

History, Topography, Demography, Socio Economic and Political Profile, and Health: A Systematic Review of Literature Pertaining to ARMM: One of the Bases for the Development of ARMM Research Agenda

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ABSTRACT

The research agenda for Autonomous Region of the Muslim Mindanao (ARMM) for 2017 to 2022 must be set. This agenda will be the basis for the development of future researches in the next five years. There is a need to review literature and data about ARMM so that researchers and stakeholders can focus on the problems of the ARMM provinces. Conducting researches based on agenda issues can significantly help generate solutions that match the real health needs of the region. Despite the presence of an available systematic reporting system in the area, there is a dearth of literature on the data necessary to comprehensively review some aspects of health in ARMM. This systematic review examines the literature only on the history, topography, demography, socio-economic, political profile of the region and its relation to health from 2010 to 2015. The electronic databases reviewed for the systematic review of the literature included the ARMM official Website, the Website that publishes Philippine Statistics Authority Reports regarding ARMM i.e. *CountrySTAT*, Google Scholar website, 2015 Census of Population data, DOH FHSIS data 2012 - 2015, the ARMM Transparency Seal of Approved Budget, PSA Family Income Expenditure Survey and National Anti-Poverty Commission websites, CHED website, and website of the Philippine Council for Health Research and Development. The search terms included "ARMM," "history," "topography," "demography," "socio-economic profile," "political profile," and "health." Seven sets of articles and data were reviewed. The available data and reports provide evidence used as the basis for the formulation of research agenda for ARMM. The literature was divided into the themes i.e. history, topography, demography, socio-economic, political profile and emerging health issues. The available literature provides evidence that the emerging issues can contribute to the drafting of research agenda for ARMM for 2017-2022. The systematic review revealed gap/issues which can be made as a guide for further research towards solving the health problems of ARMM.

Keywords: ARMM, Health, Systematic Review of Literature, ARMM Research Agenda

I. INTRODUCTION

In the making of ARMM-specific research, the basis should be the needs of the region. Identification of requirements is necessary so that there will be no wasting of resources when doing research. Such kind of research will have an impact because it can become the basis for sound solutions to problems experienced in the region. The purpose of this systematic review of documents and literature is to examine evidence or data. This study is intended to help in identifying the current scenario or status and reveal gaps which can be used in agenda-setting in the formulation of ARMM researches for the next five years.

A research agenda is needed by a region to serve as the basis for the making of future research investigations. It will set directions for and guide stakeholders to pursue and fund the most necessary research. When a study fails to address the problems in ARMM, it becomes a useless endeavor. Government funds, as well as

time spent, and efforts done by all involved in such will become fruitless because the output will not be of optimal use. Studies should thus be based on apt agenda for them to be contributive of sound solutions. The purpose of this study is to review the history, topography of the region, the demography, the socioeconomic and political profile of the ARMM region so that the stakeholders can analyze what are lacking in the region and understand the implications of such in pursuing researches regarding health. Stakeholders must also be knowledgeable as to what topics need to be studied so that the result can be a real contribution towards ARMM's progress. The right research will help facilitate the transformation of the ARMM region towards a strong, healthy region.

II. METHODS AND MATERIALS

Research Parameters

The aim of the literature review was to examine the literature/data that contain reports on the history, topography, demography, socio-economic, and political profile of ARMM. It also

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investigated the implication or impact of these mentioned profiles on the general health of the region. The electronic databases reviewed included the ARMM official Website, the Google Website that published Philippine Statistics Authority Reports regarding ARMM, the Regional Board of Investment-ARMM official website, Google Scholar, 2015 Census of Population data, Department of Health (DOH) Field Health Service Information System (FHSIS) data 2012 to 2015, the ARMM Transparency Seal of Approved Budget, PSA Family Income Expenditure Survey and National Anti-Poverty Commission websites, CHED website, and the website of the Philippine Council for Health Research and Development. The selected sites included sets of data found in the documents from concerned government offices, full-text articles, reviews, and some theses done between 2008-2015. The search terms used included: "history of ARMM," "topography of ARMM," "demography of ARMM," "socio-economic profile of ARMM" and "political profile of ARMM" and "health." Moreover, the literature review went beyond the parameters of automatic search to include data sets like FHSIS of DOH, and articles examined for additional literature reviews. Lastly, interviews were conducted with DOH Nurse Deployment Project (NDP) nurses and hospital nurses to obtain further knowledge and validate data collected from articles and websites.

