction, data presentation, and concluding.

3. THE CONCEPT OF THE NEW ACEH SCENARIO AND CIVIL SOCIETY ORGANIZATIONS

In general, this section discusses two (2) concepts: the development of the New Aceh Scenario and the CSO. First, the New Aceh scenario is a post-conflict situation. This scenario includes the possibilities for the future of Aceh through Focus Group Discussion (FGD), with various participants, both from Aceh and Jakarta especially from civil society. The future scenario of Aceh is built in four circumstances: Aceh Lama I, Aceh Lama II, Aceh Hancur, and new Aceh. The Aceh Lama I scenario combines the variants of a pro-people economic system with a failed peace situation. The scenario of Ancient of Aceh II is a mix of variants of the pro-capital economic system with the ongoing peace situation. While the scenario destruction of Aceh combines the variation of pro-capital owner economic orientation with a failed peace situation. Next, the expected scenario is the scenario of new Aceh, a scenario that is a combination of

pro-equality economic orientation with a conducive and sustainable peace situation (Scenario Overview of Aceh). The four conditions are an open possibility in the future because Aceh is still in the stage of conflict transformation. Therefore, systematic efforts should be made to provide an Aceh development orientation that embodied and based on the indicators of the New Aceh Scenario (Zardenbekm et al., 2016).

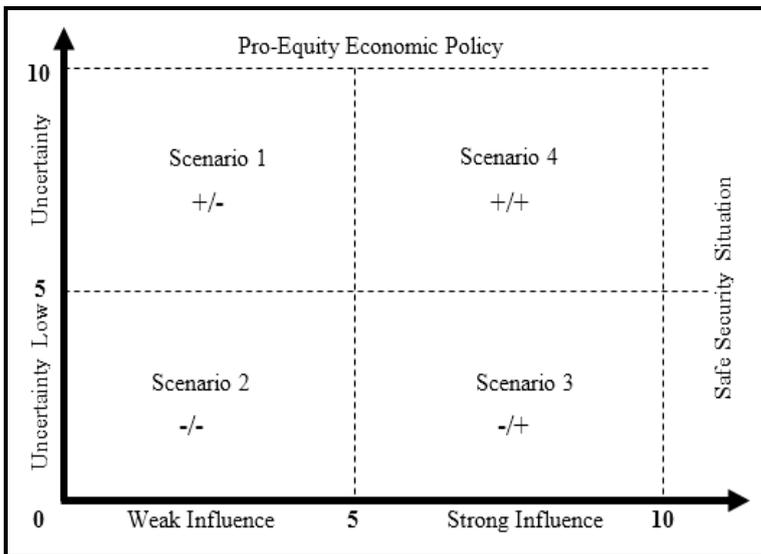


Figure 1: New Aceh Scenario Framework
Source: Draft Scenario of Future Aceh (2007-2017)

Note: 1. Equity Economy in a chaotic situation, 2. Pro-Capital Economy in a chaotic situation, 3. Pro-Capital Economy in a Safe Situation, 4. Equity Economy in a Safe Situation

Under the scenario, Aceh's development is based on a pro-poor economic and security spirit that is maintained into two important variants and must be done in the form of concrete actions for new Aceh. Some

efforts to strengthen people's economic base (agriculture, plantation, fishery, and livestock) systematically need to be done. The approach is strengthening human resource capacity to support economic strengthening, strengthening institutions and market systems to maintain product stability and technological interventions to improve production and processing of yields. With the creation of strong community economic conditions, it is believed to have a positive effect on security conditions. Here is an overview of the possible economic situation:

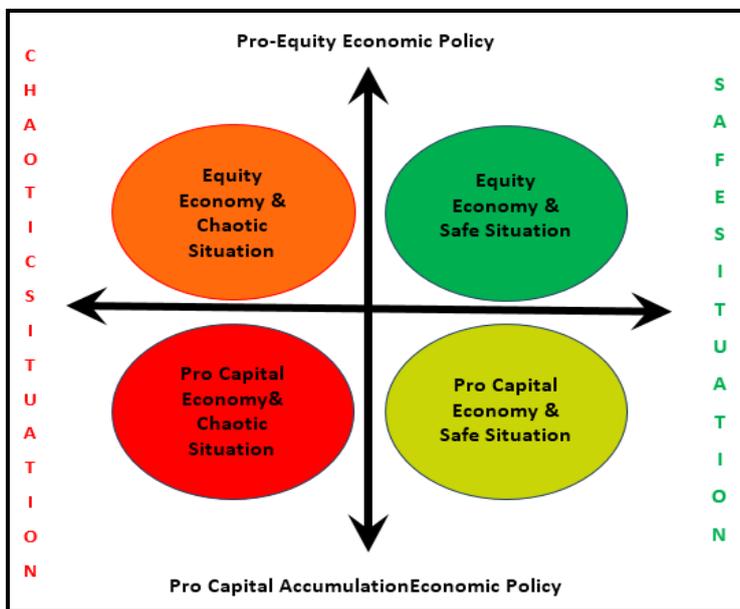


Figure 2: New Aceh Economic Policy
Source: Draft Scenario of Future Aceh (2007-2017)

Figure 2 above displays the ideas of New Aceh contained in this scenery are not an absolute, but a square that can be used as navigation to orient the development of the Acehnese people in a better direction.

Therefore, efforts to realize the New Aceh need the initiative and creativity of all parties, both those in Aceh and outside Aceh (Evaluation on Aceh Transitions, 2011; Arman et al., 2016).

3.1 The concept of CSO and its development in Aceh

Civil society is the context or arena, in which a person becomes aware, a politically conscious person when it becomes part of civil society. It works to make changes and make history. There are many CSOs before 1990 that are local, communal, and religious, under bow political parties. However, it was then that NGOs (as part of CSOs) emerged and became known (Otto Syamsuddin Ishak, 2008). The term Civil Society Organization or CSO is regarded as a different entity from government institutions and market institutions (business). As a reference, Culla (2006) presents the concept of civil society in the following Figure 3 as below:

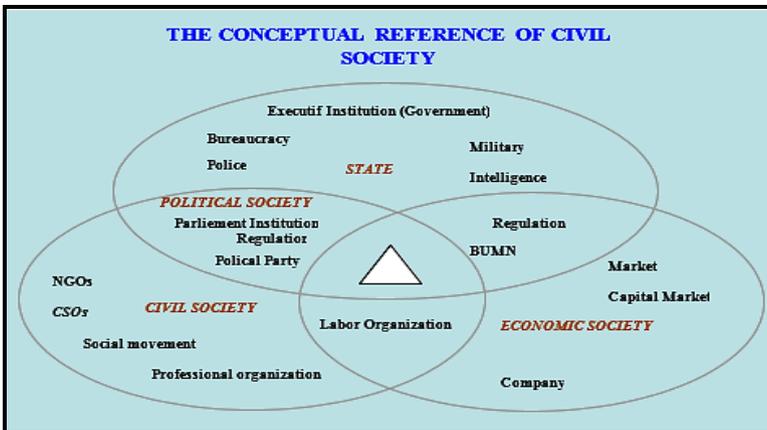


Figure 3: Conceptual Reference of the Civil Society
Source: Adi Suryadi Culla (2006)

For CSOs in Aceh, there are 2 (two) major challenges to ensure their role in sustainable peacebuilding. First, external challenges include changing political and governance conditions - both nationally and locally, unfavourable national policies for CSOs in Aceh, and much-reduced donor assistance. Second, internal challenges of CSOs in Aceh are the ability to manage resources (human and network), sporadic agendas, transparent and accountable institutions management, poor documentation, and vulnerable to disunity within an institution¹.