III. RESULTS AND DISCUSSION

History

Review of available information on the history of the ARMM in the literature examined for this study gleaned salient information regarding the origins and components of the autonomous region and emphasized the struggle of the Bangsamoro people for self-determination as an important nuance to the context of its creation. As stated in the information provided in official website of the region:

"The history of the Autonomous Region in Muslim Mindanao (ARMM) can only be understood in the context of how the Bangsamoro people **continuously struggle for self-rule and self-determination** and how the national politics address the "Moro problem."

The creation of which was enshrined in the 1987 Constitution and established by Republic

Act 9054, the ARMM is now composed of the provinces of Basilan, Lanao del Sur, Maguindanao, Sulu and Tawi-Tawi, and the cities of Marawi and Lamitan." [ARMM History] (nd). Retrieved from <https://armm.gov.ph/discover-armm/history/>

CountrySTAT, the web-based system established by the Philippines Statistic Authority (PSA) also expounded on the origins and components of the region thusly:

"The Autonomous Region in Muslim Mindanao (ARMM) is located in Southern part of the Philippines. Republic Act No. 6734. The law that created ARMM was signed into Law by the Late President Cory C. Aquino on August 1, 1989. The plebiscite was conducted in ARMM on November 17, 1989. These were the provinces of Maguindanao, Lanao del Sur, Sulu, and Tawi-tawi. The Region was strengthened and expanded through ratification of Republic Act No. 9054, amending for the purpose of Republic Act No. 6734, entitled "An Act Providing for the ARMM" as amended in September 2001. The plebiscite paved the way to the inclusion of the province of Basilan and the City of Marawi as part of ARMM." [Regional Profile: Autonomous Region in Muslim Mindanao (ARMM)]. (nd.). Retrieved from <http://countrystat.psa.gov.ph/?cont=16&r=15>

Emerging concerns/gaps

Some places of the ARMM region like Butig in Lanao del Sur and parts of Sulu have cases of peace disruptions. These disturbances to peace and order could be attributed to the history of struggle for self-governance which have involved armed struggle.

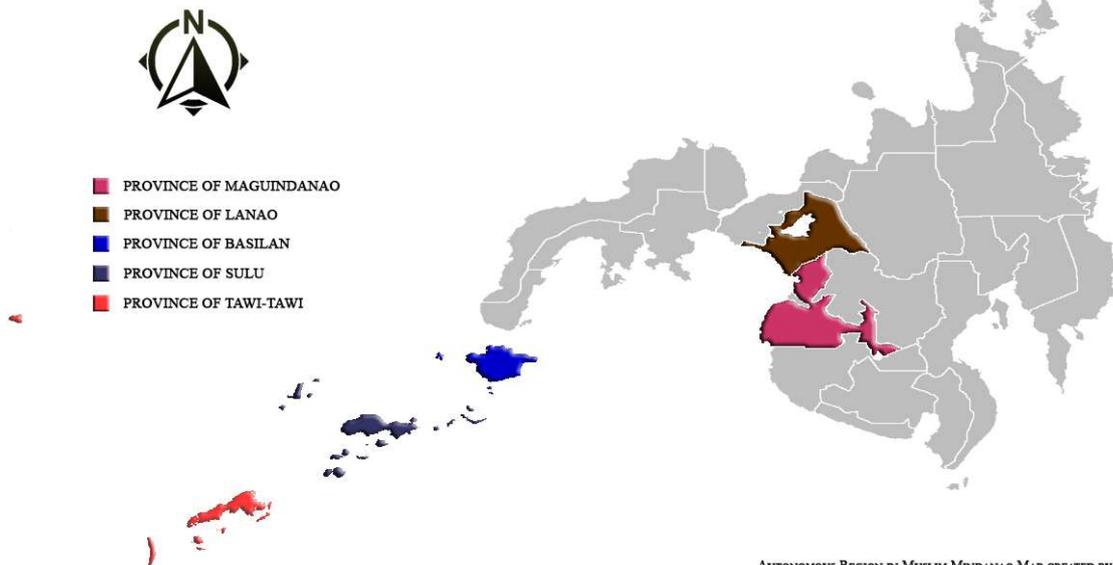
Insurgents' attacks in some areas have been known to lead to mass evacuation situations which inevitably affect health care service delivery. There is thus a need to investigate the continuity in the delivery of health services to those who are displaced by these disruptions as well as what possible governmental and non-governmental projects can be done to help them. Places racked by violent conflict are more likely to experience higher rates of chronic poverty which also affects health.

Given the circumstances mentioned above, it is reasonable and necessary that peace-building concepts be aptly integrated into all elementary, secondary, and tertiary medical and health curricula especially within the region. Course contents and methods must be consistent with peace education. Training

ARMM MAP



MOVE MOUSE POINTER ON THE PROVINCES TO VIEW MUNICIPALITIES



AUTONOMOUS REGION IN MUSLIM MINDANAO MAP CREATED BY ICTO-ARMM. COPYRIGHT© 2016.

Figure 1. The ARMM Map showing the five provinces composing ARMM
Source: ARMM official website

programs for service providers also need to be incorporated with subject-matter regarding the attainment of peace.

Topography

ARMM has a total land area of 3,665,095 hectares [Regional Profile: Autonomous Region in Muslim Mindanao (ARMM)]. (n.d.). Retrieved from <http://countrystat.psa.gov.ph/?cont=16&r=15>. The province comprises five provinces, namely: Lanao del Sur, Maguindanao, Sulu, Tawi-Tawi and Basilan as well as two cities i.e. Marawi City and Lamitan City. Below is basic information regarding the provinces within the region.

Lanao del Sur

"Lanao del Sur is well-enclosed within the Bukidnon-Lanao highland areas with a series of plateaus, plains, highlands and basins, rolling hills and volcanoes whose mountain ranges serve as a natural boundary from Maguindanao and Cotabato. The province has a total land area of 13,754.24 square kilometers with 387.32 square kilometers of water area composed of lakes and swamps." [History of Lanao del Sur]. (n.d.). Retrieved from <https://lanadelsur.gov.ph/about/history/>

Maguindanao

"The province of Maguindanao can be divided into two physiographic units. There are the southwest cluster and Maguindanao lowland. The southwest mountain clusters include the two big groups of mountain elevation: Binace and Bilit. They are separated by the valley of

MTUGAR RIVER which flow northwest into Moro Gulf and Liwasid River which flow into the Mindanao Sea. The Maguindanao lowland includes the north extremity of Cotabato basin northeast of the rural highlands. The area is sloping from the foot of hills to relatively flat as it approaches the sea and materials derived from the weathering and erosion of adjacent emergent landmass". The biggest and longest river in Mindanao is the Rio Grande de Mindanao. The northeastern boundary of the province and as much the west banks are within the province, jurisdiction."

[ARMM Regional Profile]. (n.d.). Retrieved from <http://rbciamm.gov.ph/info-center/basic-facts/amm-regional-profile>

Sulu

"The Sulu archipelago is marked by some mountain ranges that traverse the mid-section of the island of Jolo from east to west. The mountain chain includes Mt. Tumantangis, Mt. Pula, Mt. Kangangan, and Mt. Datu. Siasi Island is also hilly. The other islands, such as Pangutaran are coral formation resulting to low, swampy, flat and forested areas. However, numerous places around the reef-surrounded island afford anchorages. The province of Sulu, being known for its shining land and the moody sea lies on the southernmost part of the Philippines, with islands of varying terrains, which source is of volcanic origin while others are of coral formation with small, forested and swampy areas." [ARMM Regional Profile]. (n.d.). Retrieved from <http://rbciamm.gov.ph/info-center/basic-facts/amm-regional-profile>

Tawi-Tawi

"The Tawi-Tawi archipelago is comprised of islands settled on top of a huge sea mountain. Among the Islands, Tawi-Tawi has the least rugged relief. Its major peaks which include Mt. Datu Sali, St. Sitangkai and Mt. Baluk Sampan do not go beyond 600 ft. There are two rivers in the area-the Malum and Luuk. Malum is the biggest river. It serves as the transportation passage of the residents in the upper area and also a drainage. It originates from Mt. Bulungan, Mt. Binwang and Mt. Datu Sali and flows South-westerly receiving Magsagao Stream and its boundary."