4. DISCUSSIONS

4.1 The Role of CSOs in Aceh to Create a New Aceh

After the signing of the Helsinki MoU and the tsunami disaster, CSOs in Aceh focus more on humanitarian issues and peacebuilding. Its main activity was related to the fulfilment of community rights in rehabilitation and reconstruction and reintegration. The efforts have received support from various organizations, both nationally and internationally. The enormous natural disaster in Aceh had triggered the presence of international assistance, both to address emergencies and long-term rehabilitation and reconstruction programs. As stated in the master plan, the reconstruction activities not only focus on physical infrastructures, such as housing, road, and market infrastructure but also develop the social structure of the community by allowing the Acehnese

¹This idea is the development of input from Rizal Usman (*Konsorsium Aceh Baru* or New Aceh Consortium) as one of the speakers in The Multistakeholder Forum: Support for Sustainable Positive Peace in Aceh, April 13 and 14, 2015, Oasis Atjeh Hotel - Banda Aceh.

people to participate in building governance. In this context, CSO strengthening is required to play an active role in rebuilding the lives of people in Aceh (Sutoro, 2012). The following is a description of 3 (three) roles of CSOs in Aceh related to policy advocacy, advocacy on good and clean government, and action related to economic and social empowerment of the community (Usen et al., 2016).

4.2 CSO Participation in Policy Advocacy

One of the real forms of NGOs work in Aceh in policy advocacy was to encourage the establishment of a Special Autonomy Law for Aceh that was processed in a participatory manner and accordance with the wishes of the people. This law was then referred to as the Law on Governing of Aceh (LoGA). In advocating this law, CSOs in Aceh were building on intensive communication with political parties, as a strategy to control and oversee the legislative process of the LoGA in parliament (Fahmi, 2014). This advocacy process was carried out by several NGOs who joined the JDA. This network was formed and initiated by several activists and supported by several other civil leaders. Some organizations are incorporated in this JDA, among others ACSTF, ADF, AJMI, Aceh Institute, KMPD, KontraS Aceh, Koalisi NGO HAM, Flower, Mispil, APF, Forum LSM Aceh, SoRAK Aceh, Lappeka, KKP Aceh, PDRM, Forum Akademisi Aceh (FAA), Katahati Institute, Yappika, Cetro, ELSAM, KontraS Jakarta, Imparsial, Perkumpulan Demos, Aceh Kita, HRW, and Konsorsium Aceh Baru (KAB) (Fahmi, 2014).

Also, KAB's important effort was to build the New Aceh Scenario. Efforts were made to provide support to the community and the Government of Aceh in implementing post-conflict development. The resulting scenario documents were socialized to various components, such as youth groups, women, farmers, fishermen, academics, and Aceh government. However, there is also a view that after the Helsinki MoU, the conditions of the CSO movement have diminished due to the completion of the rehabilitation and reconstruction work. Also, there is an assumption that the peace of Aceh has been realized so that the programs can realize that the peacebuilding is not the focus of the support institutions and foreign donors anymore. Donors' perception should be more visionary, foresee the future, not only based on the present condition (after peace). The responsibility for maintaining the sustainability of Aceh's peace must also be the responsibility of those countries and institutions who have supported Aceh peace, not only limited to making peace and then considering the whole duty is done (Juanda Djamal, Activist ACSTF, 22/11/2013, in Fahmi, 2014).

4.3 Advocacy on Good Governance and Clean Government

A number of CSOs in Aceh through the support of national and international organizations have implemented a number of programs, such as those implemented by the Aceh Development Fund (ADF) with its partners i.e., Pugar, Pemberdayaan Ekonomi Rakyat (PERAK), PASKA, Yayasan Pengembangan Kawasan (YPK) Aceh Barat, Perkumpulan BIMA, and Lembaga Pengembangan dan Pembinaan Masyarakat (LPPM) Aceh. The implemented program is known as ANCORS (Acehnese Civil

Society Organization Strengthening). This program was launched in April 2006, not separated from the background of the post-tsunami Aceh and post-conflict conditions that prolonged. Yappika has seen the impact of these two momentum, it is important to reinforce the power of civil society elements to contribute to the promotion of more democratic governance and governments that serve the fulfilment of the basic rights of their people better and systematically, whether they are services concerning the right to education, health, and ease of public administration process.