[ARMM Regional Profile]. (nd). Retrieved from <http://rbci.amm.gov.ph/info-center/basic-facts/amm-regional-profile>

Health gaps, problems and emerging concerns considering topography

There are emerging health gaps, concerns and problems concerning the topography of the provinces. Residents in ARMM region can be affected by geographic location. The areas will face the challenges posed by geographical constraints regarding accessibility and continuity of health care. Aging rural communities far from urban places face the possibility of becoming stagnant. As postulated by Fang et. al., "In mountain areas, the percentage of residents who may not have used health services despite feeling unwell could appear and to be higher than elsewhere." (2014) The people may see health services with different views especially with regards to the importance of the health services. There can be possible problems with continuity of care, and efficiency of health care services because of the geographical location. The region has lakes and rivers making the communities living around these bodies of water vulnerable to climate-induced diseases like gastroenteritis, dengue, and other waterborne diseases. The low socio-economic status and lack of possible inadequate health care knowledge and practices can aggravate these conditions. Residents can become vulnerable to epidemics. ARMM needs to be given attention especially regarding its health issues, in the implementation of ecological and environmental development programs, specifically for appropriate malaria and dengue control measures to counteract the possible increased risks near these bodies of waters. Distance coupled with transportation problems can be detrimental. For example, the utilization and access to some health programs can be difficult. As illustrated in King-Schultz and Jones-Webb: "Women living three or more

hours walking time from the dispensary were significantly less likely than those living within three hours to utilize any prenatal care." (2008)

It can be reasonably expected that there are many of what the DOH calls Geographically Isolated and Disadvantaged Areas (GIDA) in the ARMM. According to the said agency's website the consolidation and examination by the Bureau of Local Health Development of the list of GIDA areas submitted by the Center for Health Development is currently underway. However, publication regarding this is wanting.

Meeting the needs of the communities in remote, isolated areas of ARMM may require a new model of health service delivery. This health service delivery may require collaboration and partnership in the community wherein all should have responsibilities. This strategy must involve the health service providers (RHU personnel) and community residents in such a manner that both need to increase health promotion and primary care prevention practices.

ARMM Urban Centers

There are two cities included in the ARMM: Lamitan City and Marawi City. These cities are complex. Dataman et al., explained that "Marawi City for one is vulnerable to threats from both natural hazards such as climate change and rising population, which brought issues on health, sanitation, congestion, poor housing condition and increasing cases of environmental and ecological problems" (2012).

In Lamitan, the chief executive disclosed that "the population is growing and congestion and garbage will soon pose a huge problem." (2014) More and more morbidity cases such as pneumonia and tuberculosis can be increased in number in the future. Godschalk explained that "[t]here can be times that current policies in hazard mitigation, control of disasters, current practice, and knowledge of residents may fail to deal with the unique aspects of cities under stress. These conditions can signal the need for an initiative of a certain city to expand. There is a need to become resilient and do initiative, including developing urban systems research, health education and training on disease prevention, and increased collaboration among professional groups involved in city building and hazard mitigation, health promotion and illness prevention." (2003)

Urban populations can be affected by

climate change. It represents a range of environmental hazards and will impact communities – where the current burden of climate-sensitive disease e.g. asthma, pneumonia is high — such as the urban poor in low- and middle-income region like ARMM. The methods for assessing the effect of climate change are in an undergoing development, and there is a need to focus on local studies particularly in ARMM. Sectoral approaches to climate change impact assessments and often ignore the effects on health. There is a need to improve the effectiveness of public health interventions better.

The growing slum population in the developing region such as ARMM is an increasing challenge for local health authorities. Despite the high vaccination coverage for this population, morbidity may increase. Socioeconomic factors and environmental conditions may lead to poor garbage, excreta disposal, malnutrition and occurrence of communicable diseases that are airborne and droplets transmitted such as TB, pneumonia, and others. Sound disposal of garbage which can be possible shortly to increase population in the cities must be improved to substantially reduce possibilities of morbidity and probably mortality in this region. Garbage can harbor water from the rain and overflowing lakes and rivers and may lead to possibilities of dengue epidemics.

Demography

Demography is the study of statistics such as population, births, deaths, income, or the incidence of disease, and other important data that will affect the population which illustrate the changing structure of human populations.

Population of ARMM provinces

Among the salient points of the information reviewed from the Philippine Statistics Authority include the population count of the ARMM as of August 2015 based on the 2015 Census of Population (POPCEN 2015) which was at 3,781,387. Furthermore, it is said that between 2010 to 2015, the population in the region increased on average by 2.89 percent annually. It further states that: “Among the five provinces comprising the region, Maguindanao (excluding Cotabato City) had the biggest population in 2015 with 1.17 million, followed by Lanao del Sur with 1.05 million, Sulu with 825 thousand, and Tawi-Tawi with 391 thousand. Basilan (excluding the City of Isabela) had the

smallest population with 347 thousand.” [Population of the Autonomous Region in Muslim Mindanao (Based on the 2015 Census of Population)]. (n.d.). Retrieved from <https://psa.gov.ph/content/population-autonomous-region-muslim-mindanao-based-2015-census-population>.

The population of the other provinces are detailed in **Table 1**.

Emerging concern and gaps

This population increase is an important matter for consideration. The increase in population will lead to concerns particularly in the field of maternal and child care including malnutrition. MMR is 1 % as of 2015 (10/1000) population. Possible causes of the increasing population could be a lack of awareness in regards to family planning and potential religious conflict. Increasing population can be a real problem associated with decreasing employment and eventually less food for increasing members of families.

Crude birth and death rates, Life expectancy, Functional Literacy, and Fertility Rates

Table 2 presents the crude birth and death rates, life expectancy, functional literacy, and fertility rates in the ARMM.

Crude birth rate is already high at 29.4% as of 2010-2015. This data can be supportive of population increase. One Muslim NDP nurse in Lanao del Sur mentioned: “Along with this line

Table 1. The Population of ARMM by province based on the 2015 POPCEN

Province	Population
Maguindanao	1,000,007
Lanao del Sur	1,000,005
Sulu	825,000
Tawi -Tawi	391,000
Basilan	347,000
Whole of ARMM	3,781,367

Table 2. Crude birth and death rates, Life expectancy, Functional Literacy, and Fertility Rates in the ARMM

	Period	Rate
Crude birth (per 1,000 population)	2010-2015	29.4
Crude death (per 1,000 population)	2010-2015	7.9
Total fertility (number of children per woman)	as of 2010-2015	3.5
Life expectancy at birth (in years)	as of 2010-2015	Male: 61.9
Functional literacy (10- 64 years old)	as of 2008	71.6

Source: Philippine Statistics Authority Quickstat ARMM December 2016

of maternal births the factors affecting increases in birth rates could be studied including health services needed for deliveries and births. It is also interesting to note birth deliveries attended by birth attendants, evaluation of family planning dropouts, family planning contraceptive, prevalence rate, completion of minimum prenatal visits can be researched.” (NDP Nurse A, March 28, 2017).

According to the World Health Organization (WHO), neglected tropical diseases (NTDs) are a diverse group of diseases with distinct characteristics that thrive mainly among the poorest populations. The DOH-ARMM has issued a call for help to address cases of (NTD) in the region, which includes diseases such as malaria, filariasis, schistosomiasis, rabies, as well as food and water diseases. ARMM Health Secretary Dr. Kadil Sinolinding, Jr. has said that these diseases affect a significant number of the region’s population. The prevention of the spread of these diseases in the ARMM region remains a problem. Making people stop or, at least, avoid the unhealthy practices such as “open defecation” remains a challenge. Sec. Sinolinding further said that resolving the problem on NTDs is life-saving and will assist the region’s poverty concerns. DOH-ARMM addresses tropical diseases. (2015, May 8). Retrieved from <https://mindanaoexaminer.com/doh-armm-addresses-tropical-diseases/>

The literacy rate included in Table 2 is also lower in comparison with that of other regions in the country. The functional literacy rate of the region in 2008 was 71.6 (this was the only data seen about literacy rate). This is indicated by the Philippine Statistics Authority. Apparently ARMM lags compared to other regions as mentioned by National Anti-Poverty Commission.