Subsequently, to encourage the improvement of public services in Aceh, Local Governance Innovations for Communities in Aceh phase 2 or abbreviated Logica2 - an Australian Aid-funded program to support development programs in Aceh in the area of governance and public services - seeks to arouse CSO involvement in support of Government performance to implement Minimum Service Standards (MSS) in health (JSP3, 2014). The CSOs active in this program were Jaringan Sipil Peduli Pelayanan Publik (JSP3) which is a consortium of three CSO networks in Aceh, namely Balai Syura Ureung Inong Aceh (BSUIA), Koalisi NGO HAM Aceh, and Forum LSM Aceh. JSP3 performs technical support in the field. The participation of JSP3 is a step to involve civil society organizations directly in strengthening MSS throughout Aceh. JSP3, Logica2 and Aceh Government collaboration is the first partnership in Indonesia involving donors, NGOs and Local Government in encouraging the implementation of MSS at the provincial level (JSP3, 2014: 67). Also, there are efforts to encourage good and clean government through budget monitoring and access to public information, such as those conducted by GeRAKAceh, Masyarakat Transparansi Aceh (MaTA), Rumoh Transparansi Aceh as well as Koalisi NGO HAM Aceh. In the

implementation of the program, in addition to assisting, the organization also conveys the results of its supervision through local newspapers such as *Serambi Indonesia* and other mass media.

4.4 Economic and Social Empowerment Action

Economic development is an important agenda and is the best way to nurture and strengthen peace. This is as stated in the concepts put forward by the UN, peace through development; and economic development is also at the same time an arena for showing local democracy and achieving people's welfare. (Eko and Tjoetra, 2012). In the context of reconstruction and post-conflict development, the Multi-Donor Fund (MDF) has since 2009 implemented an Aceh Economic Development Financing Facility (AEDFF) program, prepared to support Aceh's economic recovery and in accordance with the Master Plan for Regional Rehabilitation and Reconstruction (Perpres 47/2008) , LoGA, and also the Provincial Medium Term Development Plan (RPJMD). Programs aimed at encouraging sustainable economic growth and employment creation across Aceh grants the US \$ 50 million to the Government of Indonesia through Bappenas and the Ministry of Underdeveloped Area Development (KPDT) (Eko & Tjoetra, 2012; Antawati & Nurdibyanandaru, 2019).

The program is managed by the Government of Indonesia, the Government of Aceh and the World Bank. Of the 121 proposals submitted, 83 proposals came from CSOs. Thus, one of the proposals named TERAPAN, proposed by ADF with its partners; Faculty of

Engineering, Syiah Kuala University, BIMA and An-Nisa 'Center associations, were selected as EDFD implementers in Pidie Jaya and Bireuen districts. The ADF and its partners are the only local organizations that receive recognition and trust to implement the EDFD program, while the other 7 (seven) are international organizations with local partners². Also, some CSOs also carry out the economic empowerment agenda and social cohesion. For example, one of the programs being done collaboratively by Saree School, is Beng Mawah and ACSTF in Seulawah, Aceh Besar. While Saree School carries out the role of capacity building for the members of the accompanying group, Beng Mawah conducts a mentoring and capital lending process for its group members. The activities undertaken by Beng Mawah are aimed at enhancing cooperation in the community with the development of agricultural production and marketing. Meanwhile, ACSTF conducted policy advocacy on improving the economy of post-peace community through Bappeda Aceh (Vathimuniandy et al., 2018; Fitriani & Suryadi, 2019).