Implication/Emerging concerns

The negative effect of the low functional literacy apparent in ARMM is an important concern considering the apparent connection between low literacy and adverse health outcomes. As DeWalt, Berkman and Sheridan (2004) explained:

“Low literacy is associated with several adverse health outcomes. Based on the Published data identified by our systematic review, reading ability is related to knowledge about health and health care, hospitalization, global measures of health, and some chronic diseases. People who read at lower levels are

generally 1.5 to 3 times more likely to have an adverse outcome for people who read at higher levels.”

Moreover, it has also been noted that: “Patients with inadequate functional health literacy had an increased risk of hospital admission.” (Baker, Parker, & Williams, 1998).

Socio- Economic Profile of ARMM

The regional economy is largely based on the fishery, agriculture, and forestry sector which accounted for more than 50% of the region’s gross domestic products. Rice, corn, copra are the major crops of the area. The fishing industry is present in seas of Tawi-Tawi, Sulu, Maguindanao and the lakes and rivers of Lanao del Sur. Most of the labor force derive income from Agriculture and Forestry. **Table 3** below shows the employment rate, income and functional literacy.

Based on data from the National Anti-

Table 3. Regional economy of ARMM, income, employment, functional literacy, etc.

	Period	Rate
Employment	July 2016	97.1
Unemployment	July 2016	2.9
Underemployment	July 2016	7.7
Overseas employment	2015	1.5%
Annual average family income	2012	Php 129,000
Annual average family expenditure	2012	Php 112, 000
Annual average family saving	2012	Php 17,000
Functional literacy rate (10-64 years old)	2008	71.6

Source: Philippine Statistics Authority Quickstat ARMM December 2016

Poverty Commission and the PSA Family Income Expenditure Survey, the Autonomous Region in Muslim Mindanao (ARMM) remains the poorest region in the country. ARMM had the highest poverty incidence in 2012 and 2015. The poverty rate among households in ARMM rose to 53.4 percent in the first semester of 2015 from 46.9 percent in the same period in 2012. This means that 1 out of 2 families in ARMM had an income lower than the poverty threshold or the minimum income to meet the basic food and non-food necessities. The annual average income may not be enough if the members of the family are increasing. More budget for medicine and food is wanting.

Emerging concerns

As far as the correlation between poverty and health is concerned, it is worth noting the following postulation from Cameron & Williams

(2009):

“The status of being poor has an effect on health. It can affect children's cognitive performances in schools. Moreover, family members may become too sickly while earning a living. Hence, health remains an important pathway by which poverty can be transmitted across generations.”

Most of the employed health care providers in different provinces of ARMM are contractual and under an individual program which can be abolished or may not be sustained. Regarding this, one of the health workers interviewed mentioned that: “There is a need to assess and know what effect this has to the quality delivery of health services.” (NDP nurse B, March 28, 2017)

The Political Profile of ARMM

The persons found in the organizational chart below are managing the ARMM region. The organic act of ARMM no. 6734 section 11 stipulates that the Regional Government shall provide, maintain, and ensure the delivery of essential health education and services.

The ARMM management shall provide incentives for prompt payment of taxes by the constituents of ARMM. The Philippine National

Government will provide financial help to speed up the development of ARMM. The Regional Government will run the affairs of the government by the regional policy. In financing health projects, the ARMM officials can accelerate improvements especially those about health.

The ARMM Regional Legislative Assembly is headed separately by a Speaker. It is composed of three members for every congressional district. The current membership is 24. Of these members, six (6) are from Lanao del Sur including Marawi City, six (6) from Maguindanao, six (6) from Sulu, three (3) from Basilan and three (3) from Tawi-Tawi.

Regular members (3 members/district) and sectoral representatives, have 3-year terms; maximum of 3 consecutive terms. The Assembly exercises legislative power in the autonomous region, except on the following matters: foreign affairs, national defense and security, postal service, coinage and fiscal and monetary policies, administration of justice, quarantine, customs and tariff, citizenship, naturalization, immigration and deportation, general auditing, national elections, maritime, land and air transportation, communications, patents, trademarks, trade names and copyrights, foreign trade. It may also legislate on



**The Autonomous Region in Muslim Mindanao
Office of the Regional Governor**

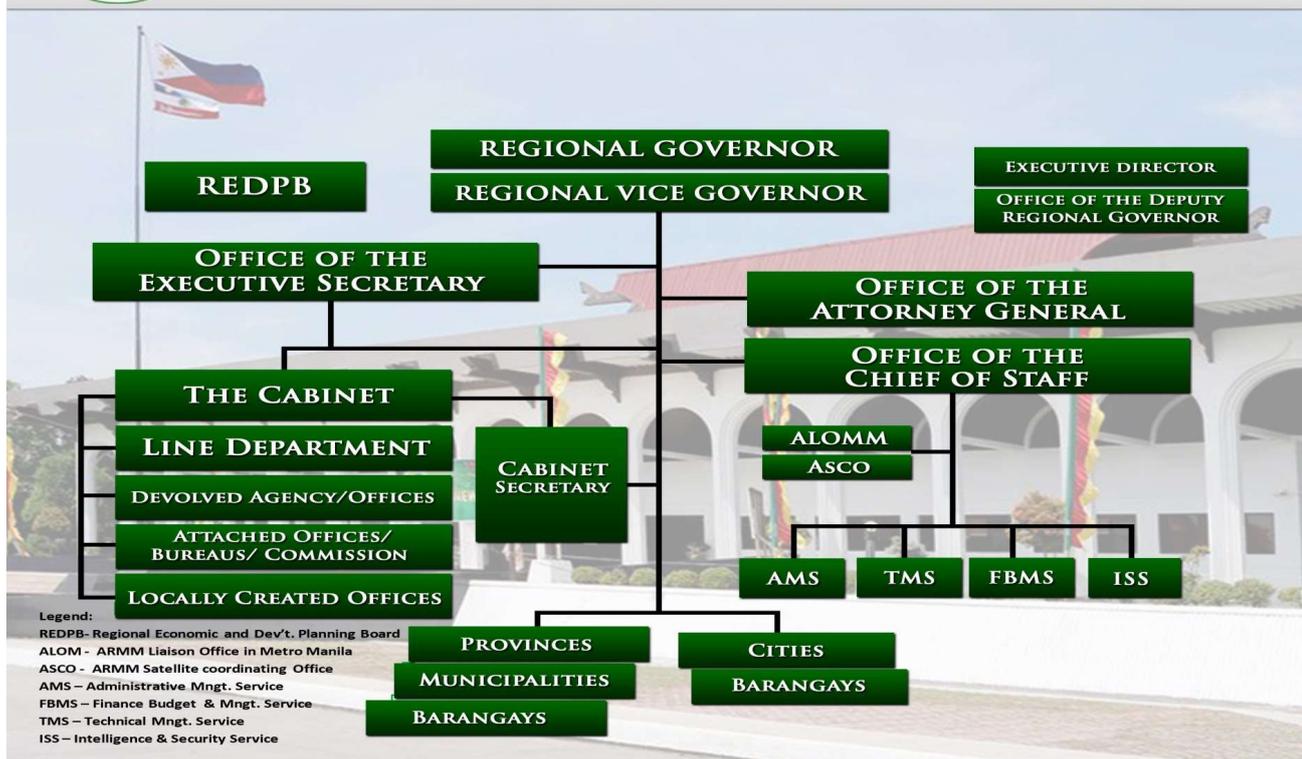


Figure 2. The organizational Chart of ARMM (Source: ARMM official website)

matters covered by the Shari'ah, the law governing Muslims.

ARMM Budget

Examination of the DBM Approved Budget and Targets for ARMM for 2016 and 2017, showed that the total budget of the region almost doubled from Php 28,492,010,000.00 in 2016 to Php 40,573,946,000.00. For the year 2017, Php 1,291,732,000.00 was allocated for the ARMM health budget. This was the second largest allocation made for the region, next to the one allocation for Education, Science and Technology Services amounting to Php 11,867,531,000.00.