5. CONCLUSION

Based on the above description, it can be understood that various roles have been implemented by CSOs in Aceh, both during the conflict period, post-tsunami disaster, and post-Helsinki MoU. Particularly for the

² A number of international organizations as implementers of the program consist of the Canadian Cooperative Association and NGO PASKA (*Pengembangan Aktivitas Sosial Ekonomi Aceh*), Action Aid Australian and *Keumang* (local NGO), Swisscontact with local and international private sector partners, and Muslim Aid with Syiah Kuala University and local livestock officials, Islamic Relief with Aceh Ocean Coral (AOC), International Organization of Migration with Future Bridge (JMD), a Jakarta-based organization.

role of CSOs in Aceh after the Helsinki MoU, it is possible to refer to the changing situation of the conflict to a peaceful situation, followed by the transformation of the roles and issues that CSOs have conducted in Aceh. Moreover, the New Aceh Scenario can be a reference to the development of sustainable positive peace. With its various advantages and disadvantages, CSOs can move across sectors as well as lines and efforts at the micro and macro level. If before the MoU, the approach is confrontational with the policymakers then in the peacebuilding has begun to use a participatory and collaborative approach. Ideally, CSOs serve as democratic schools where people learn to think and act democratically, be tolerant toward diversity and pluralism, acceptance and compromise, and build mutual trust and cooperation in (Chairul et al., 2014). CSOs as an advocacy agency can influence government policy to raise the bargaining power of the people and use official channels in encouraging open, free and fair political debate or decisions. Thus, CSOs should establish institutions that can act independently and are prepared to deal with the government, whether in support or influence policy, is one of the instruments in the process of democratization.

Given the situation of post-conflict Aceh, by Thania Paffenholz (2009), then socialization and social cohesion functions occupy high positions and activities. Some activities can be implemented with the aim of strengthening social ties between community groups and building social capital in the community. Besides, CSOs in Aceh should build effective communication with communities and policymakers. This facilitation agenda, in addition to re-establishing relationships with the community, is also useful in ensuring the presence of CSOs in Aceh that is different from the state and market participants. Afterwards, it is also important to

maintain relationships that have been established nationally and internationally to support the peace-building process. The form of supports needed to ensure the role of CSOs in Aceh can be divided into two parts: internal and external. Internally, CSOs in Aceh need ongoing capacity building support, including potential funding support. This support is to enhance institutional capacity, transparent and accountable management of institutions, and to enhance inter-institutional relationships. This is important to gain public trust and as one of the implementations of the Public Information Disclosure Act.

For external support is expected to be the implementation of policies related to ongoing changes in Aceh. One form of support in terms of the guarantee of active participation of the community is the process of planning, implementation, and supervision of development. This can be a means to build and strengthen social cohesion among post-conflict Acehnese communities. Moreover, based on the experiences of CSO activists, the Government in Aceh supposed to maintain the sustainability of the implemented programs. Also, the Government in Aceh is also possible to establish cooperation with CSOs through a grant scheme for some long-standing institutions with a clear track record, as opposed to providing grant funds for newly established networks or organizations. This effort is also a form of appreciation from the Government of Aceh to the CSOs in Aceh who have been serious in making peace and active in the recovery and reconstruction period in Aceh. To that end, CSOs in Aceh should actively build and expand communication, both on community groups, policymakers, and market participants. This agenda is a series to strengthen the CSO's image in Aceh and ensure its role for the sustainability of peacebuilding in Aceh. The CSO's strength should be a

counterweight force but undermined by a practical political agenda. Also, some CSO activists are divided into existing political forces, both in local and national political parties. So that CSO reconsolidation efforts also face challenges because of the political influence that impacts the current movement of CSOs.

REFERENCE

- ACHDIAN, A., & ISHAK, O. 2007. **Aceh Transitional: Future Aceh Scenario Draft (2007-2017)**. Banda Aceh: Yayasan TIFA – ACSTF.
- ANTAWATI, D., & NURDIBYANANDARU, D. 2019. **Parenting behavior of hearing impaired parents**. *Humanities & Social Sciences Reviews*. Vol. 7, N° 3: 67-73. India.
- ARMAN, S., AKHMETOV, D., MUCHKIN, E., UTYUBAYEV. 2016. **Some Aspects of the Students-Future Teachers' Personal Development in the Conditions of Civil Society Formation**. *International Electronic Journal of Mathematics Education*, Vol. 11, N° 7: pp. 2129-2136. Turkey.
- EKO, SUTORO & AFRIZAL TJOETRA. 2012. **Building Aceh Peace: Lessons and Contribution of Civil Society Organizations through Implementation**. Banda Aceh: Aceh Development Fund (ADF). Indonesia.
- FAHMI, C., & TJOETRA, A. 2014. **Political Relations between CSOs and Political Parties: A Dynamics and Challenges of Civil Movements in Aceh**. Banda Aceh: The Aceh Institute & The Asia Foundation. Indonesia.
- FITRIANI, N., & SURYADI, I. 2019. **A review study on online psycho-education for the bipolar disorder patient and their caregivers**. *Humanities & Social Sciences Reviews*. Vol. 6, N° 2: 84-89. <https://doi.org/10.18510/hssr.2018.6210>. India.
- ISHAK, O. 2000. **From forgiveness to Panic of Aceh: A Sketch of Political Sociology**. Jakarta: Lembaga Studi Pers dan Pembangunan (LSPP).

- ISHAK, O. 2008. **Peace: What Is Trying, Which Opposes the Chronicle of RI-GAM Negotiations in Helsinki?**. Jakarta: Acehese Civil Society Taskforce.
- JARINGAN, S. 2014. **Struggling for People's Health: CSO and Government Collaboration for the Implementation of SPM Health**. Banda Aceh: Balai Syura Ureung Inong Aceh, Koalisi NGO HAM Aceh, dan Forum LSM Aceh. Indonesia.
- KONSORSIUM ACEH BARU. 2011. **Evaluation of Aceh Future Transition Scenario Aceh Scenario (2007-2017): Building Foundation towards Independent Aceh**. Banda Aceh. Konsorsium Aceh Baru. Indonesia.
- PAFFENHOLZ, T. 2009. **Civil Society and Peacebuilding**. CCDP Working Paper, No. 4.
- PAFFENHOLZ, T., & SPURK, C. 2006. **Civil Society, Civic Engagement, and Peacebuilding**. Social Development Papers, Conflict Prevention and Reconstruction, World Bank, Paper No. 36, October. USA.
- PARVER, C & WOLF, R. 2008. **Civil Society's Involvement in Post-Conflict Peacebuilding**. International Journal of Legal Information: Vol. 36: N^o 1. UK.
- SURYADI, C. 2006. **Reconstruction of Civil Society: Discourse and Action of NGOs in Indonesia**. Jakarta: Pustaka LP3ES.
- USEN, S., ALIMBETOV, A., APYSHEVA, L., BELOUSSOVA, I., ZHAPAROVA, K., KONBAEVA, K., NEMERENEVA, N., NURGUL, K., SHAIHANOVA, K., SHOLPANBAEVA. 2016. **Theoretical Aspects and Methods of Evaluating the Economic Efficiency of Corporate Management in the Banking Sector of the Republic of Kazakhstan**. International Electronic Journal of Mathematics Education, Vol. 11, N^o 6: pp. 1505-1518. Turkey.
- VATHIMUNIANDY, P., OTHMAN, A., & JAMALUDDIN, S. 2018. **The influence of self-drive on the development of Malay language programme: non-native adults' perspective**. Humanities & Social Sciences Reviews. Vol. 6, N^o 2: 74-83. <https://doi.org/10.18510/hssr.2018.629>. India.
- ZARDENBEK, S., BAGDAT, S., RAKHMETULINA, E., NAURYSBAEV, B., NUKIEV, A., AIMUKANOVA. 2016. **Analysis of the Main Trends in the Development of Civil Society**

Institutions in the Republic of Kazakhstan. International Electronic Journal of Mathematics Education, 2016 – Vol. 11, N° 7: pp. 2203-2212. Turkey.



**UNIVERSIDAD
DEL ZULIA**

opción

Revista de Ciencias Humanas y Sociales

Año 35, Especial N° 19, 2019

Esta revista fue editada en formato digital por el personal de la Oficina de Publicaciones Científicas de la Facultad Experimental de Ciencias, Universidad del Zulia.
Maracaibo - Venezuela

www.luz.edu.ve

www.serbi.luz.edu.ve

produccioncientifica.luz.edu.ve