Emerging concerns or implication

In financing health projects the ARMM officials can accelerate improvements especially those about health. The region has remote places and community residents far from urban sites. As mentioned by a field health worker "*Ang mga nagkasakit...malayo talaga sa mga tertiary hospitals.*" ("Tertiary hospitals are usually far from where the sick people are") (NDP nurse C, March 28, 2017). Perhaps more doctors should be assigned to ARMM RHUs whose salaries can be covered by the ARMM health budget.

Medical graduates of state universities who belong to cultural minorities should serve back the ARMM area and not actually to work in the other urban centers nationally or abroad. MSU medical admission gives priorities to cultural minorities. Hence they also need to serve the far-flung areas of ARMM who need doctors. ARMM can share or allocate medical scholarships for more physicians in the barrio.

Though not alarming in some documents on file, the occurrence of cases of dengue and waterborne diseases, as well pneumonia in the region point to a need to conduct studies in light of various factors such as increasing population, or the possible pollution of water basins that may lead to potential increases of epidemics.

Infrastructure of ARMM: Basis Budget

Infrastructure can affect health. The presence of hospitals that can answer the complicated health problems of the people should be there. For this study, no data yet was seen regarding additional hospital infrastructures. As far as health infrastructure is concerned, there are Rural Health Units (RHUs) in the areas of the region.

Since difficulties regarding the

establishment and maintenance of infrastructure related enabling access to, and delivery of, health facilities brought about by the mountainous nature of some of hinterlands or areas in the ARMM, are often exacerbated by disruptive activities of insurgent groups, studies that would help update health workers or service providers regarding which access points or roads are safe for users appears very necessary. Apparently, there are no studies which touch upon on ARMM highway safety. This concern has an inter-linkage between infrastructure and health outcome. One of the future highlights in the vision for ARMM in the next ten years will be the concrete roads and safe highways of the region. All of these have an impact on health status and the delivery of health care.

Study Limitations

As this systematic review was conducted by only one researcher in addition to some interviews and class discussions with NDP nurses, there could have bias in the selection of criteria, in the search of methodology and in the analysis of findings. The author recognizes the opinion that systematic review must be done, commented upon and completed by several researchers (Holopainen, Hakulinen-Vitanen and Tossavainen, 2007). Additionally, there have been constraints in the number of available documents, which include those found in the net in addition to some e-mailed documents from an ARMM-DOST Research Assistant. There is thus a need for more documents to be read and be critiqued in similar studies that could be done in the future.

IV. CONCLUSIONS

The available literature and data on history, topography, demography, socio-economic and political profile proved that there are research gaps that need to be focused as guiding points in the preparation of the ARMM research agenda. This systematic review can lay a foundation for further health researches in and about ARMM. The author also recommends that focus be given to the areas of concern enumerated below for each of the major themes in the literature studied and reviewed for this article.

The gaps/needs which can be the basis of possible research agenda derived from the examination of history of the region include the need to look into: evacuation and health service

delivery; continuity of health services for displaced families, chronic poverty levels and/or violence experienced in selected areas of the ARMM and the impact of such to health; psychological effects of violence on displaced children, and the evaluation of peace-building concept in the contents in the medical or health science curricula of ARMM Schools and Colleges, among others.

The gaps/needs and possible research agenda derived from the review of literature on demography include: maternal and child care; family planning; malnutrition; birth deliveries attended by birth attendants; evaluation of family planning drop outs, family planning contraceptive, prevalence rate, completion of minimum prenatal visits among mothers; literacy and health outcomes; knowledge about health treatments and health care, hospitalization, global measures of health; chronic diseases and lifestyle diseases; and neglected tropical diseases.

From the review of literature regarding the region's socio-economic profile, gaps/needs and possible research agenda derived include: the acceptance of indigents (i.e. beneficiaries of 4Ps) of maternal care, child care and family planning; compliance to hypertensive medications among the cultural minorities with low income sources; and the effect of contractualization in job efficiency in the Nurse Deployment Project (NDP).

Finally, the gaps/needs and possible research agenda derived from the review of political profile include; establishment of more tertiary hospitals in ARMM, deployment of rural doctors who are recipient of ARMM scholarship, road safety for health workers.

